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# Ethnological Society of London,

FOR THE

STUDY OF THE HUMAN RACE IN ALL ITS VARIETIES, AND IN ALL THE PHASES OF ITS HISTORY AND PROGRESS.

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TRANSACTIONS

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## I.—*On the Supposed Stone, Bronze, and Iron Ages of Society.* By JOHN CRAWFURD, ESQ., F.R.S.

[*Read May 10th*, 1864.]

THE theory which supposes three different ages of civilisation, marked respectively by the use of arms and implements of stone, of bronze, and of iron, seems to have originated in the discoveries recently made by the examination of the refuse heaps of Denmark and the pile buildings of the Swiss lakes. As respects Denmark and Switzerland, and most probably several other parts of Western Europe in which the advance of civilisation was very slow, there can be little doubt but that the three ages above indicated did really exist; but if the order of progress indicated by them be applied, as a general rule, to all mankind, we shall soon find the theory refuted by the stubborn facts of history.

Man, created naked, houseless, and even speechless, but with a brain to invent, hands and tongue to execute, and necessity to stimulate him, has been enabled to surmount the seeming difficulties of his position. In his progress towards civilisation, his advance has always been in proportion to the opportunities presented to him, and to the capacity of the race to which he happened to belong. In so far as his progress is indicated by arms and tools, it appears to me that it may be divided into three periods. On man's first appearance, the most obvious materials would consist of wood or bone; and to this early time would probably belong the invention of fire. This would constitute the wood and bone age, of which, from the perishable nature of the materials, we can, of course, possess but slender records. This would be followed by the period in which tools and weapons were fabricated from stone, accompanied by the discovery of the art of fabricating utensils of clay fashioned by the hand. Such, however, might not always be the case, for the South Sea

islanders, who had invented stone arms and tools, and who were very far from being abject savages, were unacquainted with pottery, and in their ignorance of any vessel capable of producing boiling water, scalded their fingers at the tea-urn of Captain Wallis. This would constitute the second age, and the third (a great stride) would consist of that in which metals were substituted for stone. This might be called the metallic period. The metal which in this case would be first employed, would, according as circumstances were more or less favourable to the one or the other, be iron or copper—the only ones of sufficient hardness and ductility to make cutting implements. Bronze, of far more difficult production than either, would necessarily be a more recent invention.

Dr. Percy, in his great work on metallurgy, thinks that iron preceded all other metals, and thus expresses himself: "From suitable ore, of which abundant and readily accessible supplies occur in various localities, nothing more easy can be conceived than the extraction of malleable iron. Of all metallurgical processes, it may be regarded as amongst the most simple. Thus, if a lump of red or brown hæmatite (oxide of iron) be heated for a few hours in a charcoal fire, well surrounded by, or imbedded in, the fuel, it will be more or less completely reduced, so as to admit of being easily forged, at a red heat, into a bar of iron. The primitive method of extracting good malleable iron directly from the ore, which is still practised in India and in Africa, requires a degree of skill very far inferior to that which is implied in the manufacture of bronze. The production of this alloy involves a knowledge of copper-smelting, of tin-smelting, and of the art of moulding and casting. From metallurgical considerations, therefore, it is reasonable to suppose that the so-called age of iron would have preceded the age of bronze. Archæologists, however. seem generally to have arrived at an opposite conclusion, mainly from the fact that, while ancient objects of iron are exceedingly rare, ancient objects of bronze are abundant. But it should be remembered that iron is very rapidly corroded by oxidation, even in dry climates, whereas bronze is very slowly acted on, even in moist climates. Hence, if objects of iron were ever so numerous in ancient times, it is certain that only few could have been long preserved, as the conditions necessary to protect the metal from oxidation must have been quite exceptional."

On mere metallurgical considerations, there can surely be no question but that iron would have priority over copper and bronze; yet there are conditions under which this order has certainly been reversed, although they are exceptional. A people, as I shall endeavour to show in the course of this paper, must have attained a considerable measure of civilisation before they

had invented iron, however simple the process, and had forged tools and cutting implements of it, in substitution of stone implements. Even if malleable iron preceded copper and bronze, as most probably it did in most cases, it is certain that cutting instruments of the latter would be preferred down to the discovery of the art of fabricating steel, apparently not a very early one, for in some of the battles of the Romans with the Gauls, the swords of the latter are described as bending in action, and not having the quality of regaining their proper form, a fact which would imply that they were made of soft iron, or that the Gauls were not at the time possessed of the art of making hard iron or steel.

I shall now endeavour to give an outline of the introduction of metallic tools, implements, and arms, so far as I have been able to collect authentic materials for it. Iron was totally unknown to all the aboriginal inhabitants of America, and copper and bronze were known to but a small number of its more civilised nations. Their arms and tools were of wood, bone, and stone. The same was the case, not only with the savages of Australia and New Guinea, but with the more civilised inhabitants of the innumerable islands of the North and South Pacific Ocean, all of whom, since their discovery, have received iron with avidity, whenever they had the opportunity. Even the savages of the Andaman Islands, who had previously made their arrow-heads of stone, now make them of iron, availing themselves of the iron of wrecked European shipping. None of these rude people have themselves attempted to reduce iron from its ores, and of course, not the more difficult one of reducing the ores of copper and tin for the production of bronze. They receive the metals from strangers, as most probably did the rude forefathers of the civilised nations of Europe.

The rudest people possessed of the art of reducing the ores of iron to the metallic state are certain Negro tribes of Africa, and the least advanced inhabitants of the Malay Archipelago, as in the example of the Dayaks of Borneo. I have no new facts to communicate respecting the first of these people, and shall, therefore, confine my observations to the last. Several of the rude tribes of the interior of Borneo—unlettered savages, whose glory it is to waylay travellers and decapitate them, storing their heads as trophies—possess the art of manufacturing malleable iron and good steel. The process followed by them is nearly the same very simple one as that of the Hindus. The ores employed are always hæmatites or the purest oxides, and the fuel always charcoal. But in so far as philological evidence can be trusted, the invention of iron is not their own, but acquired from the Malays and Javanese —people tolerably civilised, indicated by a respectable knowledge of

agriculture aud the useful arts, with written language. While the languages of the savages of Borneo are different from those of these two civilised nations, nearly all the terms connected with such arts as they possess are taken from the Malay and Javanese; and among these the terms connected with the fabrication of iron, and the forging of tools and weapons from it, are taken from the Malay or Japanese languages, which, although differing essentially from each other, agree for the most part in this respect. Thus, the names for the furnace and the bellows, for iron and for steel, for the anvil, the hammer, the tongs, the file, the chisel, and the knife, the dagger and the sword, are all taken from the Malay and Javanese languages.

The use of these words of the dominant languages of Sumatra and Java, as connected with the invention and use of iron, is very general over the whole Malay islands, but to a considerable degree extends even to the remote Philippines. From all this, I think it must be inferred that the invention of iron was made by the civilised people of Sumatra and Java, the ruder nations being only imitators. The invention most probably originated in the first of these, which more abounds in available ore than volcanic Java. In the beginning of the sixteenth century, however, Java was the principal place of manufacture for tools and weapons, although probably the unwrought iron was imported from Sumatra. The tools and weapons, for instance, used by the Malays of Malacca at the time in question, we find, on the authority of the intelligent and faithful traveller Barbosa, were imported from Java.

All the metals which are native products of the Malayan countries are known by native names. These are confined to iron, steel, tin, and gold. Silver, copper and quicksilver are known only by foreign ones, the two last being taken from the Sanskrit. No mines of any of the three are ever known to have been wrought within the Archipelago, and they must consequently have been received from strangers, and these strangers were Hindus, the only people that in remote times are authentically ascertained to have held intercourse with the Malayan nations. Bronze or bell-metal has been long known to the Javanese, and largely used in the manufacture of musical instruments of percussion—the well-known gong, immemorially a considerable article of exportation to other islands of the Archipelago. The name for bronze in the Malayan languages is taken from the Sanskrit, and as the copper also must have come from India, we may conclude that the manufacture of bronze was introduced by the Hindus. This is, indeed, in a good measure proved by our finding among the ancient ruins of Java a great many relics of this alloy, consisting of Hindu images, bells, and sacrificial cups, the latter bearing dates which carry us back for five centuries.

Among these relics, I am not aware that a single tool or cutting instrument of bronze has ever been discovered. Neither have there been of those of copper, although plates of this metal, with ancient inscriptions, have been not unfrequent among the same ruins. It may, then, be safely concluded that tools and cutting instruments of bronze never existed among the people of the Malayan islands. The early inventions of iron and steel precluded the necessity for them; and here, therefore, at all events, a bronze age seems never to have existed.

America presents a case in which an age of bronze preceded one of iron; but even the bronze age itself was here preceded by one of copper. The case was, however, exceptional, and arose out of a peculiarity in the geological formation of a part of the American continent—the existence in the state of Michigan, and about the shores of Lake Superior, of extensive formations of copper in the metallic state. The ancient inhabitants had mined it, and tools and implements made from it have been discovered in the mound structures of the Ohio and Mississippi. This metallic copper, in the course of a rude traffic, found its way as far as Mexico and Peru; the civilised people of these regions adding to it a little tin, which is a native product of Peru, and of comparatively easy reduction from its ores, produced bronze, of which the tools and cutting instruments of the Mexicans and Peruvians were composed. No people of America had, as is well known, invented iron. Perhaps the more civilised nations may have rested satisfied with copper and bronze, both superior as cutting instruments to iron before the discovery of steel; and none of the savage nations had attained that measure of civilisation which seems everywhere to be indispensable to the first discovery of iron. In the case of America, then, there can be no question but that an age of bronze preceded that of iron, while that of bronze was itself preceded by one of copper.

Ancient Egypt seems to offer a case in which a bronze age clearly preceded an iron one, or, at least, in which cutting instruments of bronze preceded those of iron. In all the more ancient monuments of that country, while abundant tools, implements, and arms of bronze have been found, no authentic example of them in iron is recorded. We are not at liberty, however, to argue from this that iron was unknown when the ancient monuments in question were built. Suitable ores of iron for smelting were evidently rare in Egypt, for Sir Gardner Wilkinson, the most skilful and experienced of all our Egyptologists, was able to discover no more than a single ancient iron mine in all Egypt. From this it may be inferred that iron would be a scarce commodity; and, if the art of hard-casing it or converting it into steel had not been discovered, of course it would follow that bronze for cutting instru-

ments would precede it. After the Greek and Roman conquests, iron, which was the material at the time of the tools and cutting instruments of these people, would necessarily become more common. Even then, however, cutting instruments of a metal so liable to decomposition, even in the dry air of Egypt, where heavy dews prevail, would not be preferred for deposit in tombs. We are not, however, without at least one example of iron in an Egyptian tomb. The late Mr. Rhind, a most diligent and careful observer, discovered, in an unrifled tomb, hasps and nails of iron which he describes as being "as lustrous and pliant as the day they left the forge." A bi-literal inscription showed that the bodies interred in this tomb died in the twentieth year of the reign of Augustus. Even in this comparatively recent time in Egyptian history the metal was mere soft iron, and we have no example of the deposit of cutting instruments made of case-hardened iron or steel.

The relation of the metals in point of precedence, seems to be very strikingly illustrated by their condition in Japan, and the best authority on the subject is the diligent and trustworthy Kæmpfer, who visited that empire at the close of the seventeenth century (1690), about a hundred and fifty years after its discovery. Here is his account of the metals of that country:—"Copper is the most common of all metals dug up in Japan, and the produce of copper mines enriches several provinces. Brass is very scarce in Japan, and much dearer than copper, the calamine stone being imported from Tonquin in flat cakes, and sold at a very good price. Iron is much of a price with copper, iron tools being full as dear or rather dearer than those of copper or brass. Such household goods as hooks, cramps in buildings and ships, with such other instruments as are in other countries made of iron, are made in Japan of copper or brass. They do not dress their victuals in brass pans, but have a particular sort of kettles or pans, which are made of a composition of iron, and are pretty thin. The old ones of this sort are very much esteemed, and bought at a great rate, they having somewhat particular in their shape, and which make, at present, they have lost the art to imitate. The province of Bongo affords a small quantity of tin, so exceedingly fine that it almost comes up to silver. There is but little use made of this metal in the country."

Such is Kæmpfer's account, written a hundred and seventy-four years ago; and I do not believe there is at present much difference, for in looking into a price current of Yokohama, at present the principal port of our trade, I find a large exportation of copper as in the olden time, while there is no importation of European iron, such as there is into India and China. It may be inferred, therefore, that the relative value of copper and iron do not

materially differ at the present day from what they were in the time of Kæmpfer, the cheapness of copper, its long use, and its intrinsic superiority for many purposes giving it still a preference even when the cheaper metal presents itself.

From this statement it will appear that a bronze age never existed in Japan. Indeed, bronze or an alloy of copper with tin, is not named at all by Kæmpfer. No doubt, however, the Japanese are acquainted with bronze for the fabrication of bells, gongs, and the like. Indeed, tin from the Malay islands has long been imported into Japan in moderate quantities, most probably for the purpose of making this very alloy; and I see that our own merchants are now importing it, the quotation of price being 20 per cent. higher than that of the same article, at the same time at the emporium of Singapore. It deserves further to be observed as illustrative of the abundance and cheapness of copper in Japan, and the scarcity and high price of tin, that the last is dearer than the first by one-fourth part, thus reversing the proportion which holds good in Europe.

According to the statement now made, the ages of man or the stages of his social progress as measured by the materials of his tools and weapons, in so far as Japan is concerned, would consist of a wood and bone age, a stone age, and a copper age, while there would be neither an age of bronze or of iron.

I have, however, some observations to offer on the iron of Japan, which, although scarce and dear, appears to have been reduced from its ores with a skill far beyond that of the Chinese. The sword-blades of the Japanese are invariably described as of excellent quality, showing that they were acquainted with steel. They could not use copper vessels for culinary purposes, and had no tin to coat them; they therefore used cooking vessels of cast iron, for it is to these that I have no doubt Kæmpfer alludes. If so, it follows that, like the Chinese, and they only of all Asiatic nations, had the skill to produce furnaces capable of generating such a degree of heat as to reduce the ores of iron at once to the condition of cast iron.

If we look to the condition of the metals among the Phœnicians, the Jews, and the Assyrians—people all of them far in advance of all the nations of Europe three thousand years ago, those of Greece and Italy excepted—we shall find them in possession both of iron, copper, and bronze; but which of them was in most general use it is not easy to determine. That the Jews were early familiar with all of them, and also with tin and lead, is proved by the frequent mention of them in the Pentateuch and other parts of Scripture. The critics admit that the word which in our translation is rendered brass, should be sometimes bronze and sometimes copper. The helmet and the armour of the giant Goliath are described as of brass, in this case probably copper, and the point of his spear

of iron, but no notice is taken of his sword. When David collected materials for the temple which his son and successor was to build, he is said to have "prepared iron in abundance for the nails for the doors of the gates and for the joinings, and brass in abundance without weight"; the last of these probably signifying copper and bronze without weight, from which it might be implied that copper and bronze were more abundant in Judea than iron.

The Tyrians most probably furnished the Jews with all their metals, for they themselves, but mere shepherds, herdsmen, and husbandmen, are not likely to have been skilled in mining and the reduction of metals, not to say that their country is not rich in metallic ores. In the celebrated 27th chapter of Ezekiel we find what were the articles imported and brought into Tyre, with the names of the people, or the quarters, from whence they were imported. Egypt furnished fine linen and embroidered work; the Persians supplied mercenary soldiers; the Sidonians mariners; and Judea corn, honey, and oil. In like manner, Tarshish or Tartessus, considered to have been a Phœnician colony on the southern coast of Spain, furnished silver, iron, tin, and lead, all of them products of Spain, while Javan, believed to refer to the Ionian colonies of Greece in Asia, supplied slaves and brass, a word which if we translate copper, might have been the produce of the Island of Cyprus, close to Ionia, and famed for its abundance of that metal. The metals would be conveyed by a short easy land journey from Tyre to Jerusalem. The Tyrian workmen, alloying tin with copper, would produce bronze, in their hands the obvious molten material of the metallic ornamentations of the temple of Solomon.

From the discoveries of Mr. Layard, we find that the Assyrians, one of the greatest and most civilised of the nations of ancient Asia, were well acquainted with gold, silver, copper, iron, tin, and bronze. They had tools, vessels, and cutting instruments both of iron, copper, and bronze, but we judge iron to have been the most common from finding it to compose the main part of articles in the fabrication of which the metals are combined, copper or bronze being confined to the inlaid and other ornamental portions. In the Nineveh excavations, objects of bronze are far more frequent than those of iron, but this is obviously owing to the far more rapid decomposition of the latter from oxidation. Mr. Layard discovered in the excavations of Nimrood an iron helmet and the scales or plates of a suit of iron armour, but both in such a state of decomposition through the oxidation of three thousand years that they fell to pieces on being handled, and the fragments only are now preserved in the British Museum.

Iron, then, appears to have been with the Assyrians in more general use than either copper or bronze, although, from its more

rapid decomposition, we have necessarily fewer relics of it. According to Mr. Layard, it was, indeed, an export from Assyria to Egypt.

Iron and steel, although not cast iron, appear to have been known to the Hindus beyond the reach of all record. So have been copper, tin, and bronze. Iron alone is extensively diffused over India. Copper is sparingly produced, and gold, silver, tin, lead, and zinc have always been importations. India, with its advanced civilisation, may be considered as one of the countries in which the art of reducing the ores of iron to the metallic state was first invented. Bronze has also been immemorially known to the Hindus, and has been found in very ancient coins, images, and sacrificial utensils. I am not aware, however, that there is any evidence of its having ever been used in India in the fabrication of tools or cutting instruments, as it was in Egypt, Greece, and Etruria. One of its elements, tin, is not a product of the soil of India, but an import from a comparatively remote country, while at the same time the manufacture of steel is to all appearance of great antiquity. We may safely conclude, then, that with the Hindus, bronze did not precede iron, but, on the contrary, followed it. The probability is, that the inventions both of iron and steel were made in India at several independent points, for I find that not only do the names of these commodities, but of the tools and implements made from them, differ in the different classes of the languages of the country.

The Chinese now possess, and seem for many ages to have possessed, far more metallurgic skill than any other people of Asia, unless we except the Japanese, who seem to be in this respect, at least, their equals. Indeed, it may be said that, in metallurgic skill the Chinese excelled the nations of Europe even down to the middle of the last century, although now so far behind them. They possess and they work mines of gold, silver, copper, quicksilver, lead, and zinc. Down to the middle of the last century they were the only people in the world practically acquainted with zinc, and of its alloy with copper or brass.

With bronze the Chinese have been long familiar, using it for gongs, bells, images, and utensils. This alloy, however, was known in ancient times to Greeks, Romans, and Hindus, as well as to the European nations of the middle ages, having been obtained by the process called "cementation," that is, by smelting a bar of copper in a bed of calamine, or oxide of zinc and carbon. Consulting my friend Mr. Wade, at present her Majesty's Chargé d'Affaires at the Court of Pekin, one of the first Chinese scholars and archæologists of our time, I cannot find that there is any evidence of the Chinese having ever used bronze for tools or cutting instruments. This people must, therefore, be set down as one of those among whom the use of iron preceded that of bronze.

As to the races of man in Europe, in so far at least as the more advanced of them are concerned, the use of iron and bronze seems to have been cotemporary, bronze being preferred for cutting instruments, down to the discovery of the art of case-hardening iron, when the last superseded it. In the time of the Homeric poems and of the early Greeks, the sword was of bronze, but as the Greeks advanced in civilisation it was of hard iron.

As to the very rude people who constructed the pile-villages of the Swiss lakes, and the yet ruder of Denmark, of whose existence, like that of the savages of Australia, the only record consists in huge heaps of shells, the refuse of their coarse diet, it may be readily conceded that bronze was known to them before iron. But it is impossible to imagine a people in so barbarous and precarious a state of existence to have been the fabricators of their own tools and weapons of such a material, for this would suppose them possessed of the art of reducing the ores of copper, of importing tin, and of smelting, moulding, and casting bronze. It is evident to me that the implements and weapons of bronze which so rude a people possessed must, of necessity, have been supplied by strangers more advanced than themselves. The party furnishing them to the Swiss pile-builders would probably be the Etruscans and other advanced people of Northern Italy, and they would do so much in the same way as the nations of Europe have supplied the savages of America with tools and weapons of iron—that is, in exchange for furs, bees-wax, and other crude native productions.

But from whence came the bronze weapons found in the Scandinavian shell-heaps and peat-bogs? The theory of recent Danish ethnologists and archæologists is that the aboriginal inhabitants of Scandinavia were a small and inferior race of man, dispossessed or exterminated by its present Teutonic inhabitants. The evidence for this consists in a supposed difference in the size and form of the skull of the supposed pristine and present people, and in the shape of the bronze swords discovered, the hilts of which, as is known to be the case with the swords of all Asiatic people, having hilts too small for the large muscular hands of Europeans. The theory considers these bronze swords to have been the weapons of the inferior or dispossessed race. Now the hypothesis appears to me to be open to very valid objections. For instance, history affords no evidence of a race of invaders exterminating the pristine inhabitants of a country. When, indeed, the invaders belong to a superior race, and are of superior civilisation, the savage inhabitants will gradually disappear before them; but this is the work of long time, and in some degree of amalgamation. In the case supposed there is no evidence of superior civilisation on the part of the Teutonic invaders; and indeed the contrary might be inferred, when the bronze swords are ascribed to the conquered

party, no other weapons than those of hard stone being left to the conquerors. Then, as the pristine people supposed by the theory to have been destroyed would not be so at once by a general massacre, but very slowly, the remains of the two imagined races must have mixed in nearly the same stratum of peat or drift, and then would come the ever-recurring difficulty, or more justly the impossibility, of distinguishing the skulls of races which, however widely different in psychical character when the living form is considered, yet very closely approximate each other in some important parts, as in the example of the skulls of Hindus, Arabs, and Europeans, which no man can pretend to distinguish.

As, then, it is most improbable that the rude inhabitants of Scandinavia should have possessed the difficult arts of reducing the ores of copper and of tin, which their country did not produce, of making bronze from them, and of moulding and casting the bronzes, I must come to the conclusion that their bronze swords were of foreign fabrication, introduced in the course of trade. From the small size of the hilts, it may be inferred that they were the work of some Asiatic people, and probably of the same who introduced into Scandinavia the Runic characters. This, no doubt, is but mere conjecture, but on a question so buried in barbarism and antiquity nothing better can be offered.

In the most recent strata of the alluvium of the Swiss pile-buildings, tools and implements of iron have been detected, and these are pronounced as evidence of an advanced step in civilisation, bringing us, in fact, down to the Roman epoch. With such relics, however, I am satisfied that Romans had nothing to do; that is, that they long preceded the Roman conquest of Gaul, or, in other words, that they were not of Roman, but of Gallic origin, showing that the Gauls had invented iron before they knew the Romans. This is, in my view, satisfactorily proved by the fact that the Gauls, the Cimbri, and the Teutoni all fought with iron weapons, without any mention of bronze being used for this purpose. That the Gauls who, six hundred years B.C., defeated Roman armies and captured Rome, were a people before unknown to the Romans, is certain from the description given of them by the Roman historians. Thus Livy describes them as "a strange and unknown enemy from the ocean and the utmost borders of the earth." This was said of the Celts; but even when, five hundred years later, Italy was again invaded by barbarians, the invaders, the Cimbri and Teutones, are described as a still more remote people. "As for these people," says Plutarch, "who hovered like a cloud over Gaul and Italy, it was not known who they were or from whence they came, on account of the little intercourse they had with the rest of the world, and the length of the way they had marched. It was conjectured, however, from their great stature and the blueness of their eyes, as well as because the

Germans call robbers Cimbri, that they were some of those German nations who dwell by the Northern Sea."

The same writer describes the arms and armour of the Cimbrian cavalry as follows:—"Their breastplates were of polished iron, and their shields were white and glittering. Each man had two-edged darts to fight with at a distance, and when they came to fight hand-to-hand, they used broad and heavy swords." The material of the swords of the barbarians is not here stated, but that is settled by a passage in Polybius, which is as follows:—"The Roman soldiers had remarked in all their former combats that the Gauls were always fierce, impetuous, and very formidable in their first attack, but their swords were such as would make but a single stroke, by the force of which they were so bent and twisted that, unless the soldiers could have leisure to rest them upon the ground, and with the assistance of their feet recover them to their former shape, the sword-stroke was wholly without effect."

The swords, then, of the barbarians who invaded Italy, a hundred and even six hundred years before the birth of Christ, we may conclude were of iron, and as this was soft iron, we infer that steel was unknown to them, which would not be the case had their knowledge been derived from the civilised people of Italy, whether Etruscan or Latin. The inference is that malleable iron was a native discovery of the Gauls, or Germans, or both, and there is no good ground for not believing that a people who had domesticated the larger useful animals, cultivated corn, organised great armies and invaded remote regions, should not have fallen upon the simple process by which ores of iron are reduced to the state of malleable metal. If this was so, the iron found in the diluvium of the Swiss pile-villages was the produce of some Gallic or German nation more advanced than the rude builders themselves, while the bronze relics would, as already stated, be of foreign importation. The frequency of bronze and the infrequency of iron relics, and the latter being found only in the last or most recent stratum of the alluvium is, I think, reasonably accounted for by the far more perishable nature of iron.

I may here remark that the iron of Spain is described by the ancients as of very superior quality to that of Gaul. The Iberian swords were well tempered, showing that the ancient Spaniards, unlike the Gauls, had discovered the art of making steel. The reputation of Spanish iron continued, indeed, down to at least the middle of the last century, for at this last period it was imported into England, ranking in our price currents not only above English, but even above Swedish iron. The discovery of Iberian steel was probably an accident, but the general superiority of the iron was most probably owing to the better quality of the ore.

## II.—*Civilisation and Cerebral Development: some Observations on the Influence of Civilisation upon the Development of the Brain in the Different Races of Man.* By ROBERT DUNN, F.R.C.S.

[*Read June 7th*, 1864.]

IN my last communication to this Society, *On the Psychological Differences which exist among the Typical Races of Man*, I dwelt on the importance of assiduously studying, and of carefully contrasting and comparing, their cerebral organisations, as a means to the better understanding and elucidation of the mental differences which exist among and characterise them. I had then, and I have still, to lament and regret that, notwithstanding the labours of Gratiolet, and the chart which he may be said to have provided for our guidance as a standard for comparison, so little has been done in the prosecution of such an interesting subject of inquiry. It must be confessed, that the brains of the typical human races have yet to be scrupulously examined, and to be carefully contrasted and compared with each other; and that ethnic psychology is still a *desideratum.* In the present paper, I wish to submit to your consideration some observations on the influence of civilisation,—that is, of outward circumstances, social states, and intellectual culture, on the development of man's cerebral organisation. But, in the first place, before proceeding to do this, and as a basis for my observations, I would premise the following postulates:—1st. That the brain or the encephalon is the *material* organ of the mind; in other words, that the vesicular matter of the encephalic ganglia is the *material substratum,* through which all psychical phenomena of whatever kind, and among all the races of mankind, are manifested in this life.

2nd. That there exists a close correspondence in form and size between the cerebrum or hemispheres of the brain and its outward covering—*the skull;* in other words, that the development of the brain moulds and fashions, giving configuration, form or shape, and volume to its bony envelope, so that the varying forms of the human cranium indicate, as outward and visible signs, with certain well understood qualifications, corresponding differences or changes in shape and size of the cerebral substance within.

3rd. That the *genus homo* is one, and that all the races of the great family of man are endowed with the same intuitions, sensational, perceptive, and intellectual,—the same mental activities; in other words, that they all have, as constituent elements, the germs or original principles, *in common,* of a moral, religious, and

intellectual nature; the mental differences, which they exhibit, being differences *in degree and not of kind.*

Now the antiquity of man, since the publication of Sir Charles Lyell's work, on the bearing of the geological evidence upon it, has been the occasion of much discussion. But, beyond the three marked epochs of his history, the ages of stone, of bronze, and of iron, the subject is foreign to our present inquiry, and even upon those, although affording indisputable evidence of his gradual and ascensive progression, it is not my intention to dwell; for I shall confine myself to the historic period of his existence here upon earth. And, as to the origin, or rather the creation of man, whatever may be the opinion entertained in regard to his *monogenesis* or his *polygenesis,* one thing is certain, that from all historic times, there have existed, and do still exist, aboriginal and typical races of man widely differing from each other, and easily distinguishable by well-marked physical and psychical characters. Such, for instance, are the black Negroes of Africa, the yellow Mongols of Asia, the red men of America, and the white men of Europe. The inquiry, indeed, is a most interesting one, into the true zoological relationship between these different races so dissimilar in colour, features, bodily configuration, stature, habits of life, and moral and intellectual cultivation; so that on a survey of all the nations on the habitable globe, our minds are startled, and, well may we ask, "Are the fair Circassian and the jet black African, the olive Malay, and the red American, the dusky New Zealander, and the florid Saxon, all of *one* original stock? Did the Patagonians, whose average height is nearly six feet, spring from the same parents as the pigmy Bosjesmans, whose usual height is under five, that of the females rarely much exceeding four? Are the fat, blubber-fed, flat-visaged Esquimaux even most distantly related to the lean, date-eating, hatchet-face Arab? Does the Bosjesman, who lives in holes and caves, and devours ants' eggs, locusts, and snakes, belong to the same species as the men who luxuriated in the hanging gardens of Babylon, or walked in the olive grove of Academe, or sat enthroned in the imperial homes of the Cæsars, or reposed in the marble palaces of the Adriatic, or held sumptuous festivals in the gay *salons* of Verseilles? Can the grovelling Wawa, prostrate before his fetish, claim a community of origin with those whose religious sentiments inspired them to pile the prodigious temples of Thebes and Memphis, to carve the friezes of the Parthenon, or to raise the heaven-pointing arches of Cologne? That ignorant Ibo, muttering his all-but inarticulate prayer, is he of the same ultimate ancestry as those who sang deathless strains in honour of Olympian Jove, or of Pallas Athenè, or of those who, in purer worship, are chanting their glorious hymns or solemn litanies in the churches of Christen-

dom? That Alfouro woman, with her flattened face, transverse nostrils, thick lips, wide mouth, projecting teeth, eyes half-closed, by loose swollen upper eyelids, ears circular, pendulous, and flapping; the hue of her skin, of a smoky-black, and, by way of ornament, the septum of her nose pierced with a round stick some inches long,—is she of the same original parentage as those whose transcendent and perilous beauty brought unnumbered woes on the people of ancient story, convulsed kingdoms, entranced poets, and made scholars and sages forget their wisdom? Do they all spring from one common mother Were Helen of Greece, and Cleopatra of Egypt, and Joanna of Arragon, and Rosamond of England, and Mary of Scotland, and the Eloisas, and Lauras, and Ianthes, were all those, and our poor Alfouro, daughters of her, who was the fairest of all earth's daughters—Eve? The Quaicqua or Saboo, whose language is described as consisting of certain snapping, hissing, grunting sounds, all more or less nasal,—is he, too, of the same descent as those whose voices fulmined over Greece, or shook the Forum of Rome, or as that saint and father of the Church surnamed the 'Golden-mouthed', or as those whose accents have thrilled all hearts with indignation, or melted them with pity and ruth in the honoured halls of Westminster."*

But I shall not now enter upon the discussion, much less attempt the solution of this *questio vexata,* for I set out with the postulate that the *genus homo* is one, and that, of the great family of man, all the races are endowed with the same instinctive intuitions—the same mental activities, however differing in degree, —and that they all have the essential constituent elements, in common, of a moral, religious, and intellectual nature. But whether they are all descendants from one single pair of protoplasts, or whether they have descended from several distinct pairs, the fact of the unity of mankind, in the sense which I have just indicated, it is equally indisputable. And this unity, I believe with Professor Agassiz, to be a bond which every man feels more and more the further he advances in moral and intellectual culture, and which in this development is continually placed upon higher and higher grounds; so much so, that the physical relation arising from a common descent is finally entirely lost sight of, in the consciousness of the higher moral obligations, which are paramount and universal.

Nor, indeed, ought it ever to be forgotten that the moral rights of man have their foundation in his moral nature, so that if it once be admitted that the degraded and too often despised African

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* Vide Introductory Lecture, entitled "Our Institution and its Studies". By Dr. J. A. Symonds. Bristol: 1850.

Negros have the hearts and the consciences of man—a moral and religious nature like our own—and who can gainsay it?—it may then be emphatically asked, whence comes the right of others to deprive them of their humanity, to convert them into goods and chattels, and to treat them as wild fowl and cattle? for, most assuredly, the tests are and ought to be the same, by which we estimate the true relations of the Negro, the Bushman, and the Australian savage, to the cultivated European, as are those by which we every day recognise the claims of the outcast and the degraded amongst ourselves to a common humanity. And, however much our boasted intellectual superiority, on the one hand, and the physical and mental inferiority of the Negro, on the other, may be dwelt upon by some, there are others who share in the nobler aspirations of the great and philanthropic Dr. Channing for the future of the race; and not a few who believe, as Dr. Carpenter has remarked, that there are elements in the Negro character which have been deemed capable of working a considerable improvement on even Anglo-Saxon civilisation; nay, that many intelligent thinkers have come to the conclusion that the boasted superiority of the latter is, after all, more *intellectual* than *moral*, and that in purity and disinterestedness of the affections, and child-like simplicity and gentleness of demeanour, we have much to learn from the despised Negroes. I, for one, have faith in their social and moral endowments, and look forward hopefully to the *future* of the race, when emancipated from the fetters of slavery, and brought under the ameliorating and benign influence of a higher civilisation, more favourable to the development of their intellectual nature. At the same time, I maintain that it can only be after the effects of education, intellectual, moral, and religious, have been fairly tested, when the influence of a perfect equality in civilisation and social position has been ineffectively brought to bear upon the Negro race for several consecutive generations, that we shall be entitled to say that they are separated from us by an *impassable barrier*. Hitherto, among the civilised nations of the world, what chance have they had? Despised as a race in the Northern, and degraded and subjugated into slavery in the Southern States of America, how abject has been, and, at this very time, how deplorable and wretched is their social position.

But to proceed from this digression. It is admitted on all hands that from time immemorial there have always existed, besides that of the rude and savage hordes of hunters and fishers, two forms or phases of civilisation, the *nomadic* or *pastoral*, and the *agricultural;* and that, whilst, on the one hand, the former is essentially *stationary* in its character, the latter, on the other, is strikingly and eminently *progressive* "The earliest traditionary

records which we possess of the state of the world when the earth was first peopled, shows that there existed a nomadic population, who lived in tents, and artificers who built cities—the earliest of all manufacturing towns. These two schemes of life, so far as we know, were contemporary. The dwellers in tents had seen the dwellers in cities, but preferred their own wild independence. In the nomadic or pastoral mode of life, as the simple wants of the herdsman were so easily supplied, there was little inducement to the study of sciences, which promised no special benefit to himself. Necessarily a wanderer, according to needs of his herds, and, moreover, dependant upon them for his own subsistence, so long as there was unoccupied land enough to afford them herbage, there was nothing to induce a change in his mode of life. And, accordingly, although no law forbids alteration, the habits of the nomadic tribes of Asia, at the present day, differ little, if at all, from those of their ancestors; and the Turkoman, or Arab chief, still welcomes the stranger much in the same way that Abraham of old is reported to have done. But with the agriculturist, the case was widely different, and with him there were many inducements to progress. The implements required for the cultivation of the soil were more useful in proportion as they were more skilfully made, and iron, the best of all the metals for the purpose, needed science to extract it from the ore. A settled population required houses in which to store their implements and their corn; and for the building of these fresh tools and more science were requisite. The agriculturist, engaged all day in the labours of the field, had little time for fashioning his own tools, so that very soon a certain portion of the people devoted themselves to the business of supplying his wants. And thus luxuries which a wandering tribe could neither carry with them nor enjoy, were within the reach of a settled population. Trades could be carried on. The son learned the arts which the father had acquired, it was the natural order of things. He who had become rich with the produce of his tillage could exchange it with the tradesman for his wares, and so became possessed of two kinds of wealth, which descended together to his children. They who were so enriched by the thrift of their fathers could devote their time to intellectual culture, and thus science arose."*

Now, as might be expected among the purely nomadic races, where civilisation is stationary, at a dead lock, so to speak, there exists a uniform sameness and a characteristic fixidity in the shape of the head, which is in striking contrast with what is seen to prevail among the agricultural races and the cultivated Euro-

* Vide Small Books on Great Subjects; the State of Man before the promulgation of Christianity. London, Pickering, pp. 29-30, 1848.

peans. For where civilisation is progressive, under the exciting and stimulating influence of outward circumstances, social status, and intellectual culture, there is increased activity among the faculties of the perceptive and intellectual consciousness, and, in consequence, a corresponding development of the nervous apparatus—the cerebral substance, through which they are manifested in this life.

And thus the contrast is both significant and striking, when the representative typical crania of the African or Australian savage, the Mongolian nomade, and the cultivated European, are compared with each other. And although it is the brain which is the organ of the mind, we must not forget that its *bony covering,* the *skull,* is the outward measure and index of the brain's development within, and that from it we are enabled fairly to estimate the relative size and comparative development of the three great divisions of the brain itself, the anterior, middle, and posterior lobes; and thus, among the typical races, to recognise *distinctive characters* impressed and stamped upon their varying crania as indisputable evidence of *degradation* or *elevation* of type. Thus, for instance, among savage tribes, where the head is relatively so small to the greatly developed bones of the face and protuberant jaws, the forehead is flat or low, narrow and retreating. It may be that the head is comparatively long, but then it is remarkably narrow in proportion to its length, as seen in the Negro, the Carib, or New Hollander; or, on the other hand, it may be short, but still the forehead is flattened and narrow, as in the Incas and Papoes. Now, cranial configurations such as these, and where the face, nose and jaws, ape-like, are all protuberant and projecting, speak a language which cannot be mistaken, and point to a history and a destiny, on which there is no occasion for me to dwell. For whenever and wherever ignorance and brutality, destitution and squalor, have for a long time existed, this prognathous type invariably prevails. It is not confined to the Negro of the Delta of Africa, but is equally characteristic of the Bushman and Australian savage, and may even be recognised in Ireland, in Leitrim, Sligo, and Mayo. So again, as opposed to this, there is a type of *elevation* among the European nations—the Saxons, Celts, and Scandinavians—where the jaws are upright and not projecting, and where the face scarcely, if at all, protrudes beyond the forehead, and where, too, in place of the narrow, low, and retreating forehead associated with largely developed, massive, and projecting bones of the face and jaws, we are struck with the symmetrical contour of the head, its size and lateral fulness, but above all with the elevation of the forehead, in proportion to the size of the face, and with its broad expansion and towering height, clearly indicating a harmonious development

of the whole brain, and a special fulness in the intellectual and moral regions.

But as physiological psychologists are agreed that the Cerebrum, or great hemispherical ganglia of the brain, are the instruments of the mind, the sole and exclusive seat of all intellectual action and volitional power, we must turn from the comparison of their bony coverings to that of the brains themselves, of the typical races. Now, when we do this, how strikingly are we at first impressed with the exact resemblance which they bear to one another. We see the same lobes, the same convolutions, and the three main divisions of the brain, into anterior, middle, and posterior lobes, are as distinctly and well defined in the one as in the other. But on a closer examination, and a more scrutinising survey, we find marked and palpable differences between them, not only in the relative size and development of these three cerebral lobes, but also differences in the size, character, and complexity of structure in many of their corresponding convolutions, the significancy of which is more or less important, according to the psychical activities of which they are the seat, or with which they may be associated. But to be able to interpret these, and duly to appreciate the importance of the structural differences which we meet with in the brains of the typical races of man, involves and implies a knowledge of the functions of these cerebral parts, and of the nervous apparatus of the perceptive and intellectual consciousness, more precise and accurate than that, it must be candidly confessed, to which we have as yet attained. Still, we are not without some definite knowledge of the functions of the cerebral lobes as physical instruments, and, on this point, let me here state what are the views and convictions of my own mind—not hastily taken up; and although accordant with, not founded upon, the multiplied cranioscopical observations of Gall, Spurzheim, Combe, and Carus, but upon the facts of pathology and of developmental anatomy, comparative and human, viz., that the anterior lobes are the seat of the intellectual, the middle of the personal or individual, and the posterior of the social and affectional activities or attributes of the human mind. In other words, my own mind rests in the conviction that the anterior are the intellectual lobes of the brain, the seat of the intellectual faculties, the reasoning and reflecting powers; the middle lobes are the personal, the seat of the animal activities, of the individual or personal affections or attributes, and of the moral and religious intuitions of the mind; and that in the posterior lobes are seated the social and affectional activities and propensities, those endearing attributes which are the charm of our existence here, binding together in the bonds of affection, the ties of family, of friendship, of country, and of race. Moreover, I recognise

throughout the hemispheres of the brain, and in their tripartite division into anterior, middle, and posterior lobes, with Gratiolet, three stages or planes of development:—1, the inferior, or lowest, the *basilar* and *superciliary;* 2, the middle, or *median frontal;* and 3, the highest, the *coronal,* or *superior frontal,* the sole and exclusive prerogative of man. Nor do I hesitate to avow my belief that it is on the comparative evolution and size of the different cerebral lobes in these stages or planes of development that the individual character is mainly dependent, and that, while the middle or personal are the dominating lobes of the brain, as to the animal, moral, and religious activities of the man, it is the anterior which indicate the character of his intellectual bearing, and the posterior that of his social tendencies, propensities, and affections.*

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* Since this paper was read, *The Lectures on Man; his Place in Creation, and in the History of the Earth,* by Dr. Carl Vogt, Professor of Natural History in the University of Geneva, edited by James Hunt, Ph.D, have been published. As confirmatory of my own views and opinions, I need scarcely say how well pleased I am to quote the following passages from Lecture IV:—"The cerebrum is unquestionably the seat of intelligence, consciousness, and will, consequently of all intellectual activity. There are normal conditions in which certain parts of the brain are less developed than others; and such conditions may be noted in the analysis of the intellectual functions. We may thus find in individuals of high intellect, this or that lobe of the cerebrum is more developed than another; that the convolutions on the surface are more distinctly and differently marked in eminent persons, than in persons of lower rank. Such investigations embrace the different races of man. We may call to our aid cases in which, from arrest of development, the brain has preserved its fœtal type, in consequence of which the intellectual life approaches that of the animal. And a close examination of the cerebral structure of such idiots may teach us which are the special parts arrested in their development; and, by comparing with the obtained data the various manifestations of intellectual activity, we may perhaps arrive at some conclusions as regards the functions of the individual parts of the brain."

"The three cranial vertebræ, viz., the frontal, temporal, and occipital, have been connected with the development of the three principal lobes, so that some authors distinguish frontal, parietal, and occipital races, in proportion as either of these organs predominate. The actual facts obtained from investigations of this kind seem to amount to this, that the anterior or frontal lobes are intimately connected with mental development. *Height, breadth,* and *shape* of the parts, must be taken into special consideration in forming an estimate of intellectual capacity." On the three ascensive planes of cerebral development, upon the existence of which I have dwelt in my *Essay on Physiological Psychology* (p. 86), Dr. Vogt observes:—"We might fairly assume three stories of these complicated frontal convolutions; the ground-floor rests immediately upon the roof of the orbits, whilst the upper story touches the top of the forehead. In poorly convoluted brains, these windings, viewed from the side, present three distinct superimposed folds; in richly convoluted brains they appear as closely intertwined plants, rendering the separation into three stories more difficult. The remarkable differ-

Further and more fully to discuss these ascensive planes of cerebral development would here be out of place; but, I hope, enough has been said to enable us to appreciate, in some degree, the psychological significancy and importance of the structural differences which we meet with among the convolutions of the brains of civilised and savage man. As the anterior lobes are the seat of the intellectual activities, fulness of development and complexity of structure are sure indications of *elevation* of type; and the converse is equally true, as Gratiolet, from extended observations, has fully established, viz., that simplicity of structure and perfect symmetry of shape and arrangement, among the convolutions on both sides of the hemispheres are indisputable marks of *degradation* of function. He has demonstrated that on the three stages of frontal development, there exists among the lowest and the highest of the human races differences in size and complexity of structure in the convolutions and in the relations of the second or median, with both the inferior and superior stages of

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ences exhibited by brains are especially shewn in the convolutions, and, above all, in those of the upper and middle folds. The length of the frontal lobe varies greatly, so that the fissure of Rolando changes its place either in a forward or backward direction. The complications in the shape and arrangement of the convolutions differ, not only in individuals, but even in the two hemispheres of the same brain. Assuming the absolute length of all the sulci of the frontal lobe of the brain of the mathematician Gauss equal to 100, we obtain for the brain of Fuchs, M.D., 96; for a woman of 29, about whose intelligence nothing is said, 85; for the brain of a common day-labourer named Krebs, 73; and for the brain of an idiot who died, aged 26, only 15, a diminution which accords with the hypothesis, that great development of the frontal convolutions, and consequently of the convolutions generally, is connected with the development of intelligence." After observing that the convolutions which form the parietal lobe appear to proceed from the posterior central convolutions, he says:—"They have the appearance of notched rolls, which may also be divided into three stories, the uppermost forming as it were only a fold of the central convolution. The second or middle convolution of the parietal lobe, which is mostly only seen on a side view of the brain, usually forms a curve, like a bent finger, around the parallel fissure; and hence Gratiolet calls it the bent convolution—*plicourbé*. The third or lower, generally appears in the shape of a triangular knob wedged in between the branches of the horizontal arm of the Sylvian fissure, and corresponds in its position to the parietal eminence of the skull." He next points to the three stories in the temporal lobe, observing that, "in poorly convoluted brains, these stories are scarcely at all notched in the margin; but in richly convoluted brains, the notches become secondary fissures, but rarely sufficiently deep to efface the original tripartition of the lobe." The occipital he considers in every respect the most difficult, in regard to the systemisation of its convolutions. In the human brain, its limits are only indicated by a very small perpendicular fissure, and it runs without any visible separation into the parietal and temporal lobes. He points out what Gratiolet terms the upper story of the convolutions of the posterior lobe, then the middle, and also distinguishes beneath these a third, which rests immediately upon the cerebellum.

development, which accord with, and, indeed, are found to indicate and correlate corresponding differences in their psychical activities. He dwells on the striking contrast which is presented between the simple, smooth, and symmetrical convolutions, in both the hemispheres, on the superior frontal regions of the brain, in the inferior races, and that of the unsymmetrical character, and of the great and intricate complexity of the same convolutions among those of the highest.

The illustrious Tiedemann is constrained to admit that in the brain of the Negro the anterior lobes are more pointed and narrow than in the European, and that the gyri and sulci in both hemispheres are far more symmetrical also, so that, in this respect, they resemble the brain of the ourang-outang. The brain is narrow, and its great deficiency is in its anterior lobes; the moral and religious regions are more fully developed, and so, too, are the posterior lobes, though not so fully as in the European. Tiedemann, indeed, dwells on the fact, that in the case of the Hottentot Venus who died at Paris, the narrowing of the anterior part of the hemispheres was still more remarkable than in the Negro.* "Fortunately," says Professor Huxley, "Gratiolet has

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* Dr. Carl Vogt, in his seventh lecture "On the Comparison of the German and Negro," quotes the following remarks from Dr. Pruner-Bey, who, as Physician to the Viceroy of Egypt, had ample opportunities for observation on the brain of the Negro:—

"The narrow and elongated brain of the Negro always presents on the surface a brown coloration, reflecting from a considerable injection of venous blood. The superficial veins are very thick; the grey substance presents internally a clear brown coloration; the white substance is yellowish; the cortical grey substance which covers the hemispheres is less thick than in the white man. Viewed in front, the brain presents a rounded apex; viewed from above, the parts seem coarser and less manifold than in the White. The anterior and parietal convolutions seem less deep, flattened, excepting the third convolution, which rather protrudes on the frontal surface. On tracing the convolutions backwards, we find fewer of those parietal folds which render the brain in the White a perfect labyrinth. The convolutions on the middle lobe seem raised, but supine and coarse; the posterior lobe always appeared to me as flattened on the top as the anterior is at the base. The central mass is undoubtedly firmer and more consistent in the Negro than in the White. In the brain of the Negro the central gyri are like those of a fœtus of seven months, the second are still less marked. By its rounded apex and less developed posterior lobe, the Negro brain resembles that of our children, and by the protuberance of the parietal lobes, that of our females. The shape of the brain, the volume of the vermis and of the pineal gland, assign to the Negro brain a place by the side of that of the white child."

Dr. Carl Vogt further remarks—"That Huschke mentions some other differences. The Sylvian and Rolando fissures are more perpendicular than in the brain of the European; the anterior lobes are shorter, the gyri coarser, the chief anterior convolution broad, but all without islands. Huschke arrives at the conclusion, that in the Negro brain both the cerebrum and

also particularly described and carefully figured the brain of the Hottentot Venus, and his remarks respecting it are exceedingly important and instructive." "The convolutions of the brain," says Gratiolet, "are relatively little complicated. But what strikes one at once is the simplicity, the regular arrangement, of the two convolutions which compose the superior stage of the frontal lobes. These folds, if those of the two hemispheres be compared, present an almost perfect symmetry, such as is *never exhibited* by the normal brains of the Caucasian race. This regularity, this symmetry of the cerebral convolutions, involuntarily recalls the regularity and symmetry of the cerebral convolutions of the lower species of animals. There is in this respect, between the brain of white men and this Bosjesman woman, a difference such that it cannot be mistaken." After pointing out other differences, he concludes in these words:—"The brain of the Hottentot Venus is thus in all respects inferior to that of white men arrived at the normal period of their development. It can only be compared with the brain of a white who is idiotic from an arrest of cerebral development."

This instructive account, by Gratiolet, is peculiarly interesting to me, from the fact that in the days of my boyhood, I gazed with wondering eyes upon the same Hottentot Venus when she was publicly exhibited at Newcastle-upon-Tyne. Nor can I now, after the lapse of so many years, and on such an occasion as the present, be content simply with an expression of the regret which I feel, in saying, that I know of no other recorded case from the Hottentot race; nor even of a solitary one, either from among the Bushmen, a degraded caste of the Hottentot, or from the Australian race, with which to contrast and compare this admirable account from Gratiolet, for I cannot here refrain from reiterating what I said in my last communication:—

"To our shame be it spoken, that, in regard to the cerebral organisation of the typical races, so little has been done in the investigation of a subject so fraught with interest and pregnant with consequences of such deep importance to every psychological inquirer."

I hope, however, for the sake of science and our own credit, that this reproach will soon no longer exist, except among the things which have been, and that typical illustrations of the brain from the aborigines of different nations, will not be found wanting for examination, comparison, and study. Nay, more, I look for-

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the cerebellum, as well as the spinal cord, present the female and infantile European, as well as the simious type. The resemblance of the Negro brain to that of the European female would still be greater, if they were not distinguished, the former by its length, and the latter by its breadth."—Vogt's Lectures, p. 182-3.

ward to the microscopical examination of the ultimate structure of the vesicular substance or grey matter of the brain in the typical races, as pregnant with the most interesting and instructive results. Already my friends Dr. Beale and Mr. Lockart Clarke have proved to demonstration, that *perceptible differences* exist in the minute anatomy of the grey matter of the convolutions in the brain of man, and that of the monkey and the highest anthropoid apes. Moreover, that among the inferior animals themselves of distinct or different species, as the dog, the cat, and the sheep, the structural differences in the grey matter are so clear and well defined, that if a specimen from any one of these be placed in the field of the microscope, they can at once, and without hesitation, name the animal from whence it has been taken. Mr. Lockart Clarke has shewn that *certain structural differences* are seen in the grey matter of the convolutions of the anterior, middle, and posterior lobes of the brain. And this fact is highly interesting and significant, when we bear in mind that it is upon the vesicular substance or grey matter of the encephalic ganglia, *as its substratum,* that the mind is dependant for the manifestation of all its activities in this life, and moreover, that it is here that the ultimate molecular changes take place, which are so intimately connected with the manifestation of mental phenomena. Again, as complexity of function is necessarily connected with complexity of structure, and as the anterior lobes are the seat of the highest and most complex psychical activities, it is but reasonable to expect what Mr. Lockart Clarke has demonstrated to exist, viz., the greatest complexity in the machinery of their action, that is, in the nerve-cells, nerve-fibres, and circuits in the grey matter of the anterior lobes.

Dr. Beale has succeeded in demonstrating the connection between the nerve-cells and the very finest fibres in the grey substance of the convolutions; and he maintains that the central cells of every nervous instrument form with the peripheral nerve-cells, and connecting nerve-fibres *uninterrupted circuits,* and that all nerve-cells are connected with, or gave origin to, at least two fibres; and, although, in the adult, the cells are not often connected with those cells which are nearest to them, there is no reason for supposing that the nerve cells influence any nerve fibres, save those which are structurally continuous with them.

It now remains for me, in conclusion, to advert to the historical bearings of our inquiry,—to the evidence which is furnished by history of the conversion in time of one type of humanity into that of another, under the influence of outward circumstances, social states, and intellectual culture. But, first of all, let me observe, the universally acknowledged physiological law, that the healthy functional activity of an organ is essential to its highest

development, is equally as true of the brain as it is of any other of our bodily organs, so that in the changing forms of the human skull in each of the typical races we have evidence—*outward and visible signs*—from which we can safely and without hesitation infer the *elevation* or *degradation* of the race. Let us, first, then, briefly glance at the Negro race, about which there has been so much discussion of late, and whose fate and destiny in *America* at the present time, are exciting so much interest throughout the whole civilised world.* As to their past history there,—when we

* "The Negro child," says Pruner-Bey, "is born without prognathism, but with a totality of features, which, though characteristic for the soft parts, are not yet expressed on the skull. The Negro, the Hottentot, the Australian, the New Caledonian, do not, with regard to the osseous system, exhibit the differences which arise subsequently. The young Negro possesses a pleasant physiognomy up to puberty, which commences in girls between the tenth and thirteenth, and in boys between the thirteenth and fifteenth year. This is followed by a rapid transformation in the forms and proportions of the bony skeleton. The transformation proceeds in the cranium and the face; the jaws predominate without an adequate compensation in the cranium. Whilst in the white man the gradual increase of the jaws and the facial bones is not only equalled, but exceeded, by the development, or rather enlargement of the brain, and especially of the anterior lobes; the reverse is the case in the Negro. The central frontal suture closes in the Negro in early youth, as well as the parietal part of the coronal sutare. With advancing age the central portion of the coronal suture, the sagittal suture, and all the parietal sutures close, nearly simultaneously. The lambdoidal remains open the longest, especially at the apex. Generally speaking the suture in the Negress closes sooner than in the Negro." "It is undeniable," says Dr. Carl Vogt, "that the sudden metamorphosis, which at the time of puberty takes place in the Negro, is intimately connected with psychical development. The Negro child is not, as regards the intellectual capacities, behind the white child. All observers agree that they are as droll in their games, as docile, and as intelligent as white children, where their education is attended to, and where they are not, as in the American Slave States, intentionally brought up like cattle, it is found that the Negro children in the schools, not only equal but even surpass the white children in docility and apprehension. But no sooner do they reach the fatal period of puberty than, with the closure of the sutures and the projection of the jaws, the same process takes place as in the ape. The intellectual functions remain stationary, and the individual, as well as the race is incapable of further progress." He goes on to say,—"The grown-up Negro partakes, as regards his intellectual faculties, of the nature of the female child, and the senile white. He manifests a propensity for pleasure, music, dancing, physical enjoyments, and conversation, while his inconstancy of impressions and of all the feelings are those of a child. Like the child the Negro has no soaring imagination, but he peoples surrounding nature, and endows even lifeless things with human or supernatural powers. He makes himself a Fetish of a piece of wood, and believes that the ape remains dumb lest he should be compelled to work. The general rule of the slaveholder is, that slaves must be treated like neglected and badly brought-up children. The Negro resembles the female in his love for children, his family, and his cabin. He resembles the old man in his indolence, apathy, and his obstinacies. Temperate in common things, the negro

call to mind how the Negroes have been kept in ignorance and subjugated to the bondage of slavery in the Southern States, and how in the Northern they have been despised and treated as a degenerate race, it must be admitted that their social position in America has been anything but favourable to the furtherance of the development of their moral and intellectual endowments. "Still," says Dr. Carpenter, "according to the concurrent testimony of disinterested observers, not only in the United States of America, but also in the West Indies, an approximation in the Negro physiognomy to the European model is progressively taking

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becomes intemperate, if not kept within certain bounds. He knows not steady work, cares little for the future; but his great imitative instinct enables him to become a skilful workman and an artistic imitator. In his native country the Negro is shepherd or agriculturist; some tribes understand working metals; others carry on trade, not without cunning. Some tribes have founded states, possessing a peculiar organisation; but, as to the rest, we may safely assert that the whole race has, neither in the past nor in the present, performed anything tending to the progress of humanity, or worthy of preservation." Mr. Lille Geoffroy, of Martinique, so generally cited in proof of the artistic and scientific capacity of the Negro, being an engineer, a mathematician, and a corresponding member of the French Academy, he asserts, was not a pure Negro, but a Mulatto. Vogt's *Lectures*, pp. 191-2.

I cannot quote these opinions and observations of Drs. Pruner-Bey and Carl Vogt without, at the same time, recording my own dissent from their *dogma of finality* in respect to the intellectual status of the Negro. Progression is the order of nature, and I believe in the progressive improveability of the Negro race. I am aware Gratiolet has pointed out the fact, that the closing of the sutures in the cranium of the Negro, follows a different law to that which obtains in the skull of the white man, viz., that the frontal and coronal close earlier than the posterior sutures, —the reverse of what takes place in the white; but this is just, as, I think, what *à priori* reasoning, in the case of the Negro, would lead us to expect. In the present paper, I set out with the postulate, that it is the development of the cerebrum which moulds and fashions, giving configuration, shape and volume to its bony envelope, the skull. Now when we contrast, at the age of puberty, the incessant activity of the animal propensities, and of the personal and social affections, exhibited as the mental attributes of the Negro race, with the total absence of all educational discipline and intellectual culture, properly so called, can we wonder, under such circumstances, that the sutures should close earlier over the stagnant centres of intellectual action, than in the region of the middle and posterior lobes, where the personal, affectional, and social activities are in such constant excitement? When the Negro is freed from the fetters of slavery and brought fully under the ameliorating influences of a higher civilisation, better adapted for the development of his intellectual nature, his reasoning and reflecting powers—then, but not till then, and even this may not be until after the lapse of many successive generations, the closure of the sutures in the skull of the Negro will be found to present no exception, *nisi fallor*, to the law which obtains in the case of the white man. It would be interesting to investigate this point in relation to certain of the inhabitants of Leitrim, Sligo and Mayo in Ireland.

place in instances in which, although there has been *no* intermixture of European blood, the influence of a higher civilisation has been powerfully exercised for a lengthened period of time. This is particularly the case with Negroes employed as domestic servants. Dr. Hancock, a most intelligent physician of Guiana, even asserts that it is frequently not at all difficult to distinguish a Negro of pure blood belonging to the Dutch portion of the colony from another belonging to the English settlements, by the correspondence between the features and expression of each, and those which are characteristic of their respective masters. This alteration, too, is not confined solely to the *change* in the form of the skull, or to a diminution in the projection of the jaws, striking as these changes are, but is also seen in the general figure and in the form of the soft parts, as the lips and nose. The change is most apparent in such as are brought into closest and most habitual relations with the Whites, as by domestic servitude, but without any actual intermixture of races, which would, indeed, at once be betrayed by the change of complexion and by the more strongly marked indications of *hybridism.* Sir Charles Lyell, from personal observations, bears his testimony to the same conclusions. He had the assurance from medical men residing in the Slave States during his tour in America, that a gradual approximation is taking place in the configuration of the head and body of the Negroes to the European model, each successive generation exhibiting an improvement in those respects. But, surely, it has been reasonably asked, is it at all likely that we should find after a transplantation of only three hundred years, anything like a complete reversion in the transplanted type in the West Indies or America, when for upwards of three thousand years in Africa the Negroes have been under certain climatic influences and social states, the results of which have been defined and strengthened by hereditary conditions? It has been usual to refer to those marvellous pictures whose preservation in the tombs and temples of Egypt has revealed to us so much of the inner life of one of the most anciently civilised nations of the world, in illustration and proof of the fixity of the type of the head and physiognomy of the Negro race; and, it must be admitted, that the identity is striking between these representations and the existing Ethiopians, both in respect to the black and the red African races. But it must be remembered, that the Negroes in Egypt were then in the bondage of slavery, and it cannot be a matter of surprise, that races who continue to inhabit their native localities and maintain their barbarous and savage habits of life, should present a permanency in their physical characters, and especially in the types of their cranial configurations. But, still, among the Africans, we have abundant proof from outward agencies—climatic

and malarious—of degradation of type. It has been well observed by our friend Mr. Burke, that Negro Africa is a large ethnic centre in which there are a great variety of types. We have become familiar with some of the very lowest of those types, and this has tinged the whole range of our intellectual notions with respect to the Negro. But there are places in Africa where the difference between the Negro and the European is extremely slight, comparatively speaking, and there are other places where it is extremely great. The contrast between them in their cranial configurations is equally striking.

Mr. H. Winwood Reade, in his work *On Savage Africa*, recently published, maintains that the Negro forms an exceptional race in Africa. He observes, indeed, that "They who deny that the Negro type has been produced by natural causes, have alleged that there are two distinct races in Africa, the *red* and the *black*, and that they inhabit the same localities. But," says he, "we must bear in mind, that a series of mountain terraces run along the whole length of Western Africa, and that between them and the sea are low and malarious swamps. The mountains are inhabited by the true Africans—a red-skinned race. New tribes of these descending to the swamps have become *degraded* both in body and mind, and the type has become completely changed." The evidence of degradation in the form of the skull is manifest He adds, "The whole of the western coast and a great portion of the eastern are inhabited by Negroes. The slaves which have been imported into the New World were almost exclusively from these regions, and the slaves even among Negroes themselves always present a lower type than that of the surrounding population. In Equatorial Africa, the bush tribes are the most degraded. On the sea-coast, between the Gaboon and Cape Lopez, they present the typical characteristics of the Negro. But in the higher and healthier localities, classes of the same tribes have a lighter complexion, less prognathous development, and more facial intelligence. The Fans, who inhabit the mountain terraces, are altogether of a different complexion from the sea-coast tribes. In the low swampy land at the mouth of the Congo, typical Negroes abound, and there again, on reaching a higher soil, we find a different class of people, who are scarcely even black.

"Along the swampy coast of Sierra Leon, the debased Negro type prevails; but at Sierra Leon the country rises and the type rises with it. The natives of Free Town are tall and handsome, with intelligent faces. One of the Vie tribe, near Cape Mount, invented a written language, as was discovered by Lieutenant Forbes in 1849. Central Africa is prolific, and perhaps," says Mr. Reade, "an over populated country; for, notwithstanding the loss of life in the swamps, and that her children have blackened half America, the lowlands are

still well populated. A stream of life still pours over the mountain wall, and the sources of this stream must be very abundant."

Of this degraded and too often despised race, I trust we will all join issue with Mr. Reade, when he adds,—"Let us call the Negroes our children. Let us educate them carefully, and, in time, we may elevate them; not to our own level—that, I fear, can never be—but to the level of those from whom they have fallen.

"If we wish to know what they have been, and to what we may restore them, look at the portraits which have been preserved of the ancient Egyptians. And in those delicate and voluptuous forms; in those round, soft features; in those long, almond-shaped, half-closed, languishing eyes; in those full pouting lips, large smiling mouths, and complexions of a warm and copper-coloured tint, we will recognise the true African type,—the women and men of the Old World, of which the Negroes are the base, the depraved caricatures."*

Dr. Prichard has also remarked, "If we trace the intervening countries between Egypt and Senegambia, and carefully note the physical quality of the inhabitants, we shall have no difficulty in recognising almost every degree or stage of deviation successively displayed, and shewing a gradual transition from the characters of the Egyptians to those of the Negro, without any broadly-marked line of abrupt separation."

With the following significant remarks from Dr. Carpenter, I shall dismiss the further consideration of the Negro race:—"It is not a little remarkable," says he, "that the earliest civilisation of which we have any distinct traces, in the western portion of the Old World,—perhaps, the very first development of the arts of life, and of a spiritual philosophy which man has witnessed,—should have presented itself in a race which was not only *African* in its locality, but also in its affinities, such being demonstrably the character of the *ancient Egyptians.* Yet to this race the civilisation of Greece, of Rome, and of Western Europe, may be, in a great measure, ascribed; and long after the time, when its power and intelligence had gained their highest state of development, the progenitors of the Anglo-Saxon race, both in this country and in Germany, were in a state of barbaric ignorance and brutalism."†

Turning next to the history of the Asiatic or Mongolian races, we find evidence, as displayed in their cranial configurations, both of elevation and degradation of type from the influence of out-

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* "Savage Africa". By W. Winwood Reade. Smith and Elder: 1863.

† Dr. Carpenter on the Varieties of Mankind, in Dr. Todd's "Cyclopædia of Anatomy and Physiology".

ward circumstances and social states. The Turks, the Magyars, and the Bosjesmans, present examples of such, and cases in point.

The Turks are an eastern people, and a nomadic race, with characteristic pyramidal heads; to the present time the eastern Turks retain the nomadic habits of their ancestors, and are associated with the northern Asiatic group of nations, not only in geographical position, but in physical characters, cranial conformation, and habits of life. On the contrary, the Turks of Europe and of Western Asia differ so widely from these, and especially in their cranial developments, agreeing in their physical characters so closely with the European model, that they have been referred to a Caucasian and not a Mongolian race; but Dr. Prichard has shewn that both *historical* and *philological* evidence abundantly proves that the western Turks originally belonged to the same Central Asiatic group of nations with which the eastern Turks are still associated. I am aware, that this change from the pyramidal to the elliptical form of the skull, has been attributed to the result of the intermixture of the Turkish race with that of the countries they have conquered, or by the introduction of Georgian and Circassian slaves into their harems. But, I think, with Dr. Prichard, that the cause assigned is inadequate to the effect. For we know that in the Christian countries subjugated by the Turks, the conquering and the conquered races have been kept separate by mutual hatred, fostered by difference in religion and manners; while any improvement effected by the introduction of Georgian and Circassian slaves must have been confined to the higher classes, who could afford to purchase them. But, in either case, admitted to its utmost possible extent, the result would have been a hybrid or intermediate race, instead of the entire substitution of a new type for the original one. And so complete a change can only be attributed to the effects of civilisation and social improvement.

The Magyar race, which forms a large part of the population of Hungary, including the entire nobility of that country, and which is not, in physical or mental characters, inferior to any in Europe, is proved both by historical and philological evidence, to have been a branch of the great Northern Asiatic stock, which was expelled about ten centuries ago from the country which it then inhabited (which bordered on the Uralian Mountains), and, in its turn, *expelled* the Sclavonian nations from the fertile parts of Hungary, which it has occupied ever since. Having thus exchanged their abode from the most rigorous climate of the old continent,—a wilderness in which Ostiacks and Samoides pursue the chase only during the mildest season,—for one in the south of Europe, amid fertile plains abounding in rich harvests, the Magyars gradually laid aside the rude and savage habits which

they are recorded to have brought with them, for a more settled mode of life. In the course of one thousand years, their type of cranial conformation has been changed from the pyramidal to the elliptical, and they have become a handsome people, of fair stature and of regular European features, with just enough of the Tartar cast of countenance, in some instances, to recall their origin to mind. Now, here again, it has been said, that the intermixture of the conquering with the conquered race, has had a great share in bringing about this change; but, let it be remembered, that the Magyars pride themselves greatly on the purity of their descent, and the small infusion of Sclavonic blood which may have taken place from time to time, is by no means sufficient to account for the complete change of cranial type, which now manifests itself among them.

While thus, in the Mongolian race, under the ameliorating influence of civilisation, the Turks and Magyars present us, on the one hand, with instances of elevation of type, as displayed in their cranial contour and its lofty bearing, in the brutalised and savage Bushmen of the Cape; on the other hand, we see deterioration and debasement carried to the uttermost limits of human degradation, as seen in their prognathous development. The Bushmen are a degraded caste of the Mongolian Hottentot race. The process is but too well known of the conversion of Hottentots into Bushmen. The change of a mild, confiding, and an enterprising race of shepherds, into fierce, suspicious, and vindictive savages, who issue from the fastnesses of their rocky deserts only to plunder and destroy, has been witnessed even within the present generation, as the results of the encroachments of European civilisation on the one hand, and of the Kaffirs on the other.

Let us turn, lastly, to the highest of the human races—the so-called Caucasian race, and to the bearings of our inquiry upon ourselves; for it cannot be denied, that there is amongst us, unmistakeable evidence of degradation of type, as the consequence of long-continued want, ignorance, squalor, and moral degradation. We need not go beyond the confines of the United Kingdom for examples of the different cranial conformations, though it must be admitted that the prognathous and nomadic are exceptional forms. Still they do exist. An intelligent writer, in No. 48 of the *Dublin University Magazine,* says, "There are certain districts in Leitrim, Sligo, and Mayo, chiefly inhabited by the descendants of the native Irish driven by the British from Armagh and the south of Down about two centuries ago. These people, whose ancestors were well-grown, able-bodied, and comely, are now reduced to an average stature of five feet two inches, are pot-bellied, bow-legged, and abortively featured; and they are especially remarkable for open projecting mouths and prominent

teeth and exposed gums, their advancing cheek-bones and depressed noses, bearing barbarism in their very front. In other words, within so short a period, they seem to have acquired a prognathous type of skull, like the Australian savages."

It has, indeed, been observed:—"It is marvellous how close is the physical resemblance between these lowest classes of the Irish population and the natives of Australia, as depicted in the voyage of the *Astrolabe.* In the hordes of wretched Irish, whom the famine a few years ago drove to seek subsistence in the sea-ports and manufacturing towns of Great Britain, every gradation was perceptible, from the *really* noble type of countenance and figure seen in some of them, to that utterly debased aspect which can only be looked at with disgust." As to the nomadic vagabond tribes which infest our streets and are found in every civilised community, there may be noticed among them a certain degree of regression to the pyramidal type. By that acute observer, Mr. Henry Mayhew, in his *London Labour and London Poor*, it has been well remarked, "That among them, according as they partake more or less of this pure vagabond nature, doing nothing whatever for their living, but moving from place to place, preying on the earnings of the more industrious portions of the community, so will the attributes of the nomadic races be found more or less marked in them; and they are all more or less distinguished by their *high cheek bones and protruding jaws;* thus shewing that kind of mixture of the *pyramidal* with the *prognathous* type, which is to be seen among the most degraded of the Malayo-Polynesian races." There is, unfortunately, scarcely a civilised nation, on the bosom of which there does not exist a degraded caste,—an outcast population as reckless and prone to the indulgence of their worst passions, as these degraded Malayo-Polynesian races, and who are only restrained from breaking loose by external coercion.

But, still, while thus on the one hand we have among ourselves indubitable evidence of deterioration of type, the melancholy spectacle of the conversion of the *elliptical* into the *prognathic*, as the effect and consequence of long-continued want, squalor, ignorance, and moral degradation, we must not shut our eyes, on the other hand, to the pleasing and equally well attested fact of cranial alterations for the better, under the influence of improved social conditions and higher intellectual activities. The limits of this paper will not permit me to enlarge upon these. Nor is it necessary. For, if the anterior lobes of the brain be the seat of the intellectual faculties, and if the healthy and increased exercise of the functional activity of our bodily organs further and increase their development and size, then the improvement may be as conspicuous in the lofty bearing and general contour of the head as

it is in the enlargement of the deltoid muscles in the arm of the hard-working blacksmith. Nor, in proof of this, are there wanting casts taken from the same heads at different periods of life.

In the museum of the late Mr. De Ville, in the Strand, there were upwards of fifty of such illustrative examples, highly interesting and instructive, as pointing out and recording, beyond all controversy, certain changes in the form and relative proportions of the anterior lobes of the brain, in connection with certain intellectual pursuits.

But, to conclude,—Dr. Paul Broca's cranial investigations of races at Paris, not only establish the fact, that individuals engaged in art and science possess a higher cranial capacity than mere labourers, but also warrant the inference from a comparison of the skulls of the twelfth with those of the nineteenth century, that the capacity of the cranium of the Parisian population has increased,—a fact, which, though it may not in itself, as he observes, be sufficient to establish a rule, yet affording an index, and when supported by other facts, justifying the inference, that by progressive civilisation, the cranial capacity of a race may, in the course of centuries, become gradually increased.

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## III.—*The Hairy Men of Yesso.* By W. Martin Wood, Esq.

[*Read December 27th*, 1864.]

It may seem a thankless task to describe a people whose race is evidently doomed to extinction. It generally happens also, that in the isolated residue of any declining race, its repulsive peculiarities become more strongly marked. Some effort of humane feeling is required in such cases, in order to recognise those traits in virtue of which the perishing fraction may claim its kinship with the great family of mankind. Such an outcast race yet lingers in the island of Yesso, the most northern portion of the empire of Japan. These aborigines are named "Aïnos", or "Mosinos"—the "all-hairy people", this last being a Japanese term which marks their chief physical peculiarity. Their number is estimated at about fifty thousand.

Yesso is only separated from Niphon by the narrow straits of Tsougar; but the climate of the island is unpropitious and its soil is barren, so that the Japanese have only occupied the southern portion. They number about a hundred thousand, and dwell principally in the cities of Mats-mai and Hakodadi. The former city is the residence of the feudatory prince who holds Yesso under fealty to the Tycoon of Yeddo. To this prince of Mats-mai the Aïnos send a deputation every spring, who present a tribute of dried fish and furs, and do homage and repeat a formal convention expressive of submission to the Japanese. Hakodadi is the largest city of Yesso, and is the third Japanese port opened to foreign commerce. Its roadstead and harbour are the safest and most commodious of any in the eastern seas. It affords an excellent port for the refitting of merchant vessels, especially for the American whalers; and it also forms a good rendezvous for the naval vessels of the various trading powers. From a temple in the centre of the city float the flags of England and France, and there the consuls of those powers reside; the American consul is located near them. The Russians have chosen a more isolated position at the outside of the city; but they occupy a much larger space than the other powers, and have a much more extensive staff.

The Aïnos live quite in the interior of the island, and seldom show themselves at Hakodadi or Mats-mai, except when on their embassy in spring or in autumn, when they come to exchange their dried fish and furs for rice and hunting gear. Of a timid and shrinking deportment, these people seem utterly crushed in spirit by their long subjection and isolation. They are short in stature, of thick-set figure and clumsy in their movements. Their physi-

cal strength is considerable; but, besides that peculiarity, there would seem to be nothing by which an observer can recognise the possibility of the Aïnos ever having possessed any military virtue. The uncouthness and wildness of their aspect is calculated at first to strike a stranger with dismay or repugnance. Esau himself could not have been a more hairy man than are these Aïnos. The hair on their heads forms an enormous bush, and it is thick and matted. Their beards are very thick and long, and the greater part of their face is covered with hair which is generally dark in colour; but they have prominent foreheads and mild dark eyes, which somewhat relieve the savage aspect of their visage. Their hands and arms, and, indeed, the greater part of their bodies, are covered with an abnormal profusion of hair. The natural colour of their skins is somewhat paler than that of the Japanese, but it is bronzed by their constant exposure. The women of the Aïnos, as if in default of the extraordinary endowments of their spouses, have a custom of staining their faces with dark blue for a considerable space around their mouths. Their children they generally carry in a very singular fashion over their shoulders; and during a journey these tender charges are placed in a net and slung over the backs of their mothers. The children are lively and intelligent when little, but soon acquire the downcast aspect of their elders.

Yet these strange people have a history, and though its details are lost, they cherish the remembrance that their forefathers were once the equals, if not the masters of the Japanese. This is supposed to have been in the sixth century before Christ, at a period coeval with the reign of the first Mikado of Japan. The Aïnos were then masters of the northern provinces of Niphon, but they appear to have been dispossessed of their land by the Japanese, and then were gradually driven across the strait of Tsougar into Yesso. Their final subjection was not accomplished until the close of the fourteenth century, when they were completely overcome by a Japanese general, and compelled to render tribute at Yeddo. As named above, this ceremony is now performed at Mats-mai; and a considerable revenue of fish and skins is collected from the Aïnos by Japanese officials in Yesso.

As to the origin of the Aïnos, we believe the whole college of ethnologists are at fault. Geographically considered, Yesso would seem to belong more to the Kurile islands than to Japan; and the short stature of the Aïnos, together with their ordinary methods of hunting and fishing, remind one of the Kamschatkans. Yet those tribes have none of that superabundance of hair which, being so striking a peculiarity of the Aïnos, would be participated in, to some noticeable degree, by any race having affinity to them. Then, the chief objection to a northern origin for the Aïnos is, that

they persist in cherishing the tradition that their ancestors came from the West; that is, from some place in the direction of the Asiatic continent. Yet no tribe now found in Corea or Mantchouria bears any resemblance to the Aïnos. The interior of Asia, at least all the borders of Tartary and Siberia, have been explored by M. Huc, Mr. Fleming, and Mr. Atkinson, and as yet no hairy people have there been found.*

The language of this outcast race affords no clue to their origin; for there seems no known tongue—certainly none of eastern Asia—which has affinity to theirs. They have no written characters, but have had their rude bards or sagas who, in verses orally transmitted, have kept alive the memory of their ancient heroes and their exploits on mountain and flood. The world will not quite lose these wild strains; for a French missionary, the Abbé Mermet, is preparing a translation of them. The language itself has already been collected, thanks to the perseverance of a Japanese official, who has compiled a glossary of the Aïnos tongue rendered into his own. This zealous linguist deserves to have his name recorded, and it is a sufficiently remarkable one, being—*Jashero-tsona-notske.* Possibly the Aïnos tongue may have in it some valuable hints for professors of mnemonics. One of its chief characteristics appears to be a clumsy principle of repetition. Thus, the numerals are compound, and carry one syllable all through, as—*chena-ppou,* one; *tso-ppou,* two; *re-ppou,* three; *eunes-ppou,* four; *askina-ppou,* five; and so on. Their name for the sun is *baikrets-housoup,* and for the moon *konnats-housoup*; for water, they have *bā,* and for hand *tekke.* Probably, the European public may shortly receive from the Abbé Mermet a translation of the Aïnos-Japanese dictionary. It is some evidence of the former influence of the Aïnos in Niphon, that the Japanese have adapted several of their Aïnos words into the spoken language of Japan.

The rude mythology of the Aïnos is connected on some obscure principle with the animals of the chase and the monsters of the deep. The bear is their chief divinity, although they slay that animal whenever they can accomplish such a feat. In the process of dissecting the carcass, they endeavour to conciliate the deity whose representative they have slain, by making elaborate obeisances and deprecatory salutations. The head they always reserve, and place it outside their habitations as a sure protection against misfortune. From the Japanese they have adopted some few Bhuddist notions, but their native theology mainly belongs to the class of *fetiche* worship.

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* But the people of the Kurile islands are a hairy race, like the Aïnos, although the author seems unaware of this fact. Editor.

All tribes of men have some tradition of the origin of the race. That held by the Aïnos is exceedingly curious, both in its points of divergence from, and resemblance to, similar legends of other aborigines. Their story places a woman as the first of their race, and she came, as they say, from the west. This was soon after the world was formed out of the waters, which is the genesis taught in their cosmogony. The Aïnos know of no land except islands; so that really this might be the form which tradition has taken, since that remote period when the isles of Japan and the Kuriles were forced up, as they appear to have been, by volcanic action from the ocean bed. The Aïnos tell how this woman, the first of their race, floated over the waves in a vessel which was freighted with bows and lances, with nets and lines, and all things necessary for the chase and fishing. She landed on an island where was a beautiful garden, and in it she dwelt alone and happily for a long period of years. "That garden still exists," say they, "but no living man has yet been able to find it." The close of this reign of single-blessedness, so long enjoyed by this the first of the Amazons, was brought about by a singular circumstance, which, however, can scarcely be narrated here. There is not, as in most legends, the record of a broken commandment, though transgression of some kind is implied; the change being connected with the loss of the garden and the increase and dispersion of the race. These events followed after the advent of a self-imposed protector whom the lady of the isle had, in a period of weariness, permitted to enter and share her solitude.*

When the Aïnos are visited at their own homes, they are free from that excessive bashfulness which they exhibit in presence of their Japanese masters. They are extremely hospitable, and are even eager to place at the disposal of their visitors all their little stock of provisions, their dried fish and furs. This real kindness on their part is not only a sufficient contrast to their roughness of exterior, but it attracts the attention of the observant traveller, when he also notices the physical strength of his hosts and the evidences of their prowess in the chase. Besides the implements and spoils of hunting and fishing, there is little wealth of any kind in their habitations. The disposition for accumulation is one that

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* "Un jour, en revenant de la chasse, elle se sentit fatiguée, et pour se délasser elle alla se baigner dans la rivière qui séparait ses domaines du reste du monde. Soudain elle aperçut un *chien* qui nageait vers elle avec rapidité. Effrayée, elle sortit de l'eau et se cacha derrière un arbre. L'animal la suivit et lui demanda pourquoi elle s'était enfuie: elle répondit qu'elle avait eu peur. 'Laisse-moi rester auprès de toi, dit alors le chien, je serai ton compagnon, ton protecteur, et tu ne craindras plus rien.' Elle y consentit, et *de l'union de ces deux créatures* naquirent les *Aïnos*, c'est à dire les *hommes*."

is sure to be lost by a declining race; and any surplus of fish and furs which the Aïnos gather appears to be absorbed by their tribute to their Japanese masters. It is those articles which are recognised by the Aïnos as wealth, for of such consists the dowry which is brought by their brides on entering their new abode.

Some writers have drawn unfavourable conclusions as to the social morality of the Aïnos, from their practice of living in groups of several families. This, however, arises from their former system of patriarchal government; which, though now retaining some moral influence, has been superseded in penal matters by the authority of the Japanese. The Aïnos formerly were monogamists; but now, when their resources admit of it, they imitate the Japanese practice of polygamy. In their marriage ceremonies they also imitate those of their conquerors. Like most other degenerate races, the Aïnos have acquired a taste for tobacco and alcoholic drinks; of the latter, they use *sak-ki*, an intoxicating draught made from rice.

The question suggests itself—What can the future have in store for this strange people? Their physical strength, which is considerable, might be applied to some agricultural labour suitable to the soil of Yesso; and their generous disposition would imply a a capability for their efforts being guided and directed. Yet, under the depressing influence of Japanese subjection, they seem to have lost all desire for progress of any kind. If, as seems likely, the Japanese polity should become disorganised, the Aïnos might, in the commotion, be roused to some new efforts on their own behalf. Should some new branch of industry be found for them, then perhaps the continuance of this singular race might be secured for a few generations longer than their present prospects seem to promise.

## IV.—*Contributions to the Natural History of the Iranians.* By M. KANIKOFF.

[*Read January 10th*, 1865.]

WHATEVER may be the convictions of natural philosophers on the fixity of species in the vegetable or animal reigns, the absolute application of this principle to man seems to me quite impossible. Man is endowed with a privilege of keeping up the traditions of his past, and whenever the ethnologist has seriously inquired into the history of races, he has been forcibly brought to admit the existence of a savage or natural or primitive race, which, by gradual transformations, and under the influence of various agencies, has taken at last the form peculiar to the majority of individuals of this race, considered at any given moment.

In new societies, formed, if I may say so, under the eyes of attentive observers, the inquiry into their origin offers little or no difficulty. Thus, nobody would be embarrassed to discover the primitive type of Turks, founders of the empire of the Sultans, in the populations of the same family wandering on the eastern shores of the Caspian Sea. Under the Seldjukians, they invaded the western provinces of ancient Persia, and then, by degrees, made their progress to the west, through Asia Minor. But for a people, like the Persians, whose antiquity is coeval with the earliest recollections of mankind, and whose country was so frequently and so radically overthrown by mighty social commotions, the task of finding out the place where we can hope to meet their primitive type, is much more difficult, and would appear, at first sight, quite impossible.

For in a very large class of natural phenomena, the exact point of their origin is indicated only by directions which converge from different sides, and we can never hope to discover the true position of their common intersection. The inquiry into the place of the cradle of a nation, and especially that of the origin of the peoples of the Iranian family, presents the same peculiarities.

It is generally known that the highest point of the old world, the plateau of Thibet and the chain of Himalaya, divides four different nationalities: the Chinese to the east, the Turanians to the north, the Hindus to the south, and the Iranians or Persians to the west. Philological and historical researches have established also the community of origin of the Hindus and of the Iranians, who, at a very remote period, dwelt together on the plateaus of High Asia, under the common name of Arians. I will not recur to the proofs of these facts, and I take them as a founda-

tion of my ulterior researches, strictly confined to the ethnography of the Iranian family of the Arian race, and I begin with the question, Where should be placed the cradle of this family? For the solution of this problem, we must necessarily inquire into the most ancient traditions of the peoples of this family, and examine the ethnographical value of their indications. We must also begin with the analysis of the Vendidad and of the poem of Firdoosi. These two documents, the only ones that give us any information on the pre-historical past of the Iranians, need only be mentioned by name to show the weakness of the assistance ethnologists can hope to find in them.

The Vendidad has preserved for us the echoes of a very remote period, at which, we cannot say positively, if the Iranian family was constituted as such, or if it was agglomerated with all the heterogeneous elements of the Arian race, which have since formed very nearly all the primitive populations of Europe. Firdoosi, on the contrary, has also preserved for us abridgments of very ancient traditions, but they were collected at a period when the Iranian nationality underwent many radical transformations, which permit us to suspect the purity and integrity of these recollections.

Therefore, it would be very rash to seek in these two sources for anything more than a faint indication of the locality of the first formation of the Iranians, but this, I believe, can be elucidated by those documents. An indication obtained this way would have a character of indubitable reality, as resulting from two documents of which the one is, very probably, anterior to the formation of the nation, and the other long posterior to it.

The first "faraghard" of the Vendidad, pompously designated during a long time as "The first page of the history of Indo-German nations," as "The first itinerary of their migrations," was very justly reduced by the sound criticisms of Messrs. Kiepert, Spiegel, and Breal, to more modest proportions. It is a religious book of very respectable antiquity, which has nothing in common with an historical narration; but as it contains geographical names, these names will show us the portions of the Asiatic continent known to the authors of the book. Mr. Breal considers all the localities mentioned by the Vendidad as totally fabulous, but this seems to me impossible, as a great many of these names are very easily explained and identified with existing countries and mountains. I will not speak here of all the numerous translations and comments of this "faraghard", but I will only mention the last results on this matter obtained and expounded by Mr. Spiegel, in his communication made to the Academy of Munich, on the 5th of March, 1859 (*Das erste Capitel das Vendidad*), and by Mr. Haug, in his book *Zend-*

*studien.* We may adopt the identifications proposed by either of these two *savants,* but the result which interests the ethnographical question is the same; that is, the majority of the names of localities, mentioned in this chapter of the Vendidad, belongs to places situated in Eastern Persia. This fact is very natural, as the religion of Zoroaster was probably acknowledged as an official creed in the ancient Bactriana; but it proves (1), That, at this remote epoch, the East Iranians were more advanced in civilisation than their compatriots of the West; and (2), That they formed larger centres of population.

The Chahnameh (Shahnameh), an imperishable monument of the Persian genius, is at the same time a sort of complement to the Zendavesta, as many legends reported in the poem *in extenso,* are only indicated by allusions in the sacred book. Such is, for instance, the tradition of Djemshid (see Roth, *Die Sage von Dschemschid, Zeit. d. D. Morg. Ges.,* t. iv, 1850, p. 417-433). Being far from ascribing to this collection of reminiscences of the first centuries of the existence of Iranians an historical value, I think it necessary to show the great difference existing between the traditions known to the Zendavesta and those consigned in Firdoosi's poem. Mr. Spiegel already very justly observed, that the principal personage of the poem, Roostam, seems to be perfectly unknown to the author of the religious book. His name, so often repeated in Firdoosi's verses, is not mentioned at all in the book of Zoroaster, who, however, speaks of Sam and Zal. But if we consider that the poem is closed by the apparition of the prophet, at the moment where ceases the intervention of genii in human affairs, are we not entitled to admit, that the poet, wishing to end his epopee, with so important an occurrence as the establishment of a national creed, has placed it after the heroic period of his people's past, and that, in reality, this first effort of the Persian genius, must be placed between the mythological and the heroic periods of the Iranian past. But be that as it may, the essential point, for me, is to show that the traditions of these two periods refer, nearly exclusively, to the east of Persia. The west of the empire plays a very secondary part in the poem, and the antagonism of the Iranians with the Semites is much less insisted upon, than their struggles with the peoples of the north, and particularly with Afrassiab, the true representative of the Turanians. We do not mean by this that the occident of Iran has no traditions at all; Feridoon, the mythological prototype of Cyrus, performs his exploits in the vicinity of the Mount Demavend, and still in the time of Herodotus three distinct versions of the life of Cyrus were generally known (see Her., l. i, 95); but I repeat that the greatest part of the facts consigned in the poem refer to the eastern provinces of Persia.

We see, also, that the geographical indications of the most ancient recollections of the Iranians relating to their past, seem to oblige us to place in the east of Persia the cradle of the nation, but they give us no probable evidences as to the exact spot of the vast territory which they point out. To limit as much as possible this space, we must apply to other sources of information, especially to the notions preserved by the inhabitants of the north-eastern, eastern, and south-eastern frontier of the abode of the Iranians, concerning the directions they travelled in, to reach their present settlement.

Merw and Balkh, two very ancient cities of the northern frontier of Khorassan, were, according to a tradition mentioned by Istakhry, founded by Tahmooraz, therefore by populations coming from the south and the west. Beikend, the first inhabited spot of Sogdiana, according to Narshakhi, was built by men coming from the west, who founded, afterwards, Bokhara and other cities, in the direction from west to east. The tribe of Djemshidies, as I have mentioned in my memoir on Khorassan, preserves a faint recollection of their Seistanian origin. Lassen has proved to conviction that, so far as the time of the Gaznevides, the Indian population was very near the eastern frontier of Seistan. The Kafir Seapoosh, who were presumed to be of Iranian origin, are, according to the recent researches of the missionary Trump (*Journal of the Royal Asiatic Society*, t. xix, p. 3), undoubtedly of Hindu origin. Far to the north-east there is a people, which is doubtless of Persian lineage, the Wakhanis. Ahmed Shah Nakshbendi (see *Journal of the Royal Asiatic Society*, t. xix, p. 332) has found them in the village of Kholastan, at three days' march from Yarkand. Lieutenant Wood, who is the only European, after Marco Polo, who visited this people in their abode, considers them as Persians, but says nothing of their origin; and, as the Wakhanis played so insignificant a part in the existence of the Iranian nation, I cannot consider them as the forefathers of this large family of the Arian race. Nor must we attempt to place the ancestors of the Iranians to the south of Seistan. The Gedrosia of the ancients, the Belootshistan of our days, by the inhospitable character of its soil, was, at all times a neutral ground, quite fit, by the isolation of its habitable spots, divided by vast deserts, to shelter outcasts of different nations, especially, as I can prove, fugitives from Arabia and from Turkistan.

Though we have excluded the west of Persia from the lands where we can place the origin of the Iranians, still, as the most ancient European notions of this people relate to these countries, we will say a few words with regard to this supposition. It is true that Herodotus, Xenophon, and other ancient writers, speak almost exclusively of western Persians, and seem to believe that

their original home was somewhere in modern Farsistan; but, fortunately, they are not the only western witnesses of the past life of this people. The inscriptions on the obelisk of Nimrood, so ably translated and investigated by Sir Henry Rawlinson, give us a picture of the distribution of Iranian tribes on the continent of Asia far more ancient than the list of these tribes preserved by the great historian of Halicarnassus. We see by this document that Temenbar II passes the Zaab, enters into Kharkor,—identified by Sir Henry Rawlinson with Armenia,—goes through the abode of the Arians, and then enters the land of the Persians, whose twenty-seven kings pay him tribute. And I believe with the learned interpreter of this inscription that it proves that, at the epoch of the above-mentioned Assyrian king, the Iranians had not reached, as yet, Persia proper (*Journal of the Royal Asiatic Society*, t. xix, p. 442). In fact, the extensive and dry plains of western Persia are not suitable for the formation of a distinct family of a race. The woody and narrow valleys of the northern slopes of the Demavend and the southern shores of the Caspian would better answer this purpose; but the distance of these countries from India, and the peculiarities of their soil, so different from that of the majority of lands occupied by the Iranians, make this hypothesis very improbable. Far to the north-west of the last-mentioned provinces, we find another people, the Ossethians, who call themselves *Tron*, and who are doubtless of Iranian origin, as the philological researches of Mr. Sgögren have determined. They came to their present abode before the formation of the myth of Prometheus, known to them to these days under the name of Cæraman; but this alone gives us no right to place the cradle of the Iranian nation in the eternal snows of the Caucasus; it proves only that the first migrations of different members of this family began at a very remote period.

Thus, the whole of our notions on the present and the past distribution of Iranians in Central Asia, give us some right to believe that they were scattered to the north, west, south, and east of the fertile valleys situated between the Hindoo Koush, the chains of Poughman and of Koohi Baba, and of the well-watered plains of Herat, Seistan, and Kirman. I consider, therefore, the Persian inhabitants of the above-mentioned territory as the true aborigines, and it is among them, I believe, we may hope to find representatives of the primitive type of this family.

Probable as this result may appear, obtained only by historical investigations, it cannot be considered as certain before it is submitted to the trial of an application to facts now existing. Therefore, we must begin by solving three questions:—1. If the populations of the east of Tron offer us a type distinct from that of other parts of Persia. 2. If this special branch of the eastern

population which reproduces the above-mentioned distinct type has any claims to antiquity. And 3. If we have any right to consider this distinct form as the primitive and fundamental type of the Iranians.

The notion that the Oriental Persians have a distinct form and represent better the ancient type of the nation is not very ancient. The Greeks, before Alexander, came very seldom in contact with the eastern populations of the empire of Cyrus. Amongst the troops of Xerxes, doubtless the Arians, the Marghians, the Bactrians, and the Drangians have had many representatives, but their relations with Europeans were unfavourable to ethnographical studies. The historians of Alexander the Great give us generally very few particulars on the nations subdued by the illustrious Macedonian conqueror. The most ancient mention of this difference seems to me to have been made only in the seventeenth century, by Don Garcia Silva Figueroa, a Castilian nobleman, sent by the King of Spain as envoy to the court of Shah Abbas I, in the year 1614, who returned home in 1624. He says (page 178 of the French translation of his travels by Wicqfort), "In the eastern provinces of Persia and in the province of Kirman, which is on the eastern frontier of the empire, we find many of these ancient and true Persians, who, notwithstanding that they were mixed with others, and, notwithstanding that, being united to their conquerors, they formed one people, kept up their primitive manners, their dresses, and their religion." Pietro Della Valle, who was in Persia at the same epoch, says only (pp. 105-6 of the French translation), "That the Gabirs are nearly like the Persians of to-day, but their shape is thicker." An English traveller, a Fellow of the Royal Society, John Fryer, who was in Persia at the same time as Chardin, between the years 1672 and 1681, is still more explicit. He says (pp. 265-266), "The *Gabrs* or *Gours* are the true *Persian* race. . . . These seem to me the most lively representation of the figures both on the rocks and on the palace itself at *Persepolis.*" His contemporary Labrosse, better known under the name of Pater Angelus, in his *Gazophilacium linguæ Persarum,* published at Amsterdam in 1684, insists still more strongly on the difference between the Guebers and the western Persians. He says, "The Persian nation has no other good qualities than a good port and bodily beauty. . . . But you can see their ancient form in the persons of Jaures, fire-worshippers, who are ugly as monkeys." Mr. Ouseley (t. iii, p. 355, note 13) has very justly shown the exaggeration of this observation; but, nevertheless, it is a fact, that all the travellers of the seventeenth century were struck by the difference between the western Persians and the Guebers. At last, Chardin, in a passage very often quoted by Buffon, Gibbon, Prichard, and others, in chap. xi, t. 2, observes

that, "The blood of Persians is naturally coarse, which is seen in the Guebers, who are the remains of ancient Persians: they are ugly, badly shaped, heavy, and have a rough skin and a coloured complexion. We can see it also in the provinces which are near to India, where the inhabitants are likewise badly shaped like Guebers." Then, having said some words on the mixture of Persians with Georgians and Circassians, he observes, "Without this mixture, the men of quality in Persia would be the ugliest beings in the world, because they descend from the lands laying between the Caspian Sea and China inhabited by the ugliest men of Asia."

Dr. Prichard, in his justly celebrated work, *The Natural History of Man* (p. 171), strongly attacked this opinion of Chardin; he says, "Sir John Chardin, the most celebrated of all travellers in Persia, conceived the notion that the old Persian race was an ugly and ill-favoured one, similar to the Mongols, and that the personal beauty for which the modern Persians are noted is inherited from Circassian and Georgian concubines. This opinion he probably formed from some of the Kigat, whom he mistook for Persians." Then, having quoted the original words of Chardin and the opinion of Ammianus, he continues, "A perfect confirmation of this account (of Ammianus), which leaves no further evidence to be desired, is afforded by the numerous sculptures on Persian monuments at Istakhr and Hamadan, or Persepolis and Ecbatana, and other places. The outline of the countenance is here not strictly Grecian, for it is peculiar, but it is noble and dignified; and if the expression is not full of life and genius, it is intellectual and indicative of reflection. The shape of the head is entirely Indo-European, and has nothing that recalls the Tartar or Mongolian."

To this I must observe:—1. That Chardin has never said that ancient or modern Persians were similar to Mongolians; he speaks only of "*gens de qualité,*" courtiers of Shah Abbas, who were nearly all of Turkish extraction. 2. That in Hamadan or Ecbatana is not to be found a single sculpture of man or woman. And 3. That the sculptures of the ancient Persian monuments present to us indeed a very valuable source of ethnographical information, as we will show; but they must not be taken *en masse,* because, in these hundreds and hundreds of figures sculptured at Persepolis, we cannot say if the artists have reproduced types of western or eastern Persians. In the few instances where we can decide upon the nationality of the sculptured figures, the observation of the travellers of the seventeenth century is not only *not* contradicted by these sculptures, but it is strongly confirmed by them.

In the great many sculptured rocks and monuments discovered by travellers in Persia, only three *bas-reliefs,* as it seems to me, have an ethnographical value. The first is the celebrated rock of

Bisitoun, where Darius is represented receiving the vanquished rebels. The second is the monument of Darabguird, representing the triumph of Sapor over Valerian in A.D. 260. The third, and last, is that of Shapour, in which Mr. Ouseley has justly recognised, as it seems to me, the reception by Sapor of the ambassadors of Odenath, husband of Zenobia, Queen of Palmyra. Indeed, it is only the first of these *bas-reliefs* which has a direct application to the Iranian ethnography, and it will also be the only one I shall examine in detail.

Every one knows that on this monument Darius is represented, attended by two servants, placed behind him; he puts his foot on the neck of the Mage Gaumata prostrated before him, and addresses reproaches to nine captured rebels approaching him in front with their bodies bent and their hands bound behind them. Of these nine figures, the nearest to Darius is that of *Atrina*, King of Susiana; then comes *Naditabira*, King of Babylon; *Travarti*, King of Media; *Martia*, another King of Susiana; *Citrakhama*, King of Sagartia; *Pahyazdata*, pseudo-Bardia, son of Cyrus; *Arakha*, King of Babylon; *Frada*, King of Marghiana; and at last *Cakouka*, the Saeian. These figures are the more interesting, that the legends engraved upon every one of them, and determining exactly the personality of each, are in a very good state of preservation, and were deciphered without any difficulty. I reproduce here only the rough sketches of their heads. No. 1 is the head of one of the followers of Darius; No. 2 is Darius himself; then come the captive kings in the above-named order; No. 11 is the Saeian; and No. 12 is Gaumata.*

We have, also, in this truly ethnographical gallery, six heads of Persians, the Nos. 1, 2, 5, 7, 10, and 12. One is a Median, No. 5; one a Sagartian, No. 7; No. 10 is an inhabitant of Marghiana. Media is placed by Herodotus in the tenth nome, and belongs evidently to western Persia: as to Sagartia, so far as I know, being without a correspondent in the modern names of Persian provinces, it must be classed, I believe, in eastern Persia, because Herodotus informs us, that the Sagartians paid their tribute in the fourteenth nome, along with the Zarangians and the Thamanians, inhabitants of Seistan and eastern Khorassan. Marghiana is identified by all the commentators of Herodotus with the modern province of Merw, and belongs also to eastern Persia. Thus, the Nos. 1, 2, and 12 represent the inhabitants of modern Farsistan; No. 5, a man of Aderbeisjan; No. 7, a Khorassanian of the south; and No. 8, a Khorassanian of the north-east. In examining these figures, we see that the oval of the head, so perfect in Darius and in his two clansmen, sufficiently evident still in the Mage of Median descent, loses this form as soon as we go

* The reference is to the drawings exhibited at the meeting.

to the east, the top of the skull becoming flat, and the base of the nose wider. The eye preserves its dimension, but has not the beautiful cut it has in the western Persians; in short, we see in the figures of this *bas-relief* the same variation of features and of conformation of the head that we observe to-day in comparing the type of a Heratian or of a Persian Gueber with that of a Persian of Shiraz or Ispahan. If it were possible to decide upon an isolated fact, I should be tempted to believe, that at the epoch of Darius, these worse features of the primitive Persians extended more to the west than in our days. No. 9 represents the Armenian Arakha, who seized upon Babylon, and he has a head flattened at the top, a form which has completely disappeared in the Armenians of the present day, probably through their crossing with Semites, Turks, and western Persians. Considering that Martia, No. 6, and Wahyzdata, No. 8, are very similar in features to eastern Iranians, though they are designated in the great inscription of Bisitoun as Persians, I am inclined to admit, that at the time of Darius, even among the Western Persians, many individuals reproduced the primitive type of their race, considerably changed only among the Achemenians.

We can show that nearly the same difference in the conformation of the head exists at the present day. A modern traveller in Persia attached to the military mission of Colonel Brogniart, M. Duhousset, guided by M. Quatrefages's instructions, has measured the different diameters of the heads of Persians, the length of their horizontal sections, and the length of half the arch which goes from one ear to the other. The length diameter was taken by measuring the distance between the *glabella* and the most prominent part of the occipital. The breadth diameter is the distance between the temporal bones, and the vertical or height diameter is the vertical distance between the aperture of the ear and the horizontal line, tangent to the top of the head. All these measurements are expressed in millimeters, and are the means of eight measurements for Hindus, seven for Afghans, three for Guebers, five for Persians of Ghilan and Mazanderan, five for Kurds, and four for Bakhtiaries.

| Nations. | I. Length diam. | II. Breadth diam. | III. Vertical diam. | Greatest horizont. circumf. of the head. | ½ arch going from one ear to the other. | Relation to | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | I. : II. | I. : III. | II. : III. |
| Guebers | 198 | 139 | 104 | 555 | 296 | 1·42 | 1·90 | 1·34 |
| Hindus | 196 | 146 | 100 | 565 | 291 | 1·34 | 1·96 | 1·46 |
| Afghans | 189 | 144 | 103 | 559 | 258 | 1·31 | 1·73 | 1·40 |
| Ghilanians | 183 | 154 | 106 | 558 | 319 | 1·19 | 1·73 | 1·45 |
| Kurds | 182 | 157 | 101 | 560 | 311 | 1·16 | 1·80 | 1·45 |
| Bakhtiaries | 181 | 164 | 107 | 571 | 327 | 1·10 | 1·69 | 1·53 |

These numbers have an ethnographical value easy to be interpreted. They establish evidently a considerable difference in the conformation of the head in western and eastern Iranians. The Kurds and the Bakhtiaries are the opposite of Hindus and Guebers for all the diameters of the head. The value of this variation is not at all proportional to the numerical largeness of these diameters. In all the Iranians, the greatest diameter is I, the mean is II, and the least is III, but the variations are *maxima* in the breadth, diameter twenty-five millimeters, mean in the length one, seventeen millimeters, and *minima* in the vertical diameter, three millimeters. Thus it seems that in the Iranians the influence of crossing on the form of the head is particularly expressed by the elongation of the breadth diameter of the head. This result would be interesting indeed if it could be relied upon, but as it is based on very few facts I do not attach much importance to it, and I mention it only for the sake of further researches which may confirm or refute it. The numbers collected in the above-mentioned table are quite conformable to history. Indeed, if we take off consecutively the numerical value of all diameters (I) from that of the Guebers, we find a difference of two millimeters for Hindus, twelve for Afghans, fifteen for the inhabitants of the south coast of the Caspian, sixteen for Kurds, and seventeen for Bakhtiaries. This sudden passage from two millimeters to twelve implies evidently some exterior influence which I can only account for by the crossing. The aborigines of Afghanistan are doubtless of Iranian extraction; at every period of their past they were submitted much more to Persian and Hindu influence than to any other, but the earliest records show also their contact with Sacians. After the introduction of Islamism in Afghanistan and among the Turanians, their neighbours, these mixtures became more frequent, and we know positively that the Ghildjeis, now one of the largest tribes among Afghans, are of a Turkish origin. The inhabitants of Mazanderan and of Ghilan, the first by their vicinity to Toorkmans and Kharezmians, and the last by the establishment in Talysh, at the epoch of the first Seldjukians of a large Turkish tribe, the Kiptchaks, must necessarily preserve marks of their crossing with Turanians. As for the Kurds and the Bakhtiaries, their constant crossing with the Semites of Mesopotamia and with Turkish tribes of Aderbisdjan and Asia Minor, is too evident to be much insisted upon. The heads of the Hindus and of the Guebers differ very little in their length diameter, and I can attribute it only to the loneliness of these populations resulting from the exclusiveness of their faith. If we admit even that at the epoch where the fire-worship was much more generally spread than at present and when it was the dominant religion of the great Sassanian empire, the crossing of the Iranians with other

races could have changed the primitive form of their heads, the Guebers of our time could return to it by the action of *atavism* very obvious among Iranians.

I must confess that I consider the measurements taken on the heads and on the bodies of living individuals as the only possible way to establish ethnography on a truly solid and scientific base, The prejudice, common to all religions, consisting in the belief that it is impossible to show more regard to the dead than by securing their mortal remains from the view of living men, seems not likely to be abandoned, and our collections of skulls and of skeletons will never, I fear, be sufficiently large to permit us to take on these bones only as many measurements as are necessary for the elimination of all accidental differences of the human crania and other bones of different races. The best proof of this is, that in the largest known collection of skulls, that of Netley, there are only eighty-seven crania of natives of Great Britain (see Dr. Williamson's *Observations on Human Crania contained in the Museum of Chatham*, 1857, p. 11). But, nevertheless, the usefulness of collections of skulls for the ethnographer, cannot be doubted. The skull will remain for ever the normal standard of the ethnologist; and I cannot venture to give any definitive opinion on the form of an Iranian head without having exposed the measurements I have performed on the crania of representatives of this family of Arian race preserved in the principal craniological museums of Europe—at Petersburgh, Göttingen (Blumenbach collection), Paris (Jardin des Plantes), London, in the College of Surgeons and the British Museum, and at Netley. I seize this opportunity to express my warmest thanks to the eminent men who kindly aided me in these researches. They are Professor Baer and Dr. Owsianni, Professors at St. Petersburgh; Dr. Keferstein, at Göttingen; M. Quatrefages and Dr. Emmanuel Rousseau, at Paris; Dr. Gray and Mr. Cox, at the British Museum; Dr. Flower, at the College of Surgeons; and Colonel Wilbraham, C.B., Professor William Aitkin, and Dr. Otto Stridinger, at the Royal Victoria Hospital at Netley.

The human skull has been studied in these last years by so many eminent naturalists and for so many different purposes, that it has resulted in a great diversity of methods for measuring the cranium. But in an ethnographical aim, where we must take of these measurements on the skull only those which can give us a good idea of its exterior form, it seems to me that the method recommended by Mr. Quatrefages to Mr. Duhoussen, completed by the measurements indicated as important by Mr. Baer, at the last meeting of German craniologists of Göttingen, will sufficiently answer to this purpose. These measurements are—I. The length of the skull or the antero-posterior diameter. II. The breadth or

the greatest right distance between the temporal bones. III. The height or the right distance between the centre of the *foramen magnum* and the highest point of the cranium. IV. Horizontal periphery. V. Mean longitudinal arch, measured from the *sutura nasalis* to the exterior edge of the *foramen magnum* or occipito-frontal arch. VI. The vertical arch, measured from one auditory conduct to the other, passing by the middle of the parietals. VII. The shortest distance between the *lineæ semicirculares.* And VIII. the length in arch of the frontal bone.

I do not mean by this that I consider other measurements such as that of internal capacity, of the weight of the skull, etc., as not important; but I have always in sight measurements performed on living heads and those which we can reasonably expect from a traveller. All my measurements are expressed in millimeters.

| Guebers. | I. | II. | III. | IV. | V. | VI. | VII. | VIII. |
|---|---|---|---|---|---|---|---|---|
| 1. Brt. by myself from Yezd, Petersb. | 189 | 129 | 144 | 524 | 322 | 365 | 104 | 137 |
| 2. " " " | 177 | 135·5 | 147 | 514 | 375 | 345 | 101 | 132 |
| 3. " " " | 193 | 129 | 140 | 530 | 388 | 345 | 96·5 | 137 |
| 4. " from Kirman " | 184 | 129 | 145·5 | 520 | 378 | 350 | 97·5 | 116 |
| 5. " " " | 185 | 126 | 139 | 514 | 377 | 342 | 100 | 115 |
| Means ..... | 185·6 | 129·7 | 163·1 | 520·4 | 380 | 349·4 | 99·8 | 127·4 |

These measurements were kindly taken, at my request, by Professor Baer, of St. Petersburgh: the eminent physiologist, sending them to me in his letter of the 13th of October, 1863, writes—"I have taken the distance (II) a little above the auditory conduct. It is not always the greatest distance, and in the skull of Kirman, No. 4, it is sensibly greater backward of this conduct, it would be there at least a hundred and thirty-three millimeters." I quote this passage of Mr. Baer's letter, as in all measurements taken by myself the distance (II) corresponds to the greatest one between the temporal bones. Further, Mr. Baer observes—"I set a little apart the skulls of Kirman from those of Yezd, because, though very similar between themselves, they differ from those of Yezd by a considerably depressed forehead, the result of which is a lesser breadth of the frontal bone. The conformation of the forehead in the skulls of Yezd is more perfect; that is, the frontal angle rises sensibly more than in the crania of Kirman; nevertheless, these last stand below the European crania of our days. The face is also more prominent in the skulls of Kirman, so that they could be called prognathous. Among the skulls of Yezd, the Nos. 1 and 3 have a great likeness to each other; but the No. 2 is sensibly larger, higher, and shorter."

| Hindus. | I. | II. | III. | IV. | V. | VI. | VII. | VIII. |
|---|---|---|---|---|---|---|---|---|
| 5541. of Mus. Coll. of Surg., London | 170 | 129 | 139 | 474 | 352 | 313 | 100 | 120 |
| 5542. Thug „ „ | 165 | 127 | 140 | 466 | 344 | 300 | 100 | 120 |
| 5543. Hindu of Oriental India „ | 180 | 147 | 144 | 521 | 382 | 343 | 99 | 137 |
| 5544. Young woman „ „ | 163 | 140 | 136 | 479 | 345 | 220 | 108 | 118 |
| 223. R. Vict. Hosp. collection, Netley | 180 | 125 | 139 | 490 | 361 | 289 | 103 | 123 |
| Without No., Chilluwali „ | 187 | 145 | 140 | 534 | 393 | 352 | 103 | 135 |
| 234. Hindu of Oriental India „ | 167 | 125 | 145 | 470 | 322 | 340 | 103 | 120 |
| 249. Pariah „ „ | 179 | 132 | 143 | 500 | 362 | 310 | 109 | 127 |
| Means ..... | 173·9 | 139·8 | 140·7 | 491·7 | 357·9 | 339·2 | 103·7 | 125 |

Dr. Williamson thus describes the skulls of Hindus (p. 16): —"The cranium is of an oval form, rather narrow compared with the longitudinal diameter, which is frequently very great; the forehead is small and not much expanded; the posterior of the skull is large and the occiput prominent; the space for the downward development of the brain is of moderate extent; the ridge for the attachment of the temporal muscles is not, in general, strongly marked; the supraciliary ridge is generally marked, but not prominent; the bones of the face are rather small; the nasal bones are arched, but not so highly as in Europeans; . . . the anterior nasal aperture is generally of the European form."

| Afghans. | I. | II. | III. | IV. | V. | VI. | VII. | VIII. |
|---|---|---|---|---|---|---|---|---|
| 5540 of Mu. Coll. of Surg., London | 165 | 134 | 143 | 483 | 337 | 316 | 108 | 120 |
| 223. Ghildjei, R.V. Hosp. col., Netley | 177 | 137 | 142 | 500 | 370 | 308 | 110 | 127 |
| 224. „ „ „ | 175 | 135 | 137 | 549 | 351 | 308 | 118 | 120 |
| 225. „ „ „ | 178 | 138 | 140 | 555 | 535 | 320 | 110 | 129 |
| 235. Moolah „ „ „ | 165 | 140 | 129 | 480 | 339 | 316 | 100 | 122 |
| 229. „ „ „ | 182 | 140 | 145 | 510 | 370 | 329 | 122 | 122 |
| Means ..... | 173·7 | 137·3 | 139·3 | 512·8 | 358·7 | 316·2 | 111·3 | 123·3 |

Dr. Williamson thus describes the Afghan skulls (p. 15):— "They are generally of an oval and round figure; the forehead and vertex are high and well arched; the occiput is well rounded, and the space for the downward development of the brain is not considerable, the supraciliary ridge is well marked, and in many of them is prominent; the ridge for the attachment of the temporal muscle is situated high on the head in some of them, but not more than in Europeans; the nasal bones are high and well arched; .... the anterior nasal aperture is of the European form." The greatest internal capacity in the Afghans Dr. Williamson has found (p. 76) to be 89 millimeters, 3 cubic inches; the capacity

of the anterior chamber being 40 millimeters = 7 cubic inches; and that of the posterior chamber 48 millimeters = 4 cubic inches.

The other members of the Iranian family are very incompletely represented in the craniological collections of Europe. I have found at Netley a very interesting cranium of a Beloochy, No. 218, the only one in Europe, but, unhappily, in a very deteriorated state, the base of the skull is broken and the right temporal bone damaged. The measurements taken on it are—I. 184 millimeters; II. 130; III. 132; IV. 510; V. 368½; VI. 160; VII. 112; VIII. 124. In the Blumenbach collection at Göttingen, I have found only one skull of an Armenian, inscribed under the name of Capistranius Bogdanowitz, dead in 1785, at the age of 67 years. The measurements taken on it have given—I. 176 millimeters; II. 127; III. 138; IV. 507; V. 350; VI. 297; VII. 100; and VIII. 118. Crania of Ossethians I could never find; but I have had occasion to take measurements on the heads of living individuals of this nation. I give them here; observing, however, that the height is measured from the aperture of the ear.

| Ossethians. | I. | II. | III. | IV. | V. | VI. | VII. |
|---|---|---|---|---|---|---|---|
| Bek Moorza, æt. 24 | 188 | 154 | 146 | 576 | 390 | 379 | 129·5 |
| Mootaoo „ 39; size 1624 mme. | 178 | 162 | 141 | 560 | 327·5 | 371 | 125 |
| Khansief „ 35 „ 1556 „ | 201 | 155 | 135 | 588 | 354·0 | 374 | 121 |
| Begee „ 24 „ „ „ | 185 | 159 | 154 | 570 | 362 | 394 | 129 |
| Means | 188 | 157·5 | 144 | 573·5 | 358·4 | 379·5 | 126·1 |

Generally the Ossethians have long heads with a large and flat top; the forehead is high and the occipital large and flat; so that the profile of their heads is a long parallelogram.

In the museum of the College of Surgeons, I have found two crania, Nos. 5559 and 5560, the first of a Mussulman of Behar, the second of a Mussulman of Delhi; and as it is possible that these two individuals are descendants of Mongolians, arrived in India with the Timurides, I will give here the dimensions of their skulls as a probable specimen of transformations of a Turanian skull, under the influence of prolonged mixtures with individuals of Iranian blood.

| | I. | II. | III. | IV. | V. | VI. | VII. | VIII. |
|---|---|---|---|---|---|---|---|---|
| No. 5559. Mussulman of Behar | 187 | 125 | 133 | 510 | 367 | 305 | 102 | 126 |
| No. 5560. Mussulman of Delhi | 169 | 130 | 136 | 473 | 369 | 317 | 110 | 120 |

If we compare the measurements taken on the skulls with those of M. Duhousset taken on living individuals, we see that the relations of I to II, of I to III, and of II to III, for Guebers, Hindus, and Afghans, give us the following results:—

| Nations. | A. | | B. | | C. | |
|---|---|---|---|---|---|---|
| | I. : II. | | I. : III. | | II. : III. | |
| | Skulls. | Heads. | Skulls. | Heads. | Skulls. | Heads. |
| Guebers | 1·43 | 1·42 | 1·14 | 1·90 | 1·41 | 1·34 |
| Hindus | 1·24 | 1·34 | 1·24 | 1·96 | 0·99 | 1·46 |
| Afghans | 1·27 | 1·31 | 1·25 | 1·73 | 0·98 | 1·40 |

We see that the numbers of the series, A, are nearly the same for skulls as for heads; their difference increases in B, and is still greater in C. The reason of this is evident. The height of the head is taken from the aperture of the ear and that of the skull from the centre of the *foramen magnum*, but this last is situated by all men a little below the auditory conduct. Thus the height of the skull would be always a little larger than that of the head, and wherever this element enters as a divisor, the result for the skull must be less than that for the head. This is, indeed, the case, for all our numbers inscribed in the series B and C, with only one exception for C for the Guebers, and, as I can warrant the exactness of my measurements, I believe that this anomaly can be ascribed to some error in the measurements of Mr. Duhousset. We see, therefore, that for rendering these two measurements strictly comparable, we must have a mean to reduce the heights of the head to that of the skull by adding to the first the elevation of the auditive conduct upon the plane of the *foramen magnum.* It would be very easy if this element was constant; but, unhappily, it varies very considerably, not only in different races, but also in individuals of the same race; nevertheless, I still believe that, by making a great number of measurements, we shall come to sensibly constant coefficients in this respect. For ascertaining the variations of this element in different skulls I have taken in the craniological collection of St. Petersburgh, the following measurements, by a small apparatus constructed for this purpose, which gives very easily and with a great accuracy the vertical elevation of the aperture of the ear in skulls on the plane of the *foramen magnum.*

Thus we see that these variations are considerable, being generally included in the limits of 26·5 and 5 millimeters, and in the same race they can reach 8 and 10 millimeters.

| Nations. | Meas. Elevat. | Mean. | Nations. | Meas. Elevat. | Mean. |
|---|---|---|---|---|---|
| Chinese, No. 16 ..... | 25 | ... | Javanese, No. 40 ..... | 17·5 | ... |
| „ 18 ..... | 26·5 | ... | „ 41 ..... | 19·5 | 17·2 |
| „ 19 ..... | 22 | 24·5 | Tatars of Khiva, No. 1... | 22·9 | ... |
| Bastard Chinese, No. 21 | 25·5 | ... | „ Khokand, 2... | 16·8 | ... |
| „ 22 | 25·5 | ... | „ Kazan, 81... | 15·5 | ... |
| „ 23 | 25·5 | ... | „ anc. of Kazan, 82... | 10·5 | ... |
| „ 24 | 25·5 | 25·5 | „ „ 83... | 20 | ... |
| Bengalees, No. 27 ..... | 15·5 | ... | „ of Kiazan, 85... | 17 | 17·1 |
| „ 28 ..... | 25·5 | ... | Finish Tatars: Bashkir, 87 | 14 | ... |
| „ 29 ..... | 14·5 | ... | „ „ 88 | 15·8 | ... |
| „ 30 ..... | 17·0 | 18·1 | „ „ 89 | 7·0 | ... |
| Ceylonees, 31 ..... | 20·8 | ... | „ „ 90 | 12·0 | ... |
| „ 32 ..... | 15·0 | 17·9 | „ Ichoowash, 85 | 14·5 | ... |
| Malays of Sumatra, 33 ... | 13 | ... | „ Tcheremiss of Kusan, 84 | 20·1 | ... |
| „ 34 ... | 5(sic) | 9·0 | „ Mestsheriak, 86 | 11·8 | 13·6 |
| Javanese, No. 37 ..... | 17 | ... | Guebers, of Yezd ..... | 17·5 | ... |
| „ 38 ..... | 17·8 | ... | „ „ ..... | 10 | ... |
| „ 39 ..... | 14·0 | ... | „ of Kirnan..... | 10 | 12·5 |

But be that as it may, returning to our subject, we can say positively, that the Iranian head is an oval one with a high forehead, not so perfect as in Greek or Roman skulls, but sufficiently so to admit a possibility of connection between these families of the Arian race, with a top rather flat than arched, except those of the Hindus, with a large and generally flat occipital bone, with a large and oval *foramen magnum* and anterior nasal aperture of European form. The longitudinal and the vertical diameters are nearly as 3 to 2, and the length is to the breadth nearly as 1·3 to 1, what represents a considerable capacity for the development of the brain.

Before passing to other matters, I will mention a very controverted opinion of Herodotus on the Iranian skull. He says (lib. ii, chap. 12), that he tried to throw pebbles on Persian crania he found in the delta of the Nile, and they were so weak that he transpierced them easily, and that the skulls of Egyptians resisted the most severe blows. Professor Westergard, as he informs us in a letter to Rev. Dr. Wilson, published in vol. viii, p. 350, of the *Journal of the Royal Asiatic Society,* has recommenced this experiment at a *Dakhma* of the Guebers of Yezd without success, and he doubts the veracity of the father of history in this respect. To deny the fact after three positive assertions of Herodotus, who had seen it himself near Peluse and at Papremis in lower Egypt, is the same as to reject all his narratives, because he is rarely so affirmative, and it seems to me that we are not in need of it. The fact he mentions proves only, as I believe, that the bones of Persians, formed under the influence of a very dry climate, could not resist so long as those of Egyptians, to the action of the humidity of the Nile delta. Herodotus was born in the year

484 B.C.; the battle he mentions was fought in 525, that is forty-one years before his birth; and so the bones of the Persians killed in that battle, which he examined, were exposed, probably, seventy years to the destructive influence of humidity, which attacked them more than those of the native inhabitants of the land.

Having ascertained—1. That the origin of the Iranians must be searched in the east of the land occupied by them; 2. That a difference exists now as in very remote epochs, in the shape of Eastern and Western Iranians, we can return to the question in what part of the population of the Eastern Iran can we find the primitive national type. I believe it cannot be answered otherwise than by saying, that this original type is better preserved by the Tadjiks than by any other branch of the Iranian family.

If we do not admit that the *παγίκαι* of Ptolemy (lib. vi, c. 12) are *ταγίκαι* or Tadjiks, we must own that the ancient did not know the populations of the Eastern Iran under the name they hold to-day. But it must not be concluded from this, that the name is a modern one. Mr. Stanilas Julien has had the kindness to make for me some researches in the Chinese annals, and they proved not only the correctness of the assertion of Deguignes, that Eastern Persians are mentioned by Chinese authors under the name of *Tiao-tchi*, 122 years B.C., but that it is impossible to confound them with the Taziks or Arabs, because these last are also mentioned afterwards in the annals of the Chinese as *Tashi*. These interesting and valuable researches will be soon published in my work on Persian ethnography, proved also that the Chinese have had constant relations with the Sassanian kings, and possessed very good informations on Eastern Persia. Now, the Tadjiks pretend to be of Arabian extraction; they told it to Mr. Elphinstone at Peshewur; they have said it to me at Bokhara and at Samarcand; and they repeated the same tale to Mr. Wood at Badakhshan; but the inaccuracy of this assertion is easily established and the reason also, for which they wish to spread this notion on their origin. We have seen that the Chinese knew the Eastern Iranians under the name of Tadjiks, long before they have heard of Arabs or *Tachis*. Tadjik means bearers of tiaras or *tadjs*, and designated in the remotest periods of the existence of the Iranians the first fire-worshippers, the tadj being an exterior sign of recognition among followers of Zoroaster, as the turban among Mussulmans. Therefore, at first, this name had no ethnographical signification, but afterwards when new populations, with other religions, poured in the Transoxiania, this name remained to the aborigines or to ancient inhabitants, and has been preserved in this quality until now. At the introduction of the faith of Mohammed, this appellation came out of practice as all which reminded of the ancient religion, and that is the reason

of our not finding the Tadjiks mentioned by the early Arabian writers. As to the opinion of the Tadjiks themselves, that Arabia and the country around Bagdad, are the primæval seats of their ancestors (see Wood, p. 296), it is not difficult to explain it. In the last twenty-five years of the first century of the Hidjra, Kudjadj, governor of Mesopotamia, persecuted, with great energy all the descendants of Mohammed established in that province. Many of them fled to Transoxiana, among the most celebrated was the Seyid Sooleiman, son of Abdoollah Kedad, and great-grandson of Zeind Abeddin. He emigrated to Oorgundg, where he married the sister of Seyid Mahmood, surnamed Andjire Fakhnawi, who was buried at the village of Pirmost, near Bokhara. Of this marriage were born twin sons and a daughter; the former were named Kosfan and Hussein. The daughter of Seyid Sooleiman married a Seyid established at Bokhara, and from his son *Emir Koolal* descend the Seyids *Koolali*, very numerous at Bokhara and Yarkend. Hassan had no children, but Hussein had two sons: the eldest, Djelal, is the ancestor of the Seyids of Cabool, and the descendants of the second, *Kemal*, formed the branch of Bokharian Seyids known under the name of Seyids *Khourd*. The third, and last branch of the Seyids of the Transoxiana, that of *Atas*, has also the same origin. All these branches mixed with the Tadjiks, and those of their families which stand in nearer relation with the illustrious emigrants were naturally more respected in a Mussulman country. This state of thing exists to this day, and it is not astonishing, that nearly all Tadjiks claim the honour of an Arabian descent. But this pretension is not so general as it appeared to Mr. Elphinstone, to me, and to Mr. Wood, because we knew from Mr. Masson (*Trav. in Bel. and Afgh.*, t. i, p. 217) that the Tadjiks of Bagor claim a descent from the ancient Keianian heroes.

But if the Tadjiks are the aborigines of East Iran, it is natural to search among them the primitive type of the Iranian family. Generally, they are of a high stature; they have black eyes and black hair. Their heads are long and oval like that of Western Persians; but the frontal bone has more breadth between the semicircular lines, and that gives them faces of broader oval than in Western Persians. The nose, the mouth, and the eyes are very handsome, but the nose is very rarely bent, its general form is straight, much more prominent and long than in Mongolians, but not so much so as in Southern and Western Persians. Frequently the mouth is large, and so are the feet and ears. The abundance of their hair is the same as in Western Iranians, and not only are their beards thick, but frequently their breasts and their arms are covered with hair. The skeleton of the Tadjik is much more massive than that of the Western Persian, and this gives to the

Eastern Iranian more heavy forms, and the fine and easy shapes so common in Western Persia are not frequent among Tadjiks. Their skin is as white and delicate as that of Western Persians, and is just as capable of being sunburnt as the skin of inhabitants of Shiraz or Ispahan, who reside a long time in hot climates. Generally Tadjiks are strong, and can work long without weariness, but they are not so good walkers as Persians.

Of all the tribes of Iranian origin which I have had occasion to examine, the inhabitants of Herat, and especially the Djemshidies; with the Guebers of Kirman and Yezd come nearest to the Tadjik type. But the former have generally larger mouths, and the nose is wider at its base. Guebers, very similar indeed to the Tadjiks, have only this difference, that aquiline noses are not uncommon among them.

As soon as we go from this centre of populations which have preserved the primitive type of their race, the forms improve in spite of the size. In the Hindus, the Afghans (not the nomade ones), the South Persians, and the inhabitants of Western Persia, the size of 1 m. 40 c. to 1 m. 50 c. is much more common than that of 1 m. 70 c. and 1 m. 60 c. found by Mr. Wood in Wakhanians. Upon 14,870 individuals, inhabitants of all parts of Persia, who came in 1857 at the Consulate General's of Russia in Tabreez to reclaim passes, more than two-thirds were entered into the registers as having black eyes and a mean size, that is, from 1 m. 30 c. to 1 m. 50 c. The skull loses its largeness in the frontal bone, and the forehead grows higher; the oval of the face is more elongated; the cut of the eye is more wide and more perfect; the eyelids longer; the ear smaller, as also the mouth and the foot. To-day, as in the times of Herodotus, the hair is very abundant; it is generally black and their transversal cut is oval. The albinos are uncommon in Persia, as well as in Afghanistan. I have seen only two or three during my travels of fifteen years, and Mr. Masson, who resided for years in Afghanistan, speaks only of one woman who was shown to him as a rarity, and as a *Feringhee* woman.

The limits of this communication do not permit me to analyse minutely the variations of the primitive type in different branches of the Iranian family, and I will conclude this paper by examining whether the opinion spread by the travellers of the seventeenth century, that the Persian blood was improved only by an infusion with that of Georgians and Circassians, be well founded or not.

Chardin has especially contributed to establish this notion; but, I must confess, that in this he did not show the penetration and the sagacity which guide him generally. If he had only attentively examined the sculptures of Persepolis, he could have seen

that in the earliest times of Persian history the beautiful Persian type of his days was not uncommon, and in this Dr. Prichard is perfectly right. In the long existence of the Iranians, the Georgian and Circassian influences are quite insignificant. We have no means of inquiring into the ethnographical influences on the Persian population before and under the Achemenians; but we know by Appianus of Alexandria, that under the Arsacides, the kings and their courtiers filled their harems with Grecian women. The Arsacians themselves, being of a Turanian origin, must necessarily have introduced their national element into the population of Western Persia. This state of things lasted from 250 years B.C. to the year 226 A.D., that is, during 476 years. Under the Sassanians the Persian populations could only be renewed by exclusively national elements during the 425 years of the existence of this dynasty. The domination of Arabs helped afresh the crossing of Persians with Semites during 400 years. Under the Seldjookians during 156 years, and under the Kharezmehahs, the Mongolian Khans, Tamerlane and his descendants, for a period of more than 500 years, the Persians were constantly mingled with Turanian elements. Under the Seferians, the crossing with Armenians, Georgians, and Circassians prevailed upon all others during 230 years, and it is only in the present century that Persia is afresh reduced to its own national elements to continue its population.

Thus we can rectify the statement of Chardin and of his followers, and we must say, that the Persian blood was improved by crossing during more than 2000 years with various populations, but especially with Semites and Turanians.

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## V.—*On the Artificial Eyes of Certain Peruvian Mummies.* By Lieut. RISING, R.N.

(Communicated by Sir WOODBINE PARISH, K.C.H.; with Notes by F. GALTON, Esq., F.R.S.)

[*Read January* 10*th*, 1865.]

THREE artificial eyes, taken from the dessicated corpses of ancient Peruvians, were laid on the table. They are bright, amber-coloured, hemispherical objects, that shell into numerous concentric layers. They were forwarded to Sir Woodbine Parish by Lieut. Rising, R.N., H.M.S. *Wasp*, who wrote to the following effect concerning them:—

"My finding the enclosed objects was accidental. I was, in November 1856, in H.M.S. *Tribune*, then lying off Arica. When on shore one day, I went to the house of an Englishman, who mentioned them in the course of conversation, and showed me some specimens, which he said had been taken from what he called a mummy pit half a mile from the town. Going there myself afterwards, I found the place without any difficulty. It was a basin-shaped pit of natural formation, about thirty feet deep and a hundred in diameter, on the slope of a hill. The soil was of a light sandy nature, and had fallen away here and there from the sides, leaving some of the bodies partially exposed. We uncovered several, which were all buried in the same way. Where they had not been exposed to the air, they were in every case of a dark colour, with all the flesh on the bones and the hair still adhering to the skull. There was no evidence of their having been prepared as mummies, as they had not been disembowelled; nor did they appear to have been fire-dried, as they were not shrivelled in the least. In the sockets of some of the skulls, we found the eyes; and others were lying in the loose sand at the bottom of the pit. Near to each mummy were buried various implements, as if to denote the trade of the deceased; some had arrow-heads of flint by their sides, and others had earthenware vessels; but in no case did we find any vestige of cloth or wood, nor anything in which the eyes might have been set as ornaments. The bodies seemed to have been simply interred about four feet from the surface, without coffins or any other receptacles to them. The natives hold the place in great veneration and had strong objections to its being visited by any one. They had never, they said, used it themselves as a burial-place."

Sir Woodbine Parish submitted one of these curious artificial eyes to Professor Owen, who remarked that the late Dr. Wollaston

possessed a precisely similar object, and carried it for some time in his waistcoat pocket, asking his scientific friends to solve the problem of what it was. Sir Joseph Banks and many others were puzzled by it. At length it was shewn to Mr. Clift, the then curator of the Museum of the College of Surgeons, who at once recognised it to be the crystalline lens of the eye of a large cuttle-fish, such as abound in the Pacific. Dr. Wollaston admitted he had received the specimen from South America, as a great curiosity; but it does not appear whether or no he was aware of its having been taken from a mummy pit. The circumstances of this anecdote were familiar to Professor Owen, from the double cause of his having succeeded Mr. Clift in the Museum of the College of Surgeons and from his having become closely connected with Mr. Clift's family by marriage. The crystalline lens and other parts of the eye of the cuttle-fish, may be referred to in the Museum of the College of Surgeons, Preps., Nos. 1633-46. (Physiological Series.)

Mr. Bowman, the eminent oculist, to whom it has been shewn, also immediately recognised it to be the eye of the cuttle-fish, of which he himself had frequently made preparations. He remarks that the crystalline lens of the cuttle-fish is egg-shaped, the long axis being antero-posterior, and that it is suspended by a vertical membrane which passes in towards the hard nucleus; being in this respect unlike the lens in the higher animals, where the structure is suspended by attachments to its investing capsule. Mr. Bowman supposes the artificial eye to be the interior nucleus of the crystaline lens of a cuttle-fish of large size, that has been divided vertically, nearly in the line of the suspensory ligament. That the resultant half lens appears to have been allowed to dry on the side on which it had been cut, and afterwards to have been rubbed down flat and polished.

Sir Woodbine Parish has been unable to find any account of cuttle-fish eyes as connected with Peruvian interments, in the Spanish or other writers on that country, although some of them profess to give very particular accounts of the manner in which the corpses were prepared and dried. Mr. Bollaert had himself found them in the same pit in Arica, but had considered them to have been merely deposited in the grave as something rare and beautiful, or as a *huaca* (sacred object). Bollaert's *Peruvian Antiq.*, p. 151. He was not aware that they had been actually inserted in the orbits of the corpses, to serve as artificial eyes, in the way Lieutenant Rising has proved them to be.

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## VI.—*On the Progress of Civilisation in Northern Celebes.* By A. R. Wallace, Esq.

[*Read January 24th*, 1865.]

The large and curiously shaped island of Celebes is settled by the Dutch at its extreme northern and southern points only, the vast intervening region and the two eastern peninsulas being entirely in the hands of native governments or occupied by savage tribes. The early voyagers in the East give us scarcely any information about this extensive island; for, as it was not known to produce those valuable spices which were the chief object of their adventurous expeditions, they did not care to visit it. Its coasts, too, are everywhere surrounded by reefs and shoals, which were the dread of early navigators, and were as much as possible avoided by them; and it thus happens that, except as regards the neighbourhood of Macassar, where the Dutch early established themselves, we have more scanty accounts of Celebes than of any other island in the Archipelago.

In the present paper I propose to give a short sketch of the extreme northern portion of the island only, to point out its physical and ethnographical peculiarities, and to explain the interesting and instructive changes that have recently taken place in its political and social condition.

The district of Minahassa, as this region is called, seems to be the only part of Celebes that is of altogether volcanic structure. A considerable portion of it is elevated about two thousand five hundred feet above the sea, forming the plateau of Tondano, on which is a beautiful lake twenty miles in circumference. Scattered about this plateau and on its borders, rise volcanic peaks and ridges to the height of six and seven thousand feet above the sea, and the whole region is thickly dotted with villages up to a height of near four thousand feet. Nowhere have I seen such a depth of soil as clothes even the steep sides of these mountains; they are continually watered by the warm equatorial rains, and it is not, therefore, surprising that they are clothed to their very summits with a vegetation of the utmost luxuriance and beauty. Noble palms, elegant tree-ferns, and the singular pandani or screw-pines abound; and many of the larger forest trees are thickly festooned with *orchideæ, bromeliæ, arums, lycopodiums,* and mosses. Ferns are in infinite variety; some with gigantic fronds ten to twelve feet long, others barely an inch in extent; some with massive and entire leaves, others elegantly drooping their finely-cut foliage.

The subterranean forces which have raised this plateau and

furnished the materials for its fertile soil, still manifest their activity. Volcanic eruptions both of lava and ashes are not unfrequent; earthquakes are of weekly or monthly occurrence; while boiling springs, often resembling, on a small scale, the geysers of Iceland, and craters of boiling mud on the level plateau, impress the mind with the idea that some terrible catastrophe may at any moment devastate the country.

When these remote seas were first visited by Europeans the district we are speaking of was nominally subject to the Sultan of Ternate, who exacted tribute from the coast tribes and introduced the Mohammedan religion among some of the maritime inhabitants. When the Portuguese obtained power and influence in Ternate and made its Sultan their vassal, they took possession of Minahassa and established a factory at Menado about the year 1540.

In the following century, the Dutch assisted the native chiefs of the Moluccas to expel the Portuguese, whose influence in these countries they acquired and have ever since steadily maintained. In 1677, they expelled the Portuguese from Menado and occupied the place as the capital of one of the districts under the government of the Moluccas.

The inhabitants of Minahassa, more particularly those of the central plateau, differ much from those of all the rest of the island, and in fact from any other people in the Archipelago. They are of a light-brown or yellow tint, often approaching the fairness of a European; of a rather short stature, stout and well-made; of an open and pleasing countenance, more or less disfigured as age increases by projecting cheek-bones; and with the usual long, straight, jet-black hair of the Malayan races. In some of the inland villages of the plateau where they may be supposed to be of the purest race, both men and women are remarkably handsome; while nearer the coasts where the purity of their blood has been destroyed by the intermixture of other races, they approach to the ordinary types of the wild inhabitants of the surrounding countries.

In mental and moral characteristics they are also highly peculiar. They are remarkably quiet and gentle in disposition, submissive to the authority of those they consider their superiors, and easily induced to learn and adopt the habits of civilised people. They are clever mechanics, and seem capable of acquiring a considerable amount of intellectual education.

Up to a very recent period these people appear to have been thorough savages, and there are persons now living in Menado who remember a state of things identical with that described by the writers of the sixteenth and seventeenth centuries. The inhabitants of the several villages were practically distinct tribes, each under their own chief, speaking languages unintelligible to

each other, and almost always at war. They built their houses elevated upon lofty posts to defend themselves from the attacks of their enemies. They were head hunters like the Dyaks of Borneo, and were said to be sometimes cannibals. When a chief died his tomb must be adorned with two fresh human heads, and if those of enemies could not be obtained slaves were killed for the occasion. Human skulls were the great ornaments of the chiefs' houses. Strips of bark were their only dress. The country was a pathless wilderness, with small cultivated patches of rice and vegetables or clumps of fruit trees, diversifying the otherwise unbroken forest. Their religion was that naturally engendered in the undeveloped human mind by the contemplation of grand natural phenomena and the luxuriance of tropical nature. The burning mountain, the torrent and the lake, were the abode of their deities, and certain trees and birds were supposed to have especial influence over men's actions and destiny. They held wild and exciting festivals to propitiate these deities or demons, and believed that men could be changed by them into animals, either during life or after death.

Here we have a picture of true savage life, of small isolated communities at war with all around them, subject to the wants and miseries of such a condition, drawing a precarious existence from the luxuriant soil, and living on from generation to generation with no desire for physical amelioration and no prospect of moral advancement.

Such was their condition down to the year 1822, when the coffee plant was first introduced and experiments were made as to its cultivation. It was found to succeed admirably at from fifteen hundred up to four thousand feet above the sea. The chiefs of villages were induced to undertake its cultivation. Seed and native instructors were sent from Java; food was supplied to the labourers engaged in clearing and planting; a fixed price was established at which all coffee brought to the government collectors was to be paid for, and the village chiefs who now received the titles of "Majors" were to receive five per cent. of the produce. After a time, roads were made from the port of Menado up to the plateau, smaller paths were cleared from village to village, missionaries settled in the more populous districts and opened schools, and Chinese traders penetrated to the interior and supplied clothing and other luxuries in exchange for the money which the sale of the coffee had produced. At the same time, the country was divided into districts, and the system of "controlleurs", which had worked so well in Java, was introduced. The "controlleur" was a European, or a native of European blood, who was the general superintendent of the cultivation of the district, the adviser of the chiefs, the protector of the people, and the means of communi-

cation between both and the European Government. His duties compelled him to visit every village in succession once a month, and to send in a report of their condition to the Government. During these circuits, he lodged in the houses of the chiefs, who soon began to vie with each other in being able to entertain the "controlleur" handsomely. By the joint labour of the community, commodious houses were built in each village for the accommodation of strangers, and the chiefs, becoming comparatively wealthy by the receipt of their percentage on the coffee, furnished their houses in the European style and adopted European clothing. Disputes between adjacent villages being now settled by a superior authority, the old inconvenient semi-fortified houses were disused, and under the direction of the "controlleurs" most of the villages were rebuilt on a neat and uniform plan.

In order to give some idea of the present condition of these people, I must extract a few passages from the notes of my first excursion into the interior of Minahassa. I was accompanied by the controlleur of the district of Tondano. At six miles from Menado we reached the beautiful village of Lotta, whence a continual ascent for six miles more brought us on to the plateau of Tondano at an elevation of about two thousand four hundred feet. We passed through three villages whose neatness and beauty quite astonished me. The main road, which is much cut up by the bullock-waggons which bring down the coffee, is always turned so as to pass outside the village. The street can thus be kept neat and clean. It consisted of a narrow roadway with a broad border of turf on each side kept as neat and well cut as the drive up to an English villa. The houses stand back a few yards from the road and are separated from it by a neat hedge of roses, which in this delightful climate thrive luxuriantly and blossom all the year round, and are the more striking and beautiful to a European from coming upon him so unexpectedly. The cottages are built regularly and neatly of wood, raised about six feet on substantial posts generally painted light-blue, while the walls are white-washed. They all have a wide verandah in front, with a neat balustrade and steps. Before them are rows of orange trees, a few flowering shrubs or coffee bushes, and the inhabitants are all neatly dressed in light cotton clothing. The scenery around is in the highest degree picturesque and beautiful. Coffee plantations, regular, but luxuriant, alternate with rice fields and vegetable grounds; while wooded hills and volcanic peaks, clothed with noble tree-palms and tree-ferns, form a magnificent background. Much as I heard of the beauty of Minahassa, the reality already surpassed my expectations.

About one o'clock we reached Tomohon, a large village and the centre of an extensive coffee district, and dined at the house of

the "major", a native chief. Here was a fresh surprise for me. The house was large, airy, and most substantially built. Ornamental lamps hung from the ceilings. The chairs and tables were handsome and well made, of native woods and constructed by native and well-taught workmen. Madeira and bitters were handed round as we sat in the verandah, after the Dutch fashion; then two boys neatly dressed and with smoothly-combed hair brought water and clean napkins to wash our fingers. The dinner was excellent. Fowls cooked in a variety of ways; wild pig roasted, stewed, and fried; a fricassee of bats, with potatoes, rice, and several native vegetables. We had good claret and English beer, white china, finger-glasses, and fine napkins. Our host was dressed in black with satin waistcoat and well-polished shoes, and really looked comfortable and gentlemanly in them. The conversation was in Malay, and he did the honours very well. I staid here till the next day and had a little gem of a bedroom with blue and white gauze curtains, clean linen, and every convenience of civilisation. Yet my host's father, who was chief before him, wore a strip of bark for his whole clothing, and lived in a dark hut raised high in the air to defend him from the attacks of his neighbours.

In these villages the coffee plantations and rice fields are cultivated in common. The chief and a few of the old men decide what days in the week it is required to work in them, and a gong beats at seven in the morning to assemble the labourers. Men, women, and children work together at weeding, coffee-gathering, or rice-harvesting; an account is kept of the hours' work given by each family, and when the crop is gathered each receives his proportionate share. This system of public fields and common labour is one not uncommon during the first stages of civilisation, and wherever it exists, should be carefully maintained, as it offers great facilities for the introduction of new agricultural crops and new modes of cultivation. The people having been accustomed to this mode of growing their rice, readily adopted the cultivation of coffee in the same manner; and it is quite a mistake to suppose, as many do, that they are driven out to work at stated hours like slaves. They go out cheerfully to their labour along with their relations and neighbours; they have no taskmaster over them; and they work pretty much as they like under the general direction of their chief and the "controlleur". They are working, too, for themselves; the produce is all their own, and each family's share enables them to purchase luxuries and comforts which they formerly could never obtain. Time-honoured custom, the force of public opinion, and self-interest, combine, therefore, to ensure a regular attendance of workers in the coffee plantations; and, though I believe punishments are occasionally inflicted for neglect

of work, yet this is quite exceptional, and it is on the whole not correct to apply the term "forced labour" to this system of cultivation.

When I was staying at the little village of Rurukan, I lived opposite the school-house, which also did duty for the church, and I had a good opportunity of observing both teacher and pupils. The schoolmaster was a native educated by the missionary at Tomohon. School was held every morning for about three hours, and twice a week in the evening there was catechising and a lecture. The children are all taught in Malay, and, among other things, I could hear them daily repeating the multiplication table up to 20 times 20,—a task which few of our school-boys can perform. They always conclude by singing, and it is very pleasing to hear old familiar psalm tunes in these remote mountains sung with Malay words. Singing is one of the real blessings which European missionaries introduce among people whose native chants are so monotonous and melancholy as those of all savage nations; and these people seem to enjoy it, for it is a common thing to hear two or three of them singing together in their own houses.

On catechising evenings the schoolmaster is very great, preaching and teaching for three hours at a stretch (very much in the style of an English ranter) to an audience consisting of the younger people of the village. The missionaries have undoubtedly done great things in this country. In connection with the Government, whose policy has greatly assisted their labours, they have changed a savage into a civilised community in a very short time. Thirty years ago the country was a wilderness, the people naked savages garnishing their rude houses with human heads. Now it is a garden, worthy of its sweet native name of "Minalassa". Good roads and paths traverse it in every direction, some of the finest coffee plantations in the world surround the villages, interspersed with extensive rice fields more than sufficient for the support of the population. The people are now the most industrious, peaceable, and civilised in the whole Archipelago. They are the best clothed, the best housed, the best fed, and the best educated; and these results are attributable in a great measure to the system of government now adopted by the Dutch in their Eastern possessions. The system is one which may be called a "paternal despotism". Now, we Englishmen do not like despotism,—we hate the name and the thing, and we would rather see people ignorant, lazy, and vicious, than use any but moral force to make them wise, industrious, and good. And we are right when we are dealing with men of our own race, and of similar ideas and equal capacities with ourselves. Example and precept, the force of public opinion, and the slow, but sure, spread

of education, will do everything in time, without engendering any of those bitter feelings, or producing any of that servility, hypocrisy, and dependence, which are the sure results of despotic government. But the case is different when the governed are in an admitted state of inferiority to their rulers; and in the family and the school even *we* use a certain amount of despotism and believe it to be necessary, because we know that children and pupils are unable to decide for themselves what will be best for their permanent welfare. Children must be subjected to some degree of authority; they have to be taught many things, the use of which they cannot comprehend, and which they would not without some pressure take the trouble to learn. Habits of order, of industry, of cleanliness, of respect and obedience, are inculcated by authority as well as by example, and that which the adult and more intelligent portion of the community believe to be of the greatest importance in morals and manners, is forced upon the young and inexperienced by means which, however mild and persuasive, are still essentially despotic. The scholar and the apprentice are subjected to a mild despotism for the good of themselves and of society, and their confidence in the superior intelligence of those who ordain and apply this despotism, neutralises the bad effects and bad feelings which are in other cases its inevitable results.

Now, there is not merely an analogy,—there is in many respects an identity of relation between master and pupil, or parent and child, on the one hand, and an uncivilised race and its civilised rulers on the other. We know, or think we know, that the education and industry, and the common usages of civilised man, are superior to those of savage life; and, as he becomes acquainted with them, the savage himself admits this. He admires the superior acquirements of the civilised man, and it is with pride that he will adopt such usages as do not interfere too much with his sloth, his passions, or his prejudices. But as the wilful child or the idle schoolboy, who was never taught obedience and never made to do anything which of his own free will he was not inclined to do, would in most cases obtain neither education nor manners; so it is much more unlikely that the savage, with all the confirmed habits of manhood, and the traditional prejudices of race, should ever do more than copy a few of the least beneficial customs of civilisation, without some stronger stimulus than mere example.

If we are satisfied that we are right in occupying the country, and assuming the government over a savage race, and if we further consider it our duty to do what we can to improve our rude subjects, and raise them up towards our own level, we must not be too much afraid of the cry of "despotism" and "slavery," but must

use the authority which we possess to induce them to do many things which they may not altogether like, but which we know are indispensable to their moral and physical advancement. The Dutch have shown much good policy in the means by which they have effected this. They have in most cases upheld and strengthened the authority of the native chiefs to whom the people have been accustomed to render a voluntary obedience, and by acting on the intelligence and self-interest of these chiefs, have brought about changes in the manners and customs of the people, which would have excited ill-feeling and perhaps revolt had they been directly enforced by foreigners.

In carrying out such a system, much depends upon the character of the people, and the system which succeeds admirably in one place could only be very partially worked out in another. In Minalassa, the natural docility and intelligence of the race has made their progress very rapid; and how important this is, is well illustrated by the fact that in the immediate vicinity of the town of Menado are a tribe called Banteks, of a much less tractable disposition, who have hitherto resisted all efforts of the Dutch Government to induce them to adopt any systematic cultivation. These remain in a ruder condition, but engage themselves willingly as occasional porters and labourers, for which their greater strength and activity well adapt them.

No doubt the system here sketched is open to some objections. It is to a certain extent despotic, and interferes with free trade, free labour, and free communication. A native cannot leave his village without a pass, and cannot engage himself to any merchant or captain without a government permit. The coffee produced is all sold to Government at less than half the price that the local merchants would give for it, and they of course cry out against the monopoly; but they forget that without these restrictions on free communication and free trade, the product itself would never have existed, and the population, whose slavery they commiserate, would probably have been still savages.

The coffee plantations were established by the Government at a considerable outlay of skill and capital. Roads have been made, and education has been given freely to the people, and if in return for this outlay the Government claim the monopoly of the produce as the most economical and least oppressive mode of taxation, what right have we to cry out against them while we maintain a salt tax and an opium monopoly in India, neither of which can be shown to have been as directly instrumental in improving and elevating the people as this coffee culture of the Dutch has certainly been. Neither the monopoly nor the restrictions on freedom should be considered permanent, or as anything but a step in the march of civilisation; and it is satisfactory to know that

the present Dutch Government acknowledge this principle, and are steadily abolishing them; but, as a first step towards the civilisation of a savage race, the system and the mode in which it is here carried out, appears to me worthy of our most attentive consideration.

Competition and free trade are excellent things of themselves, and produce excellent results, but we do not think of turning out our boys and girls at twelve years old to get their own living and education by free competition in the world. It appears to me, however, that we do an equally unwise and unjust thing when, having obtained power over a country inhabited by a savage people, we expose them at once to the full tide of competition with our highly elaborated civilisation, and expect them to thrive under it. Who can doubt but that the New Zealanders were capable of improvement and civilisation under some system which, treating them for a while as children, should have educated and protected them. Instead of that we have brought them into direct contact with English wealth and energy, vigorously developing itself for its own ends, and the result must inevitably be, sooner or later, the extermination of the native race. In Ceylon and in India we have English capital largely invested in coffee and indigo culture, but can we point to any correspondiug improvement in the moral or social condition of the natives? In Java and in North Celibes, on the other hand, the population is steadily increasing, and is greatly improved in material and moral condition. The people get wealthy, and the Government obtains a large revenue without direct taxes, and at the same time is carrying on the education of the whole race towards a higher state of society. The system which produces such results I believe to be a good one, and I think that we should hesitate in applying the principles of free competition to the relations between ourselves and savage races, if we ever expect them to advance in civilisation or even to maintain their existence upon the earth.

NOTE. The effects of freedom of trade and free competition for labour in Western India, are thus alluded to by a writer in the *Times* of January 26th, 1865:—"Labourers are recruited (chiefly from the Madras provinces) by native sub-agents, who are paid so much per head for the labourers whom they can persuade to take the "bounty" (an advance of money which is subsequently recovered from their wages); these sub-agents itinerate among the villages, and as they have a direct pecuniary interest in the occupation, and as they are safe from contradiction, and the native imagination is fertile and the moral standard rather low, it is not difficult to set before the listener a picture of tempting brilliancy. Under such conditions, gross deception and bitter disappointment must be rather the rule than the exception, when recruiting is carried on among a very ignorant and credulous population. One such instance came under my own observation a few months ago. A gang of about ninety labourers, who had been taken to Ceylon from one of the northern districts of the Madras Presidency, were

placed upon a plantation in the interior of the island. Whether the labour was new and strange to them, or the conditions of their employment such as they had not been led to expect, or from some other cause, these men absconded in a body, and were, in consequence of this breach of agreement, captured and imprisoned. The cholera broke out among them, and, when the order for their liberation was received, not more than half the number survived, and these were seen in miserable plight endeavouring to reach the coast.

"Now, sir, without attempting to throw the blame of this occurrence on any particular person, it can scarcely be said that these men left their native villages with a clear understanding of the nature and conditions of their future employment; such misconception might result from their own stupidity, but it should be a warning of the cruel fate to which the most ignorant, and therefore the most helpless, part of the population may be exposed under the so-called emigration system."

In Cameron's work on *Malayan India*, he alludes to the effect produced on the barbarous aborigines of the Malay peninsula by their contact with the semi-civilised Malays, an effect exactly analogous to that of our own rough settlers and traders on the natives in many of our colonies. Mr. Cameron says:—"The meeting of the two peoples has proved an unfortunate one for the aborigines; for wherever the contact has taken place, it has introduced among them tastes to which they were formerly strangers, but which, when once acquired, they cannot control. To satisfy these, they regardlessly place themselves under a bondage of debt, which in many cases ends only with life. In their dealings with these child-like people, the Malays are most unscrupulous, and practise all sorts of imposition; but the aborigines, though conscious of their own simplicity, and alive to the roguery they suffer, are yet too honourable to throw off obligations into which they have voluntarily entered, no matter by what deceits they were induced to do so."

## VII.—*On the so-called Celtic Languages in Reference to the Question of Race.* By JOHN CRAWFURD, F.R.S.

[*Read April 26th*, 1864.]

THERE exist two living European languages which, going under the common name of Celtic, are usually believed to be one tongue, or at least sister languages of one origin and spoken by the same race of man. There are, on one hand, the native language of Ireland and of the mountainous part of Scotland, which are beyond doubt essentially the same; and the native language of Wales and Brittany, which are equally sister tongues. I have long been of opinion that the two languages in question are really different and distinct tongues, and having made such inquiry as was in my power, with the view of determining the question, I propose to state the result in the present paper. The qualifications which I bring to this task are soon told. One of the two languages, the Gaelic, was the language of my childhood (I still retain some colloquial acquaintance with it), and of the languages of some oriental nations, probably in as advanced a state when their tongues took their present shape as were the Welsh and Irish when theirs did so.

In order to determine the consanguinity of languages, the first thing necessary is to find a test by which consanguinity can be certainly determined, and I think this is not a matter of much difficulty. The test which I would apply would be the following. When between two or more languages there is a substantial agreement in phonetic character, in grammatical structure, and in the great body of their words, such languages may confidently be pronounced to be cognate tongues, or languages having a common parentage.

The words which seem to me most distinctly to prove languages to be cognate, are prepositions, auxiliary verbs, and conjunctions, adverbs of time and place,—those parts of speech, in fact, which form the links of language, and without which sentences cannot be constructed. When these are essentially the same in any two languages, these languages may be pronounced at once as sister tongues; while, when they differ, they may with equal confidence be pronounced as different tongues, or of different origin, although they may contain many words in common. All the words referred to are in English, of German origin, and none of them of Norman French. The same class of words in the French, the Italian, and the Spanish, are of Latin origin. Such a French particle as 'sans'

was at one time introduced into our language, but it was expelled as an intruder.

When a language can be spoken or written in words of one tongue out of several which enter into its composition, that language will be found to be its parent, and the rest of its words but subsidiary. Our own language, although at least one-sixth part of our dictionary be French, can readily be written without a single French word, while it is impossible to write a sentence of it with French words only. It is the same with all other tongues, into the composition of which two or more foreign elements enter. The languages of Southern Europe all contain a considerable admixture of Teutonic words, but they are written easily in words derived from Latin without their assistance, while it is impossible to construct a single sentence of them with words purely Teutonic.

The same rule extends to the oriental languages. The Persian language may be written without a word of the large infusion of Arabic, which now forms an integral part of it. The *Shah Nameh*, or Book of Kings, the greatest work in the language, although written three centuries after the Arabian conquest of Persia, and long after the Persians had adopted the religion and literature of the Arabs, is said not to contain a word of Arabic. All the cultivated languages of Hindustan contain more or less of Persian, with its adopted Arabic; and the Hindi, or current language of Upper India, a great deal. Yet this last can be written, and, as an experiment, has actually been written, with the exclusion of Persian and Arabic.

The languages of Southern India, which, in sound, in form, and in the majority of their words, have no affinity with the languages of Northern India, contain a considerable amount of Sanscrit; but can, notwithstanding, be written, omitting every word of that language. The most cultivated languages of the Malay Archipelago contain a good deal of Arabic, and more of Sanscrit; but they can be written easily without their Arabic, and, without much difficulty, without their Sanscrit element. The principal languages of the Philippine Islands differ essentially in sound, structure and words, from the neighbouring Malay languages, yet contain a very considerable infusion of Malayan words: they can however, be spoken or written without the help of the latter. In all the cases thus enumerated, there is no difficulty in deciding which portion of a language is primitive and fundamental, and which adventitious; and in several of the examples adduced, history aids us in deciding.

Our own literature affords abundant examples of the facility with which sentences may be constructed without the help of the French element of our language. That element, however, is so considerable in amount, and so indispensable to the perfection of

our speech, that it is difficult to find passages of any length without words of it. I give the two following well-known passages from Shakespeare as examples:

"*Pandulph.* Lady, you mutter madness, and not sorrow.
*Constance.* Thou art not holy to belie me so;
I am not mad: the hair I tear is mine;
My name is Constance; I was Geoffrey's wife.
Young Arthur is my son, and he is lost:
I am not mad; I would to heaven I were!
For then 'tis like I would forget myself:
O, if I could, what grief should I forget!"
*King John*, act iii, scene 3.

In this passage there are but two words which can be suspected to have come from Norman French, *name* and *grief*, and they probably belong equally to the Anglo-Saxon. The second passage contains no word which can even be suspected to be of French origin:

"*Griffith.* His overthrow heaped happiness upon him;
For then, and not till then, he felt himself,
And found the blessedness of being little."
*King Henry VIII*, act iv, scene 2.

The proportion of Norman French in our vocabulary is usually reckoned at one-sixth part, or five-sixths of our language is of German origin; although in use, from the nature of the words of the latter, the proportion is much greater. I believe the proportion of French words in our language has not materially altered in the lapse of near five centuries, or since Chaucer wrote. It should be remarked that it is by no means indispensable to the efficacy of the test referred to, that a sentence should be grammatical. It is enough that all the words necessary to its construction should be of one language.

Tried by the test which I have now endeavoured to describe, the Gaelic and Welsh languages will be found to be, not sister tongues, derived from the same parent, as are Italian and French, but two distinct languages. Their particles and auxiliaries are all wholly different. The phonetic character of the two languages differs very materially; and with the exception of a comparatively small number, their words are wholly different. I shall endeavour to compare the two languages under these three heads.

The Gaelic and Welsh languages are both written in the Roman alphabet, and in some modification or another of it must always have been so. The Irish, it is true, have sometimes laid claim to the invention of indigenous letters; but it is certain that before the introduction of Christianity and its literature, they were as unlettered as the cannibals of New Zealand. With the exception, indeed, of the people of Greece and Italy, and perhaps the Scandi-

navians with their Runes, no nation of Europe had invented an alphabet of its own; in striking contrast with the people of Asia, many of whom, as rude in other respects as the ancient Britons and Irish, were yet possessed of the art of writing, their own special and independent inventions.

An alphabet which, like the Roman, was invented to represent the sounds of a single language (the Latin) could not be expected to represent faithfully the multifarious languages of Europe, most of which are phonetically so fundamentally different from it; and to no European tongues does this more cogently apply than to the Gaelic and Welsh. The many sounds of the Gaelic as it is written, are represented by no more than eighteen characters, five of which are vowels, and thirteen consonants, including in the latter the aspirate. But while the characters are few, the sounds are many,—the vowels amounting to eighteen, and the consonants to twenty-four. The Welsh alphabet consists of twenty letters, of which seven are vowels and thirteen consonants; but the actual sounds reach to thirteen vowels, and the consonants to twenty-four.

Even in the matter of sound, in which particular the two languages certainly make the nearest approach, there is much disparity. In the Welsh language there are three consonant sounds unknown to the Gaelic. These are the two English sounds of *th*,—the unaspirated in the words "this" and "that," and the aspirated in the words "think" and "thanks," with the double *ll*. The last is thus described by a Welsh grammarian: "This letter," says he, "represents a sound said to be peculiar to the Welsh language. In pronouncing it the tongue assumes the same position as in forming *l*, and the breath is finally propelled on each side of the tongue, but more on one side than the other." The learned author's precept is not likely to be practised to any effectual purpose by a stranger; and indeed, it is broadly asserted by Welshmen that the genuine sound is never attained except by those who have acquired it in childhood.

The Gaelic has also sounds unknown to the Welsh. These are a double *ll*, which, as far as I can make out, does not materially differ from the same sound expressed by the same characters in Spanish, as in the word "llana,"—a plain and peculiar guttural, which, if not the same, closely resembles in sound that of the nineteeth letter of the Arabic alphabet. Both these, united by a peculiar vowel, are found in the Gaelic monosyllable which is the name for a calf. This is written, or ought to be written, "llegh," and its true pronunciation is a puzzle to all who do not acquire it in infancy. The word is not improbably taken from the voice of the calf; and that its last letter resembles in sound that of the Arabic one with which I have compared it, may be inferred from

the directions for its pronunciation given by the celebrated orientalist Meninski, who, to accomplish it, instructs the learner to imitate the voice of a calf calling to its dam.

There is one characteristic which is supposed to belong specially to all the languages called Celtic, and to distinguish them from all other tongues. This consists in changing certain of the consonants for others, or even altogether eliding them, according to the position of such consonants in a word. For this purpose, Irish and Welsh grammarians have divided the consonants into what they call radicals and aspirates; the first being such as are not amenable to the conversion in question, and the last those which are subject to it. The process is known under the name of aspiration; but as the converted letters are not necessarily, and indeed hardly in any case at all aspirated, a more inaccurate term could not well have been employed; and one only wonders, indeed, how it ever came to be employed. In writing the two languages, the practice has been to annex the aspirate, or letter *h*, to the converted or elided letters; but in this case it is simply as an orthographic mark, and it seems to be this mere accident which has given rise to the improper term "aspiration." The Irish, in their printed works, have lately substituted a dot over the converted letter; but the Scots and Welsh still persevere in using the *h*, so that with them a written word may sometimes consist of many more letters than it has elemental sounds.

Besides the employment of the aspirate for the purpose now stated, it is also used in combination with other consonants to represent sounds for which the Roman alphabet has no representative character. This employment of the aspirate as a mere orthographical mark, is by no means confined to the Gaelic and Welsh languages, for it extends to our own and other European languages. The combinations *ch*, *gh*, *sh*, and for which, in the oriental alphabets, there exist distinct characters, are examples.

The practice of commuting or eliding consonants is more frequent in writing the Gaelic and Welsh languages than in other written tongues, but is very far from being a distinctive character of them. In our own language and in the French there are abundant examples where, as Sir Cornwall Lewis observes, "the letters of a word, instead of representing the true sounds of the voice, the word itself becomes an arbitrary symbol of the sound." The Scottish Gaelic was not, however, always so written; for we find by the book of the Dean of Lismore, dating A.D., 1511, that it was written in a phonetic alphabet. In later times, however, the example of the Irish, who certainly carried the cultivation of the language to the greatest extent, has been followed in Scotland.

The only theory which it appears to me will account for the

discrepancy between the written and spoken Gaelic and Welsh, is the supposition that, when they were first committed to writing, they were pronounced as we now find them written. Before the Irish and Welsh were taught by strangers to write, they were unquestionably in a very rude and barbarous state; and we can readily believe that their languages must have partaken of their own ruggedness and barbarism. In such a rude state their languages were first committed to writing, and the practice, which has its convenience for etymology, was continued after the languages had attained a certain measure of refinement, and ceased to be pronounced as when first written. In writing, the Irish and Welsh have, in fact, pursued a course the very reverse of that followed by the other nations of Europe, who, in proportion as their languages have been refined, have departed more and more from the original pronunciation and orthography. If nations of the south of Europe had, in writing their languages, followed the practice of the Irish and Welsh, they would, as nearly as possible, have preserved the Latin orthography; their grammarians dividing their consonants into immutables and mutables, or, as the Irish call them, radicals and aspirates; and in their grammars we should have directions for commutation and elision.

The changes which foreign words adopted by the Gaelic and Welsh are made to undergo, sufficiently corroborate the view thus taken of the question of mutation. A few examples may be given, and I take them from the Irish Grammar of Donovan. The Latin verb to write, *scribo,* is written, and no doubt must have been once pronounced *scrib,* which is the original word, with the elision of the final vowel. In modern Gaelic the letter *b* has in the Irish a dot over it, and in the Scots is followed by the aspirate, both being signs that the letter is a commuted one, and converted into a *v*,—a sound for which the imperfect Gaelic alphabet has no special representative. The Latin word *sagitta,* an arrow, was written, and it may be presumed, pronounced in old Irish, *sagit;* but in modern Gaelic, the orthography is *saigead* by the Irish, and *saigh* by the Scots; while the pronunciation, through the elision of the *g,* and the change of one dental for another at the end of the word, becomes *said.* The Latin *capra,* a goat, was, in the old Irish orthography, written *gabr,* and so no doubt pronounced. Here we have one guttural converted into another, and one labial into another, but they are not marked as commutable, letters. In modern Gaelic the letter *b* is marked as a commutable, but is in fact elided; so that in pronunciation, the word, which is pronounced *goär,* becomes but the mere shadow of the original Latin one. In Welsh, the Latin *capra* becomes *gafr,* and in Breton *gwwr,* the last expressing very nearly the Gaelic pronunciation.

The improved orthographic system adopted for the Breton or Armorican, affords further corroboration. The convertible letters are the same as in the Welsh and Gaelic, and in French are called *lettres mobiles,* or movable letters. These are represented by characters which express their actual sounds, while grammatical rules are given for their commutation in composition. Hence the Armorican alphabet, instead of consisting, like the Gaelic and Welsh alphabets, of twelve consonants, has no fewer than twenty. In this system, *k* is substituted for the ambiguous *c*: *q*, which does not exist at all in the Welsh and Gaelic, is added; but *h* is not included in the number; for in the Breton it is not sounded, but preserved only for etymology; while *w*, which is called a vowel, is really a consonant, having the sound of the same letter in English.

The object of the commutation in the Armorican orthography is clearly described in the grammar prefixed to the celebrated Dictionary of Le Gonedec, which is of the same authority for the Breton as that of the Academy for French. "Usually," says the author, "the letters are changed from strong to weak, for softening the pronunciation. Sometimes, however, the change is from weak to strong, for the purpose of distinguishing two words of the same sound, but of different meanings, from each other."

It must not be forgotten that ample time for great changes has elapsed since the Irish and Welsh languages were first committed to writing. The time at which this took place—probably the fourth century—preceded that in which the languages derived from Latin were first committed to writing in the countries of Southern Europe, for the Latin long lingered as the written one.

It is, finally, to be observed on this subject of mutation, that the commutable consonants are not identical. In the Gaelic they are *b* (always hard); *d* (dental); *f*, *g* (hard); *m*, *p*, *s*, and *t* (dental). The Welsh wants the *f* and *s*, and adds its peculiar double *l*.

I come next to the evidence of grammatical structure as a test of the affinity of languages, so much relied upon of late by learned Germans. It is by this test chiefly that they come to the very startling conclusion that the leading languages of ancient and modern Europe have all sprung out of a dead language of India; or yet more extravagantly, from a language of the highest table-land of Central Asia, of which the very name and locality are pure myths. The corollary follows, that all the races speaking them—black, brown, and fair, the Celts included—are of eastern origin. I have on former occasions expressed my disbelief in the validity of this test, and will take this opportunity of briefly recapitulating a few of the arguments which have led to my dissent from so wild an hypothesis.

All the languages of America—and those who have endeavoured

to reckon their number have estimated them at above 1,200—have a common grammatical structure—one which distinguishes them from all the other languages of the world. This, adopting the German test of affinity, ought to prove that all the American languages had one common origin; but the theory is at once demolished by the crushing fact that, with the exception of the languages of a few neighbouring tribes and nations which have borrowed a small number of words from each other—the vocabularies of the numerous languages in question are wholly different. An agreement in grammatical structure is, therefore, in this case, no evidence of affinity of language, nor does it even go to prove affinity of race. With one material exception, all the inhabitants of America—continental and insular—are usually admitted to be of the same race of man. But the Esquimaux—a wholly distinct race from all the other people of America—speak a language of the same peculiar grammatical structure as the languages of the Red Man, the same disagreement in its words existing as in the latter.

From the eastern borders of Bengal to the utmost eastern limits of China, the numerous languages spoken, are, without an exception, monosyllabic, or their words consist of single syllables, which necessarily admit neither of inflection nor composition. They are, therefore, unavoidably of the same grammatical structure. But the words of these languages are wholly different, even when the race of man is the same; and of the races of man there are at least two clearly distinct ones, the Chinese being an example of one, and the Burmese and Siamese of the other.

The many languages of the Malayan Archipelago, excepting those spoken by the negro race, have a common grammatical character. Their phonetic character is alike, and their structure has the same fashion; but the great body of their words is entirely different; and when they happen to be common to any of them, we know to what sources to trace their origin, and this almost as surely as we can the Norman-French in our own language. In spite, then, of a common agreement in structure, and even of a more or less admixture of words—a result inevitable in a region in which, from its physical geography, intertribal communication must immemorially have been frequent—the languages of the Malay Archipelago must be considered as separate and distinct tongues, and indeed, it may be added that there hardly exists in this region such a thing as a mere dialect.

A similar conclusion is arrived at from an examination of the languages of the neighbouring Philippine Archipelago. These, with the exception of the Negrito languages, agree in phonetic character and grammatical structure, and both are quite peculiar. Here, too, there is a considerable intermingling of each other's words from the same cause as in the Malayan Archipelago, yet

leaving the great body of the words of each language peculiarly its own. There is also some admixture of Malayan words, but we know them, by their mutilated form to be strangers, and can trace them to their foreign sources.

If we go to the islands of the Pacific Ocean we there find an example of one wide-spread language, in which phonetic character, grammatical structure, and vocabulary all agree, and where the differences are merely dialectic, while the race of man is one and the same. An accordance in grammatical structure alone would here not be sufficient to prove an affinity of language, still less of race ; but the first of these, at all events, is attested by an agreement almost identical in words. The language referred to has no general name, each group of islands having one peculiar to itself. From its wide expansion, however, European writers have named it the Great Polynesian. Within the Northern Pacific, with the single exception of the Sandwich group, this language is unknown, and a variety of tongues prevail, the only link which connects them consisting in a small admixture of Malayan words, found also in all the dialects of the Great Polynesian. Yet here the race of man seems throughout to be one and the same with that which speaks the Great Polynesian, the various Negro races of the Southern Pacific being wholly absent in the Northern.

The facts now stated must, I think, be admitted as proof sufficient that the boasted test of an agreement in the mere structural form of languages is inadmissible as evidence of affinity. By it, notwithstanding, I proceed to compare the Gaelic and Welsh languages. These two tongues have each one article only, the definite, but the terms which express it are wholly different. The nouns of the two languages agree in being all masculine or feminine, and by the absence of a neuter gender. The plural number of the noun is formed in an entirely different manner in the two languages. The Gaelic noun has three cases formed by inflections of the nominative, namely, a genitive, a dative, and a vocative. The Welsh has no cases formed by inflection, or other change in the nominative, and relies on prepositions to express relation. The prepositions which express relation in the three languages are entirely different words. The Gaelic adjective undergoes changes in gender, number, and case to agree with the noun, but the Welsh adjective does so only as to gender and number. The manner of forming the degrees of comparison in the two languages differs wholly. The pronouns of the two languages are expressed by words wholly different.

The verb in the two languages differs essentially in formation, as the following examples will suffice to show. The Gaelic verb has four moods, an indicative, a conditional, an imperative and an infinitive. Its indicative has five tenses, a present, a consuetudi-

nal, a present perfect, a consuetudinal perfect, and a future. The Welsh verb seems, on the whole, to be more perfect than the Gaelic: it has but three moods—an indicative, an imperative, and an infinitive; but its indicative has no fewer than six tenses—a present, a preterite, a preterimperfect, a pluperfect, and a first and second future. It wants the consuetudinal tense of the Gaelic, which signifies that the action is in the custom or habit of being performed.

The substantive verb and the auxiliaries of the two tongues are represented by terms entirely different. The manner of forming verbal nouns in the two languages is also different.

It has been stated that the formation of compound words by the help of prepositions and postpositions is a distinguishing characteristic of all the languages called Indo-Germanic, or Aryan, and among these as a derivative of the Sanscrit have been reckoned the Gaelic and Welsh. No such manner of compounding words is known to either of these languages, and, therefore, in so far as this character is concerned, they are not of the pretended class in question.

I come, finally, to the glossarial test, which, in a comparison of languages, must ever be the most complete and satisfactory. I have compared, with all the care I could command, the Irish dictionary of O'Reilly, with the Welsh of Spurrell. The first contains better than 50,000 words, and the last above 33,000; and in this multitude I could discover not more than 200 which were common to the two languages. In nearly every case of these there was a difference in the form of the words in the two languages, and this, independent of the factitious difference arising from disagreement in their orthographic systems. Occasionally, indeed, there is a variety, even in the meaning attached to the same word in the two tongues. A more important fact is, that the word common to them seldom stands alone, being in fact but one out of one or more synonymes.

I cannot pretend that all the words common to the Gaelic and Welsh are included in the number I have stated, for no doubt some have escaped my research. All I wish to assert is, that the number is comparatively small, and is far from furnishing evidence of the two languages being sister tongues, and of a common parentage.

Taking the Welsh vocabulary for an example, the Gaelic words in it will not exceed one word in 166. The English language, it is needless to insist, contains an incomparably larger proportion of Latin words directly or indirectly introduced; the French, Italian, and Spanish languages a much greater proportion of Teutonic words; even the Spanish, at least as many Arabic words. But we know, historically, the real origin of all these languages—

know the English to be of Germanic origin, the languages of the South of Europe to be derived from the Latin, while the other elements of all of them are extrinsic.

The Malay and Javanese languages—and I refer to these as having been the special objects of my own attention—contain, the Malay, a greater, and the Javanese a far greater number of Sanscrit words than does the Welsh of Gaelic, or the Gaelic of Welsh words; and this, too, in a far clearer and more perfect form than do the words common to these two tongues.

With respect to the class of words common to the Gaelic and Welsh, they seem to me to be such as we can readily believe would gain admission into the languages of neighbouring people; and the probability is that they proceeded from the language of the more advanced and powerful to that of the least advanced and weakest. Such infusions are well known to have taken place among rude nations in other parts of the world, where intercourse was far more difficult, and the two British islands cannot be supposed to be an exception. The words common to the two indigenous British tongues are of a very miscellaneous character, but they are never such as are indispensable to the structure of language, while both tongues can be written or spoken without their assistance.

For illustration, I will refer to the names of plants and animals, indigenous or of foreign origin, immemorially acclimated or domesticated. To begin with plants: the name for oats is essentially the same in the two languages, and seemingly native. For barley, the names in the two languages are different, and native in both cases; but the Welsh for a synonyme has the Anglo-Saxon term. The name for wheat, apparently native, is different in the two tongues. That for rye is from the Anglo-Saxon in Welsh, but from Latin in the Gaelic. The name for the pea in both languages is taken from the Latin: for the bean, it is native in Gaelic, and taken from the Latin in Welsh.

For the oak, the Gaelic has but one name, but the Welsh three, one of which seems the Gaelic one in an abridged and imperfect form. For the ash, the elm, the fir, the alder, and the willow, each of the two languages has its own native name or names. In both languages the names for flax and for hemp are taken from the Latin, without any native synonyme. The heath, the fern, and the moss have different names in the two tongues. The sole Gaelic name for peat extends also to the Welsh, which, however, has besides, its own native name.

With respect to the domesticated animals, it seems not improbable that several of them were indigenous both in Ireland and Wales, and that they were domesticated by the native inhabitants in times far beyond the reach of history, or credible tradition.

This is, indeed, implied by their names. In Gaelic, the cow has a native name, and the Welsh the same word; but the Gaelic alone has a name taken from the Latin. It is singular that in neither language is there a native name for the bull, for in both it is taken from the Latin, although the Welsh adds the Saxon word, with considerable corruption, as a synonyme. The name for the calf is native, and the same in the two languages—a monosyllable of impossible pronunciation to a stranger. The name for the steer is native, and different in the two languages.

The generic name for the horse is native, and the same in the two languages; but the Gaelic has also two synonymes taken from the Latin, although one of them is generally restricted to the mare, which, however, has also its native name. As with the bull, there is no name for the entire horse, unless an epithet; and, indeed, the Gaelic has adopted the Saxon word. The absence of a specific name for the bull and entire horse most probably arose from the carelessness of a barbarous people to the improvement of their cattle. The cattle of our remote forefathers were most probably multiplied without selection of sires, as are now the ponies of Shetland and the Hebrides, the wild cattle of the American Llanas, and cattle of every description—the camel included, among nearly all the eastern nations.

For the hog, the same native name prevails in the two languages; while for the boar and pig, the names, although native, are wholly different. The only name for the goat in Gaelic is taken from the Latin; but the Welsh has, besides, two native names. The name for the kid is the same in the two tongues. May it not be inferred from these facts that the goat was indigenous in Wales but not in Ireland; and that the probability is that it was introduced into the last of these countries, in its domestic state, by the Romish or other missionaries, whose language was Latin, or a derivative from it. The sheep and the ram have distinct native names in the two languages; but for the lamb, in both the term is Latin,—traceable, I have no doubt, to the well-known Scriptural simile. For the dog, the Gaelic has a native name, and also one supposed to be derived from the Latin. The Welsh has only the last of these. In both languages, the half-domesticated rabbit—a foreigner in these islands—takes its name from the Latin; implying, no doubt, its introduction by Roman agency.

All the wild indigenous mammalia will be found to bear different names in Gaelic and Welsh. This applies to the deer, including the doe and fawn; to the roe, the hare, the fox, the wolf, the polecat, the weazle, the stoat, the seal, and the whale.

Among birds I can discover but one—the goose—which has the same name (a native one) in the two languages; and but one also which takes its name from the Latin;—this is the pigeon, which

in both tongues is a corruption of the Latin *columba.* It is beyond question that the blue-rock pigeon, the source of all the varieties of the domestic bird, is indigenous in the British islands, and therefore must have had a native name superseded by the Latin one. The probability then is, that it was the Roman monks or missionaries who first made the Irish and Britons acquainted with the domestic pigeon. A similar adoption of foreign names for indigenous birds has taken place in the English language itself on a far larger scale, as in the instances of the partridge, the plover, the eagle, and the falcon.

Among fishes I cannot discover one that has a name common to the two languages, whether they be of the sea or of fresh water. Our choicest fishes, the salmon, the trout, the turbot, the dory, the sole, the mullet, which have Norman-French names in English, to the loss of their Saxon ones, have their distinct and separate names in Gaelic and in Welsh. It is remarkable that, although the Welsh have a native name for the turbot, the Irish and Scots Gaelic has no other than a corruption of the French word; but the fish is not frequent on the Scots or Irish coasts, and it has been only within the last fifty years that some turbot-banks have been discovered on them,—evidence of unskilfulness on the part of the Irish and Highland fishermen. With one exception, it is the same with reptiles; the exception being the serpent, the Gaelic name of which appears as a synonyme in the Welsh; which, however, has besides two native names of its own. So it is with crustaceans, and even insects, for all of which the names are different in the two languages.

I may here notice that French, as well as the majority of English writers have adopted the theory of the unity of the two languages which I am now endeavouring to show are distinct tongues. In an elaborate dissertation prefixed to the Breton Dictionary of Le Gonedec, the last edition of which is of as late a a date as 1847, the writer makes this attempt, in my opinion, very unsuccessfully. As evidence of what he considers but mere dialects of one language, he produces a number of words which he finds to be substantially the same in the Breton and Welsh on one hand, and in the Irish and Scots Gaelic on the other. In so far as concerns the small number of words which are common to the two languages, the author is, of course, successful; but not confining himself to those, he adduces a number belonging to the Breton and Welsh, but which have no existence at all in the Gaelic of Ireland or Scotland. He does even worse than this, for he brings forward as evidence of unity the words which the two languages have equally derived from a common source, the Latin; and among these are to be found the numerals, with the names of

the days of the week, the Latin origin of both of which is beyond all question.

Among the proofs brought forward in favour of a common origin of the Welsh and Irish languages, are the names of ancient places in France and England, in parts of those countries where both tongues have long been superseded by foreign idioms. Such names, however corrupt in form, are still clearly traceable to one or other of the two languages in question. Sometimes the names of such places are composed of words common to the two languages, while in others we find them to consist of Welsh words unknown to the Gaelic, or of Gaelic unknown to the Welsh. It is the same with the modern names of places in Wales and Brittany, and in Ireland and the Highlands of Scotland; in all of which, however, the great majority of the names of places consist of native words. All this would seem only to prove that in the remote and unknown times when the names of ancient places were imposed, there existed, as now, some words common to the two languages.

If the facts and arguments adduced in the course of this paper are admitted, we must come to the conclusion that the Gaelic of Ireland and Scotland, with the dialect of the Isle of Man, on one hand, are the same language; while the Welsh and Breton, with the now extinct Cornish, are essentially the same on the other; the two classes of languages being essentially separate and distinct languages, a small number of words only being common to them, and these never so essential but that either tongue may be spoken or written without recourse to them.

Granting this to be the case, it will naturally be asked, how it comes that nations speaking the same languages are found on the opposite sides of two straits of the sea, the one the British and the other the Irish Channel, while the two languages contain some words that are common to them? A satisfactory answer to this question would require more archæological knowledge than I can command: perhaps, indeed, more knowledge than the obscurity of the subject will admit. I shall, therefore, chiefly rely on such internal evidence as the languages themselves furnish.

Britain and Ireland, like all other great islands, must have had their own distinct and peculiar aboriginal inhabitants before strangers, by conquest or colonisation, settled in them. In modern, and therefore authentic times, the Asiatic islands of Java, Sumatra, and Luconia; the Austral islands of Australia, New Guinea, and New Zealand; the American islands of Hayti and Cuba; and the African island of Madagascar, were all found inhabited by a peculiar people, speaking distinct languages. The British islands then, it is to be inferred, could not be without aboriginal inhabitants, unless we suppose them to be an exception to a universal

rule. What the languages spoken by these aborigines were, is unknown and unknowable, except in so far as we may suppose them to be the same with those still spoken by their descendants, under the modern names of Welsh and Irish.

To begin with Britain. When, through the Roman invasion, its inhabitants first became known to the civilised world, near two thousand years ago, they were certainly very rude barbarians, but they were not savages; for men in possession of cattle, of iron, and brass, and who cultivated corn, could not be called savages. But they seem to have been ignorant of textile fabrics, and were clothed in the skins of wild beasts, while they were wholly unacquainted with letters,—an ignorance, however, which they shared with the people of the neighbouring part of the Continent; indeed, with those of all Europe, the inhabitants of Greece and Italy excepted.

What language or languages were spoken in Britain when it became known to the rest of the world, is not told; for both Greeks and Romans, not sharing the curiosity of modern Europeans on this subject, have given us no information. Our earliest and most authentic knowledge of Britain and that portion of the Continent which had intercourse with it, is derived from the *Commentaries* of Cæsar. Gaul was in Cæsar's time divided among three different people, exclusive of those of the Roman Province, and these speaking three different languages. Of the three nations, two only—the Celts and the Belgians—have any reference to the present question. The Celts, the most numerous, and occupying the most extensive territory, reached from the Garonne to the Seine; while the Belgi occupied the space from the latter river to the Rhine, including part of modern France and all Belgium. Cæsar tells us that Belgian colonies occupied a considerable portion of the west of Britain in his time, the colonists preserving even the names of the cantons of their mother country. There can be little doubt but that the Celts must have done the same; and Tacitus tells us that the Britons directly opposite to Gaul had the same manners and superstitions with the Gauls,—that is, with the Celts,—and differed but little from them in language. If such were really the case, the people of the west, in the time of Cæsar, and of Tacitus (not very remote from it) spoke two languages, the Belgian and the Celtic. Now, if we suppose the Celtic to be the same with the language of which a remnant has been preserved to us, through the inaccessibility to conquest of the mountainous Brittany, it would follow that the language of a considerable portion of the inhabitants of the Britain of Cæsar and Tacitus spoke Breton or Welsh. According to this view, Britain received colonies from Gaul, and not Gaul from Britain. But it received also Belgian colonies; and if, as is generally believed, the Belgians

were a Teutonic people, a German tongue must also have been introduced. What language was spoken by the wild people of the interior of Britain, by men represented as clothed in skins, and living on flesh and milk—a people nearly in the hunter state—is of course unknown. But it is certain that both the Belgians and the Celts must have been a more civilised, and therefore a more powerful people than the natives of the interior; for this is to be inferred from the very fact of their seizing land and forming settlements. The Belgians, the most warlike of the people of Gaul, seem not to have been the only Teutonic people settled in Britain; for Tacitus, judging by their physical form, is disposed to think that the Caledonians were so. The invasion of Britain by Scandinavian tribes, and their settlement in Britain, which was of such frequent occurrence for many centuries after the time of Cæsar and Tacitus, it is not unreasonable to believe must have often taken place for many centuries before it; and if this were the case, Britain would have been occupied, besides its own aboriginal inhabitants, with two foreign races,—the one speaking a Germanic and the other a Celtic tongue. All ancient migrations, it may be added, appear to have been directed on Britain, and none to have proceeded from a country now distinguished beyond all others for emigration.

With regard to Ireland, one race, speaking one language, the Gaelic, seems to have pervaded the whole island up to the comparatively recent invasion of Norman-French and Saxons. The fact of the extension of a single language over so wide a country would seem to prove that the people of Ireland, two thousand years ago, were in a more advanced state of society than at least the aborigines of Britain. This fact is the same as that from which we infer that the people of Madagascar, as we really find them to be, are more advanced in civilisation than the tribes of the opposite coast of the continent of Africa. As in Britain, Northmen made in Ireland repeated incursions on its coasts, but no permanent settlement or conquest as there. The Romans, so long in occupation of the greater part of Britain, never attempted the conquest of Ireland,—an enterprise, from the remoteness of the island, too difficult to undertake. Irish antiquarians speak confidently of Spanish colonists, but certainly there is no satisfactory record of them whether as to race or language; and it must not be forgotten that the ancient inhabitants of Spain were by no means an enterprising people, and that if they undertook expeditions to Ireland, it is what they never did to any other country.

Ireland, in possession of a more extensive territory and a more fertile soil than the adjacent parts of Britain, it is reasonable to believe would attain an earlier civilisation than these; consequently possess more power, and engage sooner in foreign enterprises and

conquests. It was probably, therefore, the source of the extension of the Gaelic language to neighbouring countries; or, in other words, the original country of the Gaelic language. As far as history reaches, however, the same language was found to prevail over the mountainous part of Scotland, including the Hebrides, and extending south as far as the Friths of Clyde and Forth. Dates have even been assigned to the times in which the emigrations took place, as, for example, one of A.D. 258, and another of 503, handed down, of course, on Roman authority, for they could not have been derived from a rude people who knew neither epoch nor chronology, or even writing. These dates, however, probably refer only to particular expeditions from Ireland, for the purpose of making conquests in Scotland over men of the same race and language with the conquerors, and can hardly have reference to the first peopling of an extensive territory and first introduction of the Gaelic language into Scotland, with the supersession of the language of the aboriginal inhabitants. Ireland and the parts of Scotland in which the Gaelic language was spoken, were probably considered as no more than portions of the same country. To a maritime people,—and the early Irish were so,—to cross the narrow sea which divided themselves from the people speaking the same language in Scotland, would be an enterprise of no greater difficulty than sailing the same distance along their own coast.

The conversion to Christianity of the two peoples speaking the languages the subject of this paper, namely the Welsh and Irish, forms an epoch in their history; for it was marked by a considerable influx of Latin, the language through the medium of which the conversion was effected. None of the countries of the people in question had been conquered and permanently occupied by the Romans, and the conversion of the inhabitants, therefore, could only have been effected by the missionaries of religion without any aid from the civil power.

I have searched, with the best care I could bestow, for words of Latin origin in the Gaelic dictionaries of Ireland and Scotland, and in the Welsh and Breton dictionaries, and have found not fewer than two hundred and fifty, and no doubt a more skilful search would add considerably to this number. These words, as always happens in such cases, are more or less corrupted to suit the genius of the languages adopting them; but they are not so disguised as to be seriously difficult of detection.

The character of the words introduced will show, to some extent, the effect which the new religion must have produced on the social condition of the barbarous and heathen people converted. Nearly all the words connected with religion are, as might be expected, of Latin origin, as God, devil, angel, heaven, hell, soul, body, belief, creator, creature, sin, benediction, prayer, sermon,

priest, clerk, clergy, bishop, church, religion, the cross, Bible, Sabbath, Christmas, baptism, marriage.

Of words implying the communication of useful knowledge, the whole series of numerals from an unit to a thousand, the names of the days of the week, the terms for month and hour, the names of the metals,—that is, of iron, copper, silver, gold, and even tin, the names for barley, rye, flax, hemp, oil, mill, money, and to count or reckon, are from the Latin.

All the words bearing on the introduction of letters are of course of Latin origin, such as to write, to read, pen, paper, teacher, pupil, school. To these may be added words of an abstract nature, which we may well believe that the languages of a very rude people would be deficient in, such as time, nature, glory, honour, labour, cause, people.

The inhabitants of the southern parts of Britain are asserted to have been converted to Christianity during the time of the Roman dominion, and most probably about the beginning of the fourth century, when the Roman Emperors themselves had adopted it as the national religion. The mountaineers of Wales, never subdued, must have been converted by missionaries from the low country. The Irish were not converted until the fifth century, the date assigned to their great apostle, St. Patrick, being as late as A.D. 432. The Caledonians or Scots, speaking the same language with the Irish, were converted a century later; and then, in all likelihood, through the missionaries from Ireland, for in A.D. 503, a great emigration of Irish took place, with a settlement in Scotland. The great apostle of Scotland was St. Columbus, no doubt an Irishman.

The existence of Latin words in any Gaelic writings handed down by tradition, I may take this opportunity of stating, would prove them to be more or less adulterated, if they pretended to an antiquity beyond the era of the introduction of Christianity. Applying this rule to the poems of Ossian, whether those translated or rather paraphrased by Macpherson, or such as have been handed down by oral tradition without his name, we discover words of Latin origin, which, had they been of the ages of Ossian, whose heroes are always represented as heathens, would not have been the case. We find, for example, such words as shield, sword, arms, gold, and silver, of Latin origin; but, above all, the names of the numerals, from an unit up to a thousand,—a class of words here of a compass not likely to exist in the language of a people so rude as must have been the Irish and Caledonians of the time ascribed to Ossian.

No satisfactory knowledge, I imagine, can in the present inquiry be derived from the names given by the people to themselves or their country, or imposed by strangers. With respect to

countries more especially, it happens but rarely that those of large extent, inhabited by several nations, are found to have a common native name among rude people. With them every islet has its proper, distinct name; but usually, from sheer ignorance of their insularity, the great ones have seldom specific names, each portion of them being usually called after the nation inhabiting it. For illustration I may state that, while every islet of the Malayan and Philippine Archipelagos, amounting to many thousands, have specific names, the great islands, such as those of Borneo, Sumatra, New Guinea, Luconia, and even Java, have no native ones; their present designations have been given to them by strangers in very modern times.

Applying this principle to the countries inhabited by the people speaking the Gaelic and the Welsh with its cognate Briton, it seems doubtful whether any of the greater regions occupied by them have specific native names, while the many islets on their coasts certainly had those which they still bear. The Romans gave to France, from the Pyrenees to the Rhine, the name of Gallia, and called its inhabitants Galli,—words of unknown origin; but the natives had no common name for so wide a territory. The Roman name of the whole country, according to Cæsar, was taken from its principal inhabitants, who called themselves, however, Celtæ,—probably pronounced Keltæ,—which was the name which the Greeks more correctly gave to all the inhabitants of ancient France. Of this term, however, there is certainly no vestige in the native languages of Ireland, Wales, or Armorica, although the Britons consider themselves, and in all likelihood justly so, the descendants of the people whose native name was Keltæ.

The term Bretagne in French, and Brittany in English, was applied to the country which the Romans called Armorica, from two words common to the Gaelic and Welsh languages. *Ard*, a height or high land, and either *muir*, the sea, or more probably *mor*, great or extensive, is unknown under that designation by its present inhabitants, who name their country Breir. The name of Brittany is said to have been given to it when, in the fifth century, it received a large accession of inhabitants from Britain; but this was, most probably, bestowed by strangers.

Of the etymology of the word Britannia, employed by the Romans, there is certainly no certain knowledge. Some have derived it from the Prydian of the Welsh or the Bhreatunn of the Irish; but I think it far more likely that both these words are corruptions of the Latin word Britannia. It is not, indeed, at all probable that a country of such extent, and inhabited by so many rude and hostile tribes, and differing even in race, should have a common name. I may repeat that the names of all great countries

have been bestowed by strangers more civilised than their own inhabitants. Of this, the names of Italy, Spain, Germany, are examples in Europe; and India and China in Asia; to say nothing of the great geographical divisions, Europe, Asia, Africa, America, and Australia. Of the abstraction which leads to the formation of such terms, barbarians—and our forefathers were sheer barbarians, although not savages—have no conception.

The etymology of the word Wales, which the French write Galles, is unknown, unless it be a corruption of the Roman word Gallia. At present the Welsh call themselves Kymri, and their country Kymru,—words of unascertained origin, and admitted to be of comparatively modern adoption. North and South Wales are known by two different names.

Ireland is the only great country which has a native name, the well-known one, Erin. From this is believed to be taken the Latin name Hibernia, which the Bretons or Armoricans have converted into Iverdun. The word Erin is equally the name for Ireland with the Scots Highlanders as with its own natives; but they never apply the adjective for Irish, derived from it, to themselves, whom they distinguish by the name of Gaelach; using as a correlative the term Galda, pronounced Galla, for the inhabitants of the low country of Scotland, with Eirannach for a native of Ireland, without generally having any conception that they are themselves the very same people with the Irish,—in so far, at least, as a common language makes them so.

If the facts and arguments adduced in the course of this paper are valid, the languages which are its subject are two distinct and separate tongues. Bede indeed, seven centuries ago, pronounced the Welsh and Irish to be as different from each other as Latin and Saxon. So far, then, as language can be considered a test of race, and to the extent that one European race of man differs from another, the parties speaking the two languages must be viewed as distinct original races. The difference between the two people in intellectual endowment may not be appreciable any more than it is in other European races; but physically, I think it is admitted that the Welsh are shorter in stature, and darker in complexion than the people at least of the western part of Ireland, where there has been the least admixture of foreign blood.

But between the two languages there exist, as already stated, a few words which are common to them, although none that are indispensable to their structure; none without the use of which either tongue may not, without much inconvenience, be spoken or written. The question is, how these words came to be common to them. Some kind of intercourse between the two people at no very remote distance from each, must have taken place in times far beyond the reach of history or tradition; and in the course of

such intercommunication, words of one of their languages would certainly be infused into that of the other. I venture to suggest that Ireland, a country more fertile and extensive, and therefore more likely to give birth to early civilisation than Wales, was the source from which the common words proceeded. In one quarter of the country, a part of South Wales indeed, the Irish went much further than communicating a few words of their language, for they conquered and occupied it, imposing on the inhabitants their own tongue, just as the Anglo-Saxons in the low and fertile parts of the island imposed theirs.

The communication of a few words of one neighbouring tongue to another,—usually of the language of a more to that of a less advanced people,—is indeed, no more than what has often occurred in other parts of the world; and I will adduce, in illustration, a few examples drawn from my own special studies. Into all the principal languages of the Philippine Islands there have been introduced at least double the number of words of the principal languages of the Malayan Archipelago that I suppose there are of Irish words in the Welsh or Armorican; and this, although there be as wide a difference in the pronunciation and structure of the two classes of languages as there is between those of English and French, or those of German and Italian. In these cases the infused words are altered or corrupted to suit them to the genius of the languages adopting them; and a similar change, I am satisfied, is made in the Irish words adopted by the Welsh language.

In all the chief languages of the Malayan Archipelago there are found an incomparably greater number of Sanscrit words than there are of Irish words in Welsh; and yet there is nothing in common between the Sanscrit and those languages, whether as to pronunciation or structure. Here, too, the infused words undergo an alteration in form; but because introduced not orally, but through writing, far less than in the Irish words found in Welsh. So it is with the five languages of Southern India, spoken by some thirty millions of people. They differ wholly in their structure from the Sanscrit, but contain a great many words of that language, always more or less altered to adapt them to the genius of the tongues adopting them.

If the Gaelic language on one side, and the Welsh and Armorican on the other, be two distinct tongues, and not, as the common denomination of Celtic would give us to understand, dialects of the same tongue, it will of course follow that the people speaking the Gaelic language, whether of Ireland or of Scotland, had no share in the great enterprises of the people known to the Romans as Gauls. The people who established themselves in Northern Italy, who captured Rome, overran and plundered Greece, and, under the name of Galatians, established themselves in Asia

Minor, were the Celts,—men who spoke the same language which is now spoken in Wales and Brittany; although it is not likely that the inhabitants of these poor and remote countries had any share in such enterprises.

The Welsh, on the very slender ground of a resemblance in sound between their own name of Cymry, have laid claim to be the descendants of the Cimbri, one of the three formidable tribes, who, a hundred years before the birth of Christ, invaded the Roman province of Gaul, crossed the Alps, and were defeated by Marius. The Romans could not tell from what country the invaders proceeded, but from their tall stature and blue eyes they concluded they were Germans. Had they been a people of Gaul, the Romans, who had been long in possession of a portion of that country, could hardly have been ignorant of the fact. They were, therefore, not Celts; and, to say nothing of the word Cymry being a modern one, they could not possibly have been Welsh.

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## APPENDIX.

LATIN WORDS IN GAELIC AND WELSH.

| *English.* | *Latin.* | *Gaelic.* | *Welsh.* |
|---|---|---|---|
| Abbey | Abbatia | Abaid | Abatty |
| Account | Computatio | Cuntas | Cyfrifon |
| Ache | Dolor, pœna | Pian | Dolur, poen |
| Act, deed | Actus | Achd | |
| Adultery | Adulterium | Adhaltras | |
| Aid, help | Cooperatio | Cobhair | Cywair |
| Alm | Alumen | Alm | Allawg |
| Alms | Eleemosyna | | Elusen, cardod |
| Altar | Altaria | Altair | Allor |
| Angel | Angelus | Aingeal [tair | Angel |
| Animal | Animal, creatura | Ainmhidh, creu- | Anifail, creadur |
| Arm (the) | Brachium | | Braich |
| Arms, weapons | Arma | Armach | Arf |
| Author | Auctor | Ughdair, athair | Awdur |
| Beast | Bestia | Beist | Bwystfil |
| Belief | Fides, credere | Creadeas | Ffydd, cred |
| Bible | Biblia | Bioball | Bibl |
| Bitter | Acerbus | Searbh | Chwerw |
| Book | Liber | Leabhar | Llyfr |
| Body | Corpus | Corp | Corff |
| Bridge | Pons | | Pont |
| Brute | Brutum, animal | Bruid, ainmhidh | Anifail |
| Bull | Taurus | Tarbh | Tarw |
| Camp | Campus | Campa | Camp |
| Cause | Causa | Cas | |
| Candle | Candela | Cainneal | Canwyll |
| Care | Cura | Curam | Cur |
| Castle | Castellum | Caisteal | Castell |

| *English.* | *Latin.* | *Gaelic.* | *Welsh.* |
|---|---|---|---|
| Cellar | Cellarium | Seilear | Seiler |
| Centre | Medius | Meadhon | Mewn |
| Chair | Carrus | Cathair | Cader |
| Cheese | Caseus | Cais | Caws |
| Cherry | Cerasum | Cirist | Ceirios |
| Canvass | Cannabis | Cainb | |
| Chest | Cista | Ciste | Cist |
| Church | Ecclesia | Eglais | Eglwys |
| Clergy | Clerus | Cleir | Cler |
| Clerk, writer | Clericus, scribens | Cleireach | Clerig |
| Cloud | Nubes | Neul | Niwl |
| Column | Columna | Colbh | Colofn |
| Common | Communis | Cumanta | |
| Corse, dead body | Corpus, cadaver | Corp, cairbh | Corff |
| Cow | Bos | Bo | Buwch, bu |
| Creation | Creatio | Cruthaihd | Cread |
| Crime | Crimen, peccatum | Cron, peacaich | Pechod |
| Cross | Crux | Crois | Croes, crog |
| Crown | Corona | Coron, crun | Coron |
| Copper | Cuprum | Copar | Copr |
| Curse | Maledictum | Mallachd | Melldith |
| Damnation | Damnatio | Damnadh | |
| Dart, arrow | Sagitta | Saighead | Saeth |
| Day | Dies | Di | Dydd |
| Dead | Mortuus | Marbh | Marw |
| Deity | Deus | Dia | Duw |
| Devil | Diabolus | Diabhol | Diawl, diafol |
| Disciple | Discipulus | Deiscobal | Disgybl |
| Dog | Canis | Cu | Ci, pl. cwn |
| Double | Duplex | Doubladh | Dyblyg |
| Dove | Columba | Colman | Colomen |
| Eight | Octo | Ochd | Wyth |
| Emerald | Smaragdus | Smarag | Emrallt |
| False | Fallax | Fallsa | Fals |
| Favour | Caritas | Cairdeas | Cardod |
| Fig | Ficus | Figis | Ffigysen |
| Firmament | Sphæra, æther | Speur, adhar | Ffurfafen |
| Five | Quinque | Coig | Pump, pum |
| Flax, lint | Linum | Lion | Llin |
| Foot | Pes | | Ped |
| Fortune | Fortuna | Fortan | |
| Four | Quatuor | Catheir | Pedwar |
| Friday | Dies-Veneris | Di-h-aoine | Di-Gwener |
| Ghost | Spiritus, anima | Spiorad, anim | Ysprydd |
| Glory | Gloria | Gloir | |
| Glove | Manua | Meatag | Maneg |
| Goat | Caper | Gabhar | Gafr |
| God | Deus | Dia | Duw |
| Gold | Aurum | Or | Aur |
| Grain | Granum | Graine | Gronyn |
| Heaven | Sphæra, æther | Speur, adhar | Awyr |
| Hell | Infernus | Iffrin | Uffern |
| Help | Cooperare | Cobhair | Cywair |
| Homily | Sermo | Searmon | |
| Honey | Mel | Mil | Mel |

| *English.* | *Latin.* | *Gaelic.* | *Welsh.* |
|---|---|---|---|
| Honour | Honor | Onoir | |
| Horn | Cornu | Corn | Corn |
| Hemp | Cannabis | Cainb | |
| Horse | Equus, caballus | Each, capull | Ceffyl |
| Hour | Hora | Uair | Awr |
| Hundred | Centum | Ciad | Cant |
| Iron | Ferrum | Iarunn | Haiarn |
| Island | Insula | Eileann | Ynys |
| Jail | Carcer | Carcair | Carchar |
| Join, unite | Unus | | Uno |
| Juice | Succus | Sugh | Sug |
| King | Rex | Righ | Rhi |
| Labour | Opus | Oibair | Llafur |
| Lance | Lancea, lamina | Lann | Llafyn |
| Land | Terra | Tir | Tir |
| Letter | Litera | Litir | Llythyr |
| Life | Vita | Beatha | Bywyd |
| Light | Sol, solis | Solus | Haul |
| Like | Similis | Samhail | Hafal |
| Lime | Calx | | Calch |
| Lord, master | Tyrannus, magis-[ter | Tighearn, maigh-[stir | Meister, teyrn |
| Mail | Lorica | Luireach | Llurig |
| Man | Vir | Fear | Gwr |
| Manner, mode | Modus | Modh | Modd |
| Marble | Marmor | Marmor | Marmor |
| Mare | Caballa | Capull | Ceffyl |
| Marriage | Sponsus | Pos | |
| Martyr | Martyr | Martarach | Merthyr |
| Master | Magister | Maighstir | Meister |
| Matin | Matutinus | Maduinn | Meityn |
| Measure | Mensura | Measarrachd | Mesur |
| Middle | Medius | Meadhon | Mewn |
| Mile | Mille passuum | Milé | Mill-dir |
| Mill | Mola | Muilheann | Melin |
| Monday | Dies-lunæ | Di-luain | Dydd-llun, di-llun |
| Money | Argentum | Airgoid | Arian |
| Month | Mensis | Mios | Mis |
| Moon | Luna | Luan | Lleuad |
| Murder | Mors | Mort | Marw |
| Name | Nomen | Ainm | Enw |
| Nation | Populus | Pobull | Pobyl |
| Nature | Natura | Nador | Natur |
| Nest | Nidus | Neud | Nyth |
| New | Novus | Nuadh | Newydd |
| Nine | Novem | Naodh | Naw |
| Noise | Fama | Nuiam | |
| Number | Numerus | Nimir | Nifer |
| Oar | Ramus | Ramh | Rhwyf |
| Ocean | Mare, abyssus | Moir, abheis | Aphwys |
| One | Unus | Aon | Un |
| Oil | Oleum | Ola | Olew |
| Oration | Oratio | Oraid | Araeth |
| Order, decree | Ordo | Orduh | Urdd |
| Pain | Pena | Pian | Poen |
| Pair (a) | Par | | Par |

| *English.* | *Latin.* | *Gaelic.* | *Welsh.* |
|---|---|---|---|
| Paper | Papyrus | Paipeir | Pabwyr |
| Peas | Pisum | Peasar | Pys |
| Pear | Pirus | Peur | Per, peren |
| Pen | Penna | Penn | Pin |
| People | Populus | Peobull | Pobl |
| Pepper | Piper | Peibbair | Pupur |
| Pigeon | Columba | Caluman | Colomen |
| Port | Portus | Port | Porth |
| Price | Pretium | Pris | Pris |
| Prime | Princeps | Prionnsa | Prins |
| Prison | Carcer | Carcar, prisonan | Carchar |
| Psalm | Psalmus | Salm | Salm |
| Purgatory | Purgatorium | Purgadair | Purdan |
| Question | Questio | Ceist | Cais |
| Rabbit | Cuniculus | Coinean | Cwning |
| Rat | Rattus | Raddan | |
| Read | Lego | Leighin | Dar-llen |
| Reason | Ratio | Reasan | Rheswn |
| Risk | Periculum | | Perygyl |
| Robber, thief | Latro | | Lladron pl. |
| Rose (the) | Rosa | Rós | Rhos |
| Rye | Secala | Seagl | |
| Sabbath | Sabbatum | Sabaid | Sabbath |
| Sack | Saccus | Sac | Sach |
| Sacrament | Sacramentum | Sacramaid | Sagrafen |
| Sad | Tristis | Tuirse | Trist, athrist |
| Salt | Sal | Salann | Halen |
| Saturday | Dies-Saturni | Di-Sathairn | Dydd-Sadurn |
| School | Schola | Sgoile | Ysgol |
| Scythe | Falx | Taladair | Pladur |
| Sea | Mare, abyssus | Muir, aibbeis | Mor |
| Season, time | Tempus | Tim | Tymmor, tymp |
| Seven | Septum | Seacha | Saith |
| Shield | Scutum | Sgaith | Ysgwyd |
| Silk | Sericum | Sioda | Sidan |
| Silver | Argentum | Airgoid | Arian |
| Sin | Peccatum | Peacadh | Pech |
| Sing | Canere | | Canu |
| Sit | Sedere | Suid | Seddu |
| Six | Sex | Se | Chwech |
| Sky | Sphera, æther | Speur-adhar | Awyr |
| Soul | Anima, spiritus | Anam, spiorad | Eneid, yspryd |
| Sort, kind | Sors | Seorsa | |
| Spoil, plunder | Spolia | Spuill | Yspail |
| Stork | Ciconia | | Ciconia (chwibon) |
| Sum | Summa | Suim | Sum |
| Sunday | Dies-Domenica | Di-domhnuich | Dydd-Sul |
| Sword | Gladius | Claidheamh | Cledd, cleddyf |
| Temple | Templum | Teampull | Teml |
| Ten | Decem | Deich | Deg |
| Tender, soft | Tener | | Tyner |
| Testimony | Testimonium | Taisbean | Tystiad |
| Thousand | Mille | Mil, deich-ceud | Mil, deg-cant |
| Thursday | Dies-Jovis | Di-ardoun | Dydd-iou |
| Three | Tres | Tri | Tri |

| *English.* | *Latin.* | *Gaelic.* | *Welsh.* |
|---|---|---|---|
| Time | Tempus | Tim | Tymp |
| Tin | Stannum | Staoin | Ystaen |
| Tower | Turris | Tur | Twr |
| Tribe | Tribus | Treubh | Tref |
| Tuesday | Dies-Martis | Di-mairt | Di-mawrth |
| Twenty | Viginte | Fichead | Ugain |
| Two | Duo | Da | Dau |
| Vine | Vinum | Fionan | Gwinwydd |
| Wall | Paries | | Pared |
| Wax (bees) | Sera | Ceir | Cwyr |
| Wednesday | Dies-Mercurii | Di-idion | Di-mercher |
| Wheel | Rota | Roth | Rhod |
| Wine | Vinum | Fion | Gwin |
| Witness,testimony | Testis, finis (?) | Fianuis | Tystio |
| Write | Scribo | Sgroibb | Ysgrifo, ysgrifenu |

*Note*—A few of these words have probably been taken from the Norman French element of English, and consequently in comparatively modern times; but the majority, as they do not exist in the English language at any period of its history, must have come direct from the Latin.

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## WORDS COMMON TO THE GAELIC AND WELSH LANGUAGES.

NOUNS.

| *English.* | *Gaelic.* | *Welsh.* |
|---|---|---|
| Back, hindpart | Coul | Cil |
| Bard | Bard | Bardd |
| Bark, rind | Rusg | Rhisgl, rhisg |
| Battle | Cath | Cad |
| Bell (a) | Clag | Cloch |
| Belly | Bolg | Bol, bola |
| Besom | Sguab | Ysgub |
| Billow, wave | Tonn | Ton |
| Birch (the) | Beithe | Bedw |
| Bird, fowl | Eeon | Edyn |
| Blossom | Blath | Blodeuyn, blawd |
| Boat | Bata | Bad |
| Brain | Eanchainn | Ymenydd |
| Branch, bough | Meangan, ceug | Cangen, cainc |
| Breath | Anail | Anadl |
| Breech (the) | Ton | Tin |
| Brother | Brathair | Brawd |
| Butter | Im | Imenyn |
| Cabbage | Cal | Cawl |
| Calf | Laogh | Llo |
| Cape, headland | Rinn | Penryn |
| Cat | Cat, cood | Cath |
| Cheek (the) | Gruaidh | Grudd |
| Cloud | Neul | Niful |
| Coal | Gual | Glo |
| Cock, male bird | Caileach | Ceiliog |
| Country (a) | Tir | Tir |
| Cuckoo | Cubag, cuag | Cog |

| *English.* | *Gaelic.* | *Welsh.* |
|---|---|---|
| Custom | Nos | Moes |
| Ear (the) | Cluas | Clust |
| Fire | Teine | Tan |
| Fist (the) | Dorn | Dwrn |
| Fish | Iasg | Pysg |
| Floor | Urlar, lar | Llawr |
| Foot | Troidh | Troed |
| Forest, a wood | Coille | Celli |
| Frost | Reodhadh | Rhew |
| Fuel | Connadh | Cynud |
| Furrow, trench | Clais | Cwys |
| Gap | Bealach | Bwlch |
| Goose (the) | Geadh | Gwydd |
| Gristle | Maothan | Mwythan |
| Hair, of the head | Falt | Gwallt |
| Hammer | Ord | Gordd, ordd |
| Head | Ceann | Pen |
| Hill | Beinn | Bryn |
| Hole | Toll | Twll |
| Horse | Marc | March |
| House | Tigh | Ty |
| Idiot | Amadan | Ynfydyn |
| Kidneys | Ara | Aren |
| Knee | Glun | Glin |
| Knoll, mound | Meall | Moel |
| Lake, pool | Linn | Llyn |
| Lamb | Uan | Oen |
| Leaf | Duille | Deilen |
| Leg | Cos, cas | Coes |
| Life | Beatha | Bywyd |
| Load, burden | Luchd | Llwyth |
| Loss, detriment | Call | Coll, colled |
| Man | Duine | Dynn |
| Marrow | Smear | Mer |
| Mesh | Mogul | Masgyl |
| Mountain | Monadh | Mynydd |
| Neck (the) | Muineal | Mwnygl |
| Oak (the) | Darach | Derw, dâr |
| Oats | Corc | Ceirch |
| Pace, step | Ceum | Cam |
| Peat | Moine | Mawn |
| Pillow | Cluasag | Clustog |
| Pipe | Piob | Pib |
| Pool, pond | Poll | Pwll |
| Raven (the) | Bran | Bran |
| Rib | Aisna | Asen |
| Rock | Carraig, creag | Craig |
| Rod | Slat | Llath |
| Sail, of a ship | Seol | Hwyl |
| Salt | Sallann | Halen |
| Sea | Muir | Mor |
| Seed | Siol | Hil |
| Ship | Long | Llong |
| Son | Mac | Mab, ab, ap |
| Sow | Muc | Hwch |

| *English.* | *Gaelic.* | *Welsh.* |
|---|---|---|
| Spit (a) | Beor | Ber, per |
| Stack | Cruach | Crug |
| Stand | Traigth | Traeth |
| Stream (a) | Srath | Ffrwd |
| Strength | Neart | Nerth |
| Swan (the) | Eald | Alarch |
| Tallow | Geir | Gwer |
| Tartan plaid | Breacan | Brycan* |
| Tear (a) | Deur | Dagr, deigr |
| Thunder | Tarnach | Taran |
| Time | Aimsir | Amser |
| Tree | Crawn | Bren |
| Warp (the) | Dluth | Ystof, dylof |
| Wind | Anail | Anal |
| Woman | Bean | Bun |
| Wool | Olann | Gwlan |
| Yard, area | Lann | Llan |
| Year | Bleadhna | pl. Blynedd, blwyddyn s. |
| | ADJECTIVES. | |
| Bad | Dorch | Drwg |
| Bald | Maol | Moel |
| Big | Mor | Mawr |
| Black | Dubh | Du |
| Blind | Dall | Dall |
| Blunt | Maol | Pwl |
| Broad | Leathan | Llydan |
| Clean | Glan | Glan |
| Cold | Fuar | Oer |
| Deaf | Bodhar | Byddar |
| Deep | Domhain | Dwfn |
| Fruitful | Torrach | Toreithiog |
| Full | Lan | Llawn |
| Good | Math | Mad |
| Grey | Glas | Glas |
| Harsh | Garbh | Garw |
| Heavy | Trom | Trwm |
| Little | Beag | Bychan, bach |
| Low | Tosal | Isel |
| Narrow | Caol | Cul |
| Old | Sean | Hen |
| Pale | Glas | Glaswyn |
| Quick, living | Beo | Byw |
| Rigid, stiff | Teann | Tyn |
| Round | Cruinn | Crwn |
| Sweet | Millis | Melys |
| Thin | Tana, caol | Teneu, cul |
| | VERBS. | |
| Burn | Loisg | Llosgi |
| Follow | Lean | Canlyn, dylin |
| Grind, bray | Meil | Malu |
| Hear | Cluinn | Clywed |

* In Welsh, a blanket.

| *English.* | *Gaelic.* | *Welsh.* |
|---|---|---|
| Hide, conceal | Ceil | Celio, celu |
| Lose | Call | Colli |
| Mix | Measgaich | Mysgu |
| Mock | Mag | Moc |
| Pack | Pioc | Pigo |
| Pierce | Toll | Tyllu |
| Ride | Marcaeich | Marchogaeth |
| Speak | Labhair | Llafaru |
| Stretch | Sin | Estyn |

GAELIC AND WELSH PARTICLES.—PREPOSITIONS.

| | | |
|---|---|---|
| Above | Suas | Uwch, goruwch, uwchben |
| Across | Thair | |
| About | Mu | Perthynol, goruwch |
| At | Tagus do, fagus, airlamh, ri | Yn, wrth, ar, ger |
| Before | Roimh | O flaen, rhag |
| Behind | Air uchul | Yn ol, ar ol, o'r tu cefn |
| Beneath | Fuidh | Is, islaw, isod, obry |
| Between | Eadar | Rhwng |
| By | Le, tre, trid, troimh | Gan, wrth, trwy, ger, gerllaw |
| From | O, bho, uith | O, oddi, o wrth, oddi wrth |
| In | An, am, ann, awns | Yn, mewn, o fewn |
| Of | De, dhe, ri, ris, gu, gus, chum | O |
| On | Aer | Ar, warthaf |
| Through | Troimhe, tre, tria, roimh | Trwy |
| To | Do, ri, ris, qu, qus chum, chun | Y, at, hyd, wrth, yn |
| Towards | Do chum, thun, fagus do | Tu, tuag, at |
| Under | To, fodha, fa | Dan, tan, is, goris |
| Unless | Sao o, mur, mus, nach | Oni, onid, onis |
| With | Le, leis, maille ri, mar ri | A, ag, gyda, efo |
| Within | A'stigh | Mewn, o fewn, tu fewn, yn ty |
| Without | Gun, as eugnchais | Heb, di |
| Yet | Tos | Eto |

AUXILIARY VERBS.

| | | |
|---|---|---|
| Be | Bi | Bod, hanfod |
| Do | Dean | Gwneud |
| Can | Aithnu, tuig | Gallaf |
| May | Faod | Gallaf |
| Have | Guilain, caith, meat, larr | Cael |
| Will | Tarr | Ewyllis, gwyllis |

CONJUNCTIONS.

| | | |
|---|---|---|
| Also | Maraon | |
| And | Agus, is | A, ac |
| As | Nur | A, ag, can, ceyn |
| Because | Gu | Canys |
| But | Ach, mur | Nam, ond |
| Either | No | Ai |
| If | Ma, na | O, os, od, pe, pes, ped |
| Or | No, air, nes | Na, nac |
| Than | Na | Na, nog |
| That | Gu, gum, gurchum | Mai |
| Though | Gidhead, ged | Er |
| Unless | Saoro | Oni, onis, onid |
| Yet | Tos | Eto |

ADVERBS.

| *English.* | *Gaelic.* | *Welsh.* |
|---|---|---|
| Again | A ris | Eilwaith, drachefn, eto, hefyd |
| Ever | Idir, riamh | Bob amser, yn wastad |
| Here | An so | Yma |
| How | Cia mar | Pa, mor |
| Indeed | Gu firinneath | Yn wir, yn ddiau |
| Never | Gu brath | Nid, braidd, nid un amser |
| No | Ni, cha | Ni, nid, nis, nac, nag, nad, nas |
| Often | Tric, minic | Yn fynych, llawer gwaith |
| Perhaps | Theagamh | Ys-gatfydd; efallai |
| Soon | A chlisgo, gu luath | Yn fuan |
| Then | Air sin | Y pryd hyny |
| When? | Cuin | Pan, pa pryd |
| Where? | Caite | Yn mha le, yn mha fan |
| Why? | C'arson, ciod uime | Paham |
| Yes | 'Seadh, se, tha | Ië, do, oes |

The pronouns, conjunctions, and adverbs, of the two languages contained in the enumeration above given, amount to about two hundred and twenty; yet there are not above half a dozen which seem to be the same in the two tongues. As examples, the English preposition "from" is represented both in Gaelic and Welsh by the word "O." Our preposition "in" is in Gaelic represented by the word "an," which is most probably the same as the Welsh "yn." The English conjunction "than" is expressed by the word "ni," equally in the two languages. So is the negative "no," by the word "ni." Most probably, however, such rare coincidences are merely accidental, and do not infer affiliation. Such coincidences are to be found between languages which have no relationship whatever to each other. Thus, the Latin preposition "de" is to be found in the remote Malay, with the very same meaning. Considering that the greater number of particles are monosyllables, and consequently, that the range for selection is necessarily limited, the wonder only is that such coincidences are not more frequent.

J. C.

## VIII.—*An Account of the Discovery of a Human Skeleton beneath a Bed of Peat on the Coast of Cheshire.* By G. Busk, F.R.S., Vice-President of the Ethnological Society.

[*Read February 7th*, 1865.]

The skeleton I am about to describe was found on the Cheshire shore at the extremity of the tongue of land lying between the estuaries of the Dee and of the Mersey a little to the right hand of Leasowe Castle, the seat of Sir Edward Cust, by whom intelligence of the discovery was first made known to Sir Charles Lyell, at whose recommendation Sir Edward Cust secured the skeleton, and has deposited it in the museum of the Royal College of Surgeons.

In a memorandum of the discovery furnished by Sir Edward Cust, dated February 22nd, it is stated "that the skeleton must have lain until about a twelvemonth nearly a hundred feet below the surface, a very little to the right hand of Leasowe Castle, near Birkenhead. When first discovered it was lying in a mixture of blue clay and sand, about five feet beneath the surface of the peat deposit and upon a body of solid blue clay containing many boulder stones of considerable size, and which itself stands upon a hard, utterly unfruitful red marl. At the spot there was formerly a sand-hill of some altitude, greatly exceeding that of the rest of the sand-hill range. Supposing these sand-hills to be of no greater antiquity than the time of the Romans, it may be useful to remark that the Iter Antoninum, in describing the western shore of England, names the existence of *four* estuaries where there are now five. The Dee, the Ribble, the Lune, the Solway, and the Mersey. The first four have marks such as Deva and Castrum, which, as regards the Dee, denote that that estuary could not have been overlooked, and it would be still more remarkable if the Mersey, which is now by far the most important of the five, could have been so. One of the theories that have been started upon the supposition that the Mersey was nevertheless the omitted stream is, that at the period it flowed along the Cheshire shore and fell into the Dee before it formed its estuary. According to this theory, the spot in which the skeleton has been found, might have been near the left bank of the Mersey river."

"The peat deposit," Sir Edward Cust remarks, "contains much timber, sound enough for modern use, and the bones and horns of animals; but these have been found *in* the peat and not *below*

it. There was no appearance that the peat soil had ever been disturbed where the skeleton lay."

From some observations in a further communication from Sir Edward it would appear that formerly, and even within his own recollection, the sea was several hundred yards in front of the sand-hill whose removal by the waves, uncovered the peat bed beneath which the skeleton was found. And there was, until within this year, an extent of peat about one mile and a half from Leasow Castle, in which the roots of trees in their natural position stood up some feet; but these are nearly all now destroyed by the advancing tide which is rapidly encroaching on the shore.

The nature of the locality in which the skeleton was found will be best seen by reference to a coloured ordnance map, from which it will be perceived that the whole of the shore in the neighbourhood of Leasowe is, except at the point opposite the castle itself and to the west of it for a short distance, covered by blown sand, which at the part in question appears to have been washed away, as stated by Sir Edward Cust, rendering the protection of the shore by an artificial embankment necessary. The entire country between the two estuaries is formed of the new red sandstone formation apparently overlain in parts by a considerable thickness of boulder clay which on the shore of the estuary of the Dee forms cliffs of some height. This, it may be assumed, is also the stiff blue clay with large boulders, described by Sir E. Cust as underlying the peat and resting upon the red marl. The skeleton, therefore, would seem to have lain immediately upon the boulder clay, and consequently we may assume that in all probability the owner perished at the time when the peat was a soft bog. The extent of this ancient bog and forest is indicated—perhaps with some correctness, by the extent of the alluvium indicated in the map, and pretty nearly corresponding with the confines of the course of the Birket—a stream which represents the drainage of the district and empties itself into Wallasey Pool and reaches the Mersey at Birkenhead. At what period the ancient forest which formerly occupied this district perished, we have probably no means of ascertaining; but it perhaps need not have been extremely remote; and it is a curious circumstance that some tradition of its existence appears still to be maintained among the people, as testified by the doggerel which says that—

> "From Birkenhead unto Hilbre,
> A squirrel might jump from tree to tree."

We may be allowed to suppose that the owner of the skeleton might have witnessed this, and here followed the chase of the deer, and perhaps of the wild ox in the then wilderness; at any rate, as we shall see from his bodily conformation, he was well adapted for the pursuit of the chase.

With respect to the skeleton itself, when found it is described as lying extended and to have been entire. Some few of the bones are now wanting; but what remain suffice to give us an excellent idea of what manner of man it belonged to.

The bones are of the usual deep olive-black colour usually observed in peat-bones, and as is also usual in such bones they are hard, tough, and elastic. No analysis of them has been made; but there can be no doubt that they contain a large amount of animal matter.

When first observed, the length of the skeleton was estimated at six feet two inches; but upon comparison of the length of some of the bones with other skeletons, it would appear that the real height was somewhat less—probably about 5 ft. 10 in. or 5 ft. 11 in. The bones, generally, denote a man of great muscular power and well-formed, except perhaps in one respect, for it would seem that the clavicles and ribs are disproportionately slender in comparison with the rest of the skeleton.

The following are the dimensions of the cranium:—

| | | |
|---|---|---|
| 1. | Length | 7·6 |
| 2. | Breadth | 5·9 |
| 3. | Height | 5·7 ? |
| 4. | Least frontal breadth | 3·9 |
| 5. | Greatest frontal breadth | 5·0 ? |
| 6. | Parietal breadth | 5·7 |
| 7. | Occipital breadth | 4·75 |
| 8. | Zygomatic breadth | 5·1 |
| 9. | Frontal radius | 4·8 |
| 10. | Vertical „ | 4·7 |
| 11. | Parietal „ | 5·0 ? |
| 12. | Occipital „ | 4·5 |
| 13. | Maxillary „ | 3·8 |
| 14. | Fronto-nasal „ | 3·85 |
| 15. | Circumference | 21·5 |
| 16. | Longitudinal arc | 15·5 |
| 17. | „ frontal | 5·4 |
| 18. | „ parietal | 5·2 |
| 19. | „ occipital | 4·9 |
| 20. | Frontal transverse arc | 12·9 |
| 21. | Vertical do. „ | 13·3 |
| 22. | Parietal do. „ | 13·8 |
| 23. | Occipital do. „ | 12·0 |

From which it is evident that the cranium is dolichocephalic, orthognathic, and aphanozygous.

1. *Norma lateralis.*—In the side view there is seen to be a considerable supra-orbital projection; the forehead is high and rounded; the vertical region straight, and the occiput considerably produced; the mastoid processes are large and strong, and the lower jaw nearly rectangular.

2. *Norma occipitalis.*—The outline in this view is rounded,

and the line of greatest breadth below the middle; the lambdoidal suture is closed in the middle, as is the sagittal suture; the superior occipital spine well developed.

3. *Norma frontalis.*—Forehead somewhat pyramidal; frontal sinuses strongly marked, and the supra-orbital border beyond them thickened and prominent; orbits suborbicular, but much broken; nasals wanting.

4. *Norma verticalis.*—General outline rounded oval; aphanozygous; a large part of the parietals wanting.

5. *Norma basalis.*—Alveolar border rather straight in front; remaining teeth regular, much worn, and flat; mastoid processes thick; the greater part of the central portion of the base, including nearly the entire foramen magnum, wanting.

The following are the dimensions of some of the other bones:—

| 1. *Femur.* | | 2. *Humerus.* | |
|---|---|---|---|
| Length | 18·0 | Length | 13·4 |
| Least diameter | 1·1 | Least diameter | 0·7 |
| Width at condyles | 3·2 | Width at condyles | 2·75 |
| „ at upper end | 3·9 | „ of head | 2·9 |
| **3. *Radius.*** | | **4. *Ulna.*** | |
| Length | 10·1 | Length | 10·9 |
| Width at distal end | 1·4 | Width at proximal end | 1·2 |
| Diameter of head | 0·9 | | |

*Pelvis.*

Width - - - - - 11·25

Figures of the cranium will appear in my *Crania Prisca.*

## IX.—*On Cannibalism in Relation to Ethnology.* By JOHN CRAWFURD, ESQ., F.R.S.

[*Read February 22nd,* 1865.]

THE name for a man-eater in all the languages of modern Europe is, I have no doubt, taken from that of a tribe of insular Americans, the Caribs, probably the first anthropophagi encountered by the Spaniards after their discovery of the New World. The name for a man-eater in Spanish is that of the people in question, written Caribé; but the Spaniards employ also, borrowed probably from the French or Italians, the more general word, seemingly a corruption of it, and which they write Canibalé.

Man, at his first appearance on earth, in the remote time when he was the contemporary of the extinct elephant, rhinoceros, and cave-bear, could have been little above the level of the lower animals, except in the possession of a pair of hands and in a superiority of brain the powers of which were as yet undeveloped. He had not constructed a language, and his speech, like that of the lower animals, consisted of interjections only. He had not acquired the art of kindling a fire, and his only weapon was a club—the branch of a tree torn off by the wind. In this feeble and almost helpless state of his existence his food would of necessity consist of raw flesh derived from the dead carcases of beasts, birds, and fishes, assisted on the sea-coast by shell-fish and sea-weeds, and in a few favoured localities by wild fruits. He was utterly naked.

The condition of man, in this his first stage of existence, appears to me to be faithfully represented in the philosophical vision of Sir Humphry Davy, and I think it, therefore, worth transcribing. "Whilst I was still," says he, "in motion, a dim and hazy light which seemed like that of twilight in a rainy morning broke upon my sight, and gradually a country displayed itself to my view covered with forests and marshes. I saw wild animals grazing in large savannahs, and carnivorous beasts disturbing and destroying them. I saw naked savages feeding on wild fruits, or devouring shell-fish, or fighting with clubs for the remains of a whale which had been thrown on the shore. I observed that they had no habitations—that they concealed themselves in caves or under the shelter of palm-trees, and that the only delicious food which nature seemed to have given them was the date and the cocoa-nut, and these were in very small quantity, and the object of contention. I saw that some few of these wretched human beings that in-

habited the wild waste before my eyes had weapons pointed with fish-bone or stone, which they made use of for destroying birds, quadrupeds or fishes that they fed upon raw; but their greatest delicacy appeared to be a maggot or worm which they sought for with the greatest perseverance in the buds of the palm."

In the first stage of man's existence, however, it is to be taken into consideration that wild animals must have been more abundant than they afterwards became when mankind had by increase of numbers, and skill in their destruction, contributed to displace them. Having then too little fear of man, they would be more easily captured or destroyed. We know this to have been certainly the case from our experience of uninhabited and unfrequented countries, as in the cases of New South Shetland, and the islands of Paul and Amsterdam for seals, and down to the present day for birds, as in the case of the Galapagos Islands, where they can still be captured with the outstretched hand, or knocked on the head with a switch.

When man had increased in number, and the animals on which he fed had become fewer, and at the same time more shy or difficult of capture from their knowledge of him, his ingenuity would necessarily be stimulated to the invention of new means of procuring food. Then would be invented the weapon pointed with bone or stone, the bow and arrow, the blow-pipe for discharging arrows or pellets, the bone fish-hook, the net, and eventually the canoe, with the stone-axe and knife for their fabrication. Men now clothed themselves in the skins of the wild beasts, the flesh of which they had devoured, and in this stage a language would be formed, and the art of kindling a fire discovered. This is the stone age, and that in which I imagine that cannibalism began. Mankind was now, as indeed from the beginning, divided into many separate tribes, the sufficient proof of which is to be found in the numerous independent languages still spoken, notwithstanding the well-known extinction of many. In the struggle for existence—which, however, I see no reason to conclude ever ended in a metamorphosis—neighbouring tribes would necessarily live in a state of hostility. Their wars would be about hunting and fishing grounds, and the carnivorous savage who lived exclusively on flesh would draw no nice distinction between that of the lower animals and that of his enemies, when this indulgence gratified at once his revenge and appeased his hunger. Cannibalism, in short, would be established.

Pressed by a diminishing supply of food, human ingenuity would be stimulated to the invention of fresh means for augmenting it; and then, it may be imagined, would begin the artificial raising of roots, fruits, and corn, and the first domestication of animals—that is, the first rudiments of agriculture. In this case, the pro-

gress made would depend greatly on the abundance or scarcity of the wild plants and animals amenable to culture and domestication, these being many in some regions, few in others, and almost wholly wanting in a few.

From the comparative abundance of food in this third stage of savage life, cannibalism might be expected to cease, and in a few instances it actually did so; yet it was still frequently continued through custom and superstition. On the discovery of iron and bronze for the fabrication of cutting implements, constituting the fourth and last stage of savage life, man now invested with the power of commanding an adequate supply of food, cannibalism ought totally to have been relinquished; but a few examples of it are still found to remain, and we find it then assuming the mask of religion.

I shall endeavour to illustrate by examples the principles now laid down. The Greeks and Romans, even in the rudest state of society among them of which we have any authentic record, were far advanced beyond the cannibal state. Such, also, was the case, even with all the tribes and nations with which they held intercourse. Even the rudest of these possessed corn and cattle, and were acquainted with the metals. So it was, too, with the Egyptians, and with all the civilised nations of Asia—the Tyrians, the Jews, the Persians, Assyrians, Hindus, Arabians, and Chinese. Among classic writers, Herodotus alone charges two Asiatic nations, one of Central and one of Eastern Asia, with cannibalism; but his information was, of course, mere hearsay; and yet although accompanied by details which vitiate its credibility, it has probably some foundation of truth. I have no doubt, however, but that cannibalism once prevailed among the forefathers of the most civilised nations of Europe and Asia when they were in the same state of society as were the New Zealanders, and most of the inhabitants of the islands of the Pacific, as well as all the ruder people of America and its islands. Ten years ago, Dr. String, a distinguished Professor of the University of Liége, discovered in a grotto at Chauvaux, on the banks of the Meuse, human bones, along with those of animals, and with them a rude stone axe. All the long human bones had been split for the extraction of their marrow, and here, if we can but rely on the narrative, was clear evidence of cannibalism at no great distance from the now manufacturing, commercial, and civilised city of Liége.

The only European people against whom a direct charge of cannibalism has been made, within the limits of authentic history, are the Caledonians, and more especially the ancient Scots. The authority on which the imputation is made is Hieronymus, commonly called Jerome, afterwards canonised and considered by competent judges an authentic writer as to lay subjects. The text of

Jerome's statement, which I take from a note in Gibbon, almost literally translated, is as follows:—"When a youth and in Gaul, I saw the Attacotti (or Scoti), a British nation that feeds on human flesh. When they encounter in the woods herds of swine and oxen, or flocks of sheep, it is their wont to cut off the most fleshy parts of shepherds and shepherdesses, holding these alone to be delicious food."

"Such," says Gibbon, in a note, after quoting the Latin original of this passage, "is the evidence of Jerome, whose veracity I find no reason to question;" and in his text the historian has the following reflection: "When they (the Attacotti or Scoti) hunted the woods for prey, it is said that they attacked the shepherd rather than his flock, and that they curiously selected the most delicate and brawny parts both of males and females, which they prepared for their horrid repasts. If in the neighbourhood of the commercial and literary city of Glasgow, a race of cannibals has really existed, we may contemplate in the period of the Scottish history the opposite extremes of savage and civilised life. Such reflections tend to enlarge the circle of our ideas, and to encourage the pleasing hope that New Zealand may produce in some future age the Hume of the Southern Hemisphere."

To the charge of cannibalism made by Jerome, and apparently believed in by Gibbon, a few evident objections present themselves. The allegation refers to the middle of the fifth century (A.D. 467-470), and all that the narrator asserts is, that he saw in Gaul a British people called the Attacotti or Scoti, who in their own country devoured human flesh, preferring it to pork, beef, or mutton. The individuals seen by Jerome appear at the time to have been soldiers in the service of the Roman Emperor, and he could not himself have seen them in the act of devouring human flesh in a country which at the moment had been a Roman province, and partaken of Roman civilisation, for five centuries. But the country of the Attacotti, if in the neighbourhood of Glasgow, must have been south of the wall of Antoninus, and all Britain up to this wall had been conquered by the Romans from the time of Agricola. Tacitus, who described these conquests, and the people over whom they were made, from the notes of Agricola, makes no allusion whatever to the practice of cannibalism in any part of Britain. He speaks, indeed, of human sacrifices as practised in some parts of Britain; but the sacrifices, like those of the Peruvians, and unlike those of the Mexicans, stopped short of devouring the flesh of the victims. Let me add that the Scoti, if they were cannibals, were Irish invaders and conquerors, or at least are now considered to have been so, both by the antiquaries of Ireland and Scotland. They must have spoken the Gaelic language—the only native tongue ever known to have been spoken

in Ireland; and indeed by their descendants, north of the Roman wall, do, in fact, continue to speak it down to the present day. It may reconcile Irishmen to the imputation of cannibalism thus made against their forefathers, that the Roman narrator thus describes them as, "bellicosa hominum natio," that is, "a valiant race of men." I state all this, not in disparagement of the Irish or vindication of the Caledonians, but simply as an historical fact.

As to that portion of the passage which I have transcribed from Gibbon, which contains the compliment to his brother historian, and in him to the Scottish nation, I may take this opportunity of remarking that from it Lord Macaulay appears to have borrowed his celebrated prophecy of the New Zealander of a future age contemplating the ruins of London from the broken arch of one of its bridges. I must add that from what is now passing in New Zealand, it is far more likely that its native race shall be speedily extinguished than that in future ages it should produce either a David Hume or a sentimental philosopher contemplating the ruins of London from the broken arch of one of its bridges. Indeed, I am obliged to pronounce our two great historians to be very small ethnologists. The Southern hemisphere may, indeed, in some future age, produce a David Hume; but he will be, not a Maori, but an Anglo-Saxon—not a brown man with invariably black hair and eyes, but a white one, with hair and eyes of manifold tints.

But although I consider the evidence of cannibalism in the instance of the Attacotti, Scoti, or Scots, unsatisfactory, I am by no means prepared to conclude that it did not exist, even down to the fifth century with the people of Scotland north of the Roman wall, and among whom Roman civilisation had not penetrated. On the contrary, the people of that part of our island seem to have been exactly in that state of society in which we know that cannibalism has existed in other parts of the world. The following is Gibbon's well-known description of them even in the fifth century:—"The native Caledonians preserved in the northern extremity of the island their wild independence, for which they were not less indebted to their poverty than their valour. The masters of the fairest and most wealthy parts of the globe turned with contempt from gloomy hills assailed by the winter tempest, from lakes concealed in a blue mist, and from wild and lonely heaths, over which the deer of the forest were chased by a troop of naked barbarians."

Gibbon's account is corroborated by the cysts and shell-heaps of Mr. Laing, which satisfactorily prove that a portion of the forefathers of the Scottish nation were men of the stone age, and of a very rude one too; mere hunters, and in all, save superiority of race, on a level with Australians and Red Indians. I am very far, however, from considering the discovery of a single child's

jaw-bone in the Caithness shell-heaps as evidence of cannibalism; for, independent of its utter inadequacy, I have not been able in the course of my inquiries into the general subject to find that children have been the victims of cannibalism. In the case of a surprise and general massacre, no doubt their flesh would be eaten; but more usually they are saved for slaves, although occasionally afterwards sacrificed.

The people of Europe, even of the middle ages, were assuredly wholly unaware of the cannibalism of their remote forefathers, and if man-eating was mentioned by them at all, it was only in romance, and attributed to demons. The discovery of the New World, however, afforded abundant testimony of it, for in nearly every part of it visited by the first discoverers, perfectly satisfactory evidence of it presented itself. The whole continent was eminently deficient in animals amenable to domestication, for there existed throughout but three—the dog in North America, the llama in Peru, and the turkey in Mexico. The scarcity of animal food arising from this cause retarded civilisation; and, I have no doubt, was a provocation at the same time to cannibalism. Even in localities where the banana, the manihot, the yam, the maize had been long cultivated, cannibalism was found still to prevail.

Examples of American cannibalism are abundant; but I shall here confine myself to a few examples taken from the *Travels of Pedro Cieza de Leon*, of which an excellent translation has lately been made by my travelled friend Mr. Clements Markham, the accomplished Secretary of the Geographical Society. The author, bating a little bigotry which belonged to his age, is a sensible, judicious, and reliable observer. He arrived in America in 1534, only three years after the conquest of Peru, and when a mere youth. His adventures refer to about the middle of the sixteenth century, and the particular scene of them to which I shall refer was the valley of the Cauca, a tributary of the Magdalena, and lying between the fifth and sixth degrees of north latitude. "The Indians," says he, "although they speak the same language as those of Guaco, are always engaged in wars with them, so that the number of both nations has greatly diminished, for they eat all those that are captured, and place their heads before the doors of their houses. Very great," he adds, "is the power that the devil, enemy of the human race, is allowed by God to have over this people by reason of their sins, and often is he visible amongst them. On the above-mentioned platform they have many cords fastened in the manner of a knot, each forty brazas long, and we made use of these ropes for sandals. On the top of the platform they fastened the Indians whom they took in war by the shoulders, and cut out their hearts, which they offered to their war gods, or to the devil

in whose honour they made these sacrifices. Presently, without any long delay, they eat those whom they had thus killed."

Here is an incident of which the author himself was an eye-witness. "Don Rodrigo Alonzo, I, and two other Christians, being in the province of Pancura, went in chase of certain Indians, and, on entering a village, there came out the freshest and prettiest Indian girl I have ever seen in all these provinces. When we saw her, we called her, but as soon as she saw us she shrieked as if she had seen the devil, and ran towards the Indians of Pozo, thinking it better to be killed by them than to fall into our hands. And so it was that one of these Indians who were our allies, before we could prevent him, gave her a cruel blow on the head, while another came up and beheaded her with a stone knife. The girl, when they approached, knelt down and awaited her doom, which they gave her. They then drank her blood, and ate her heart and entrails raw, carrying off the head and limbs to be eaten on the following night. . . . "I saw two other Indians who had killed those of Pancura, and the victims laughed pleasantly, just as if they were not the men to die. In fine, all the Indians of these parts have the custom of eating human flesh."

The custom of hoarding heads or skulls, and sometimes the stuffed skins of the victims, is described by Cieza de Leon as common. "Owing to their wars," says he, "when we discovered the valleys, we found so many human heads at the doors of the chiefs' houses that it seemed as if each one had been a butcher's shop." This, as will presently be seen, does not differ even in detail from the cannibalism of New Zealand and the Fijis. In both cases the main motive is revenge, and the victims are captives, while heads in one form or another are preserved by the conquerors as trophies.

Cannibalism still exists in America, although necessarily to a greatly diminished extent. Mr. Bates, in his authentic, instructive, and philosophical work on the valley of the Amazons, enumerates by name several tribes of the valley of the Amazon who are still cannibals, and who waylay strangers, and especially European strangers, killing and devouring them. He gives one example. "Four months before my arrival at St. Paulo," says he, "two young half-castes (nearly white) of the village went to trade on the Juari, a tributary of the Amazon, the Majeronas having shown signs of abating their hostility for a year or two previously. They had not been gone long when their canoe returned with the news that the two young men had been shot with arrows, roasted, and eaten by the savages." There was, however, some discrimination in the cannibalism of the Majeronas, for it appears that in a previous voyage, the two slaughtered young men had offered insults to their women, and their death was in revenge of this

injury; for after the accomplishment of this act of retaliation, the canoe and her remaining crew were allowed to escape without molestation.

Notwithstanding the circumstantial and authentic accounts of cannibalism in America given by Spanish writers, doubts were still entertained of the possibility of so shocking a custom, all which, however, were swept away by the discoveries of European navigators in the islands of the South Sea during last century. In these islands there existed no indigenous quadruped except a small rat. A few of them had the dog and the hog, but both in the domestic state, and nowhere in the wild. To these domestic animals was added, in some islands, the domestic fowl; but from whence or when these animals came is unknown, for there exists, as might well be expected, no record of their arrival, nor are they traceable through language to any foreign country. In some of the more favoured islands, the taro, or esculent caladium, the bread-fruit, the sweet-potato, the yam, the cocoa-nut, and sugar-cane were cultivated,—the three last traceable by their names to an intercourse with the remote Malays. But in no one of the islands was there cultivated any cereal, without which no respectable amount of civilisation has ever been attained.

The New Zealand Islands were far worse off than the rest. Their climate was rougher, for they were far beyond the tropic. The inhabitants, in fact, had been emigrants from the tropical islands; a fact attested by identity of physical form, and essential identity of language. They had brought with them none of the domesticated animals of their parent country, except the dog, and it, for want of food for it, existed in too small numbers to be, as it was in the tropical islands, food for its owner. The only native animal which could have yielded a considerable quantity of red flesh was soon exterminated by the new-comers. This was the gigantic wingless bird, of the ostrich family, and which, after the name of the domestic fowl of the country they had left, the immigrants called the Moa—a bird, the existence of which, in a former age, we know only by its name and its skeleton. The animal food of the New Zealanders must, therefore, have consisted exclusively of fish. Of vegetable food they brought with them only the caladium and the yam, nor did the country itself, propitious as it has since proved to another race of man in soil and climate, yield any plants amenable to cultivation.

Here then was a fine open field for cannibalism, and it flourished throughout. The people were savages, and under their untoward condition could not be anything else. They were divided into many tribes, at perpetual war; and the conquerors always ate their prisoners. The account of the cannibalism of the New Zealanders, given by Cook, ever sagacious and truthful, is so good

that I transcribe it, observing that he had for his interpreter the celebrated Tahitian, Omai, who had visited England, and spoke essentially the same language as the New Zealanders. "From my own observation," says he, in his third voyage, "and from the information of Tameiharooa and others, it appears to me that the New Zealanders must live under perpetual apprehension of being destroyed by each other, there being few of their tribes that have not, as they think, sustained some wrongs from some other tribe. And perhaps the desire of a good meal may be no small incitement. I asked if they ate the flesh of such of their friends as were killed in war, but whose bodies were saved from falling into the enemy's hands. They seemed surprised at the question, which they answered in the negative, expressing some abhorrence at the very idea."

He afterwards adds, "The perpetual state of war, and the destructive method of conducting it, operate so strongly in producing habitual circumspection, that one hardly ever finds a New Zealander off his guard, either by night or by day. Indeed no other man can have such powerful motives to be vigilant. For, according to their system of belief, the soul of the man whose flesh is devoured by the enemy is doomed to a perpetual fire; while the soul of the man whose body has been rescued from those who killed him, as well as the souls of all who die a natural death, ascend to the habitation of the gods."

New Zealand, however, was not the only part of the islands of the Pacific inhabited by the fairer of the two races of man that occupy them in which cannibalism prevailed. It existed also in the Navigator Islands or Samoan group, and the great navigator whose words I have been just quoting, fell himself a victim to it in the Sandwich Islands. Mariner, who had lived for several years among the islanders of Tonga, one of the Friendly group, personally witnessed two instances of cannibalism among this people, who belong to the fairer race. In the last of these cases, forty of the Tonguese cut up, cooked, and ate three dead bodies of their enemies; but he adds "that the natives of these islands are not to be called cannibals on this account. So far from it being a general feature, it is, on the contrary, held in abhorrence; and when it is occasionally done, it is only by young warriors, who do it in imitation of the Fiji islanders, attaching to it an idea that there is something in it designating a fierce, warlike, and manly spirit. When the party in question returned to Neafu, after their inhuman repast, several persons, particularly women, avoided them, saying, 'Away, you are a man-eater!'"

In a few of the islands of the Pacific, however, no cannibalism was found by their discoverers to exist, as in the Society and Marquesa groups, where the domesticated animals existed, and

agriculture had made considerable progress, the seas also abounding in fish. Here the same horror of eating human flesh was found to be entertained as among the civilised people of Europe and Asia.

But it is among the Negro races of the Pacific—the men of skin more or less black, and of hair more or less woolly—that cannibalism has been found chiefly to exist; and, indeed, notwithstanding the meritorious efforts of the Christian missionaries to abolish it, it still exists in the fulness of its atrocity. These Negro races, for there are several of them, are not found to the North of the Equator, but extend all the way south of it to about the 20th degree of latitude, and from the 130th to the 180th degree of longitude. With the exception of the great island of New Guinea, on the coasts of which, at least, it is unknown, cannibalism is, to a greater or less extent, believed at present to prevail. These Negroes, although placed under the same favourable conditions of sky and land as the fairer race, are undeniably a more brutish and unintellectual people.

Among these Austral Negroes, we possess the most intimate knowledge of those inhabiting the Fiji Islands, the most easterly and also the most civilised of the whole, and this from the long residence among them of British and American missionaries—men of untiring zeal and perfect integrity. From the authentic information communicated by these meritorious men to intelligent and educated voyagers, I shall give my account of their cannibalism. I take the following from the exploring expedition of the United States in 1840, under the command of Captain, now Admiral, Wilkes.

"The hostile feelings of the different tribes makes war the principal employment of the males throughout the group; and where there is so strong a disposition to attack their neighbours, plausible reasons for beginning hostilities are not difficult to find. The wars of the Fijians usually arise from some accidental affront or misunderstanding, of which the most powerful party takes advantage to extend its dominions or increase its wealth. This is sometimes accomplished by a mere threat, by which the weakest party is terrified into submission to the demand of territory or property.

"The eating of human flesh is not confined to cases of sacrifice for religious purposes, but is practised from habit and taste. The existence of cannibalism, independent of superstitious notions, has been doubted by many. There can be no question that, although it may have originated in a sacred rite, it is continued in the Fiji group for the mere pleasure of eating human flesh as food. Their fondness for it will be understood from the custom they have of sending it to their friends at a distance, as an acceptable present; and the gift is eaten, even if decomposition has begun before it is

received. So highly do they esteem this food, that the greatest praise they can bestow on a delicacy is to say that it is as *tender* as a dead man. . . . .

"On the 10th of February, 1840, one of the servants of the American missionaries," continues Admiral Wilkes, "informed them that the king had sent for two dead men from Lauthala, a town or *koro* not far from Somusomu. On inquiring the reason, he knew of none but that the king was angry. This was sufficient to know, and in some degree prepared them for what they shortly after had to witness. They now found that the servant was but partly informed, for instead of two men they soon observed eleven brought in, and knew that a feast was to take place. Messrs. Hunt and Lythe went to the old king, to urge him to desist from so horrid and barbarous a repast. . . . .

"On the day of the feast, the shutters of the mission-house were closed to keep out the disgusting smell that would ensue; but Mr. Hunt took his station just within the fence and witnessed the whole that follows. The victims were dragged along the ground with ropes round their necks, and laid as a present to the king. . . . The cause of the massacre was that the people of Lauthala had killed a man belonging to the king's *koro*, who was doing some business for the king, and notwithstanding the people of Lauthala are related to the king, it was considered an unpardonable offence, and an order was given to attack the town. The party that went for this purpose came upon the unsuspecting village, when, according to themselves, they were neither prepared for defence nor flight, or, as they described it to Mr. Hunt, 'At the time the cock crows, they open their eyes, and raise their heads from sleep; they rushed in upon them and clubbed them to death.' Without any regard to rank, age, or sex, all shared the same fate, whether innocent or guilty. . . .

"He (Mr. Hunt) was much struck with the skill and despatch with which the practised cannibals performed their work. While it was going on, the old priest was sitting at the door of his temple giving orders, and anxiously looking for his share. All this, said Mr. Hunt, was done with the most perfect insensibility. He could not perceive the least sign of revenge on the part of those who ate them, and only one body was given to the injured party. Some of those who joined in the feast acknowledged that the people of Lauthala were their relations, and he fully believes that they cooked and ate them because they were commanded to do so."

Thirteen years after the visit of Admiral Wilkes, the Fijis were visited by Captain, now Admiral, Erskine, who, in his sensible and judicious work, "A Voyage to the Southern Pacific," confirms the statements of Admiral Wilkes, adding some striking details of his own. The missionaries furnished him with the particulars of one

incident which had occurred but a year before his own arrival. It was to this effect. The chief of Bau, Tahkambau, the most powerful of the Fiji group, and the same who offered to make over the sovereignty of all the islands—which, however, it turned out was not all his to give away—to Her Majesty Queen Victoria, had been entertained by a neighbouring and friendly chief, when part of the feast consisted of two dead human bodies. The would-be ally and tributary of Queen Victoria had to give a feast in return; but having no disposable victims at hand, he had recourse to a stratagem to obtain the requisite supply of human flesh. "Not being at war," says Admiral Erskine, "he laid an ambush for a neighbouring village, and caught fifteen women who were employed seeking for shell-fish on the beach." All were slaughtered except three, whose lives were saved at the entreaties of the intrepid wives of the missionaries, who rescued them at the imminent risk of being eaten themselves,—of one to whom the queen took a fancy to save for a slave, and of another who had died of the wounds she received when captured.

The reply which Admiral Erskine received from King Tahkumbau, when he remonstrated with him on the abomination of cannibalism, was, "It is very well for you to remonstrate who have plenty of beef (bula mau), but we have no beef but men."

According to the information furnished to Admiral Erskine by the missionaries, the Fijian language has no special name for a corpse, except the one (bakola), which at the same time implies the eating of the body, a notion, however, from which I must take leave to dissent, since the Fijians, like all other cannibals, never eat the flesh of friends or relatives. However, it seems certain that the only distinction they make between the flesh of a hog and that of a man, is to designate the first as "true or ordinary," and the last as "long," in the native language respectively, "puäka diva" and "puäka balava." It would appear from this that pork is the ordinary flesh of the Fijians—their beef and mutton, while human flesh is a luxury, as it were,—the Fijian venison.

But the Fijians have what is equivalent to our deer parks. "The supply of human flesh," says Admiral Erskine, "was formerly in all parts of Fiji, and is still in the districts to which the influence of the missionaries has not extended, furnished from different sources, the luxury being denied to women and slaves, although they, too, are supposed sometimes to satisfy their curiosity or inclination in secret. All enemies killed in battle are, as a matter of course, eaten by the victors, being previously presented to the spirit." This source of supply, to which it is now believed that all the Negro races of the Pacific have recourse, as well as the bodies of shipwrecked persons, is by no means sufficient for the demand of the Fijians, whose customs require on oc-

casions of ceremony, when strangers of consequence are entertained, that the magnificence of the chief shall be exhibited by a feast of human victims. The method of furnishing these is by kidnapping neighbours, generally females.

But cannibalism, with some races, long continues to prevail even after civilisation has made considerable advances. Inveterate custom sanctifies it, and it then takes the form of a religious ceremony, bearing, as it were, a vile resemblance to the Christian grace before meat. Even in the purely cannibal state, the practice has a religious form. Thus, the Fiji Islanders always offer the dead bodies of their victims to the "spirit" before beginning to devour them. The gods of savages and barbarians, propitiated by sacrifices, are always evil and malignant, for the beneficent deities are not supposed to require them. Even the Hindu religion is not exempt from this evidence of barbarism; for out of its three great deities, the Creator has neither temples nor worshippers, while the temples and worshippers of the Destroyer, and those of his ferocious spouse, whose image is usually adorned with a necklace of human skulls, are far more numerous than those of the Preserver.

The most remarkable example of cannibalism in the state of society now referred to, is that of the Mexicans when first seen by the Spaniards. Among animals they had, indeed, domesticated the turkey only; but this was a native of their own country, and abundant, and their lakes and rivers abounded in fish. They possessed one cereal, the maize, and they had a knowledge of gold, silver, copper, and bronze. "Human sacrifices," says Prescott, "have been practised by many nations, not excepting the most polished nations of antiquity; but never by any on a scale to be compared with those in Anahuac. The number of victims immolated on its accursed altars staggers the faith of the most unscrupulous believers. Scarcely any author pretends to estimate the yearly sacrifices at less than 20,000, and some carry them as far as 50,000."

On the same authority, at the dedication of a great temple in the city of Mexico, bearing a name composed of seven syllables, requiring sixteen Roman letters to express it according to the Spanish system of orthography, 70,000 captives are said to have perished, as Mr. Prescott justly adds, "at the shrine of this terrible deity." Captives had been reserved for several years for the purpose of this dedication, and the executions went on for several days. The event took place in 1486, or only six years before the discovery of America, so that there could be no doubt of the occurrence, although there may be some exaggeration in the account given of it.

The act of cannibalism with the Mexicans formed an inevitable

part of the ceremony. "The most loathsome part of the story," says Prescott, "the manner in which the body of the sacrificed captive was disposed of, remains to be described. It was delivered to the warrior who had taken him in battle, and by him, after being dressed, was served up as an entertainment to his friends." It may be presumed that the meat market of Mexico must have been over-supplied when the massacre of 70,000 prisoners took place in honour of the god with the ugly name and uglier attributes.

"It was customary," says Prescott, "to preserve the skulls in buildings appropriated to the purpose, and the companions of Cortez counted 136,000 in one of these edifices. We shall see in the sequel of this paper that a similar practice obtained in other regions far away from Mexico.

The Batak nation of Sumatra (the *k*, or a letter of the same sound in the alphabets of the Malayan class of languages at the end of a word represents a soft aspirate) affords an example of cannibalism, even more remarkable than that of the Mexicans, considering that this people are in some respects more advanced than the American nation, and are not abetted by their neighbours. Their agriculture embraces corn, pulse, roots, and fruits; and for domesticated animals they possess the dog, the hog, the buffalo, the goat, and the domestic fowl. They have received, moreover, a tincture of Hinduism; but above all they have a national literature, written in a character of their own invention. With all these seeming advantages, it must be added that they occupy a small, poor, and isolated quarter of the island of Sumatra; and that, although speaking the same tongue, they are split into many separate and hostile states. This people has resisted the Mohammedanism to which the principal nations of the island have been converted for six centuries; and at this moment they are unquestionably man-eaters. Their cannibalism was hinted at as early as the time of Marco Polo,—was repeated by subsequent travellers, and confirmed by the careful inquiries of my friend, Mr. Marsden, in his "History of Sumatra," eighty two years ago. The cannibalism of the Bataks, however, is a mitigated one. They eat only their enemies; and among these they reckon not only prisoners of war, but criminals guilty of capital offences, among which they include adultery. But, unless in extraordinary cases, the prisoner of war can be ransomed, and even the criminal be pardoned for a pecuniary fine. Occasionally, however, it appears that a slave is killed and eaten, so that, probably, the ceremony is of a religious character.

My late clever and enterprising friend, Sir Stamford Raffles, is of opinion that Mr. Marsden's account of the cannibalism of the Bataks does not go "half far enough." My own opinion is that

Mr. Marsden's account is quite adequate, and that Sir Stamford's own is, to say the least, much coloured; and in this I am confirmed by the testimony of Mr. Anderson, who visited the country of the Bataks of the eastern coast of the island, as well as by that of Dutch writers, whose countrymen, having conquered and annexed two Batak provinces on the western coast of the island, have necessarily possessed the best means of ascertaining their manners and customs.

This is Sir Stamford Raffles' account of the country of the Bataks:—"The state of society you will admit to be peculiar. It is calculated that not less than from sixty to a hundred are thus eaten in a year in time of peace. The coast" (the only part which he himself saw) "is but thinly inhabited; but in the interior the people are said to be 'as thick as the leaves of the forest.' Perhaps the whole nation may amount to between one and two million of souls." Now, upon this passage, I must observe that the average of the population thus estimated for a mere corner of the great island equals one-third part of the estimated one of the whole islands, while of the two districts annexed by the Dutch, most probably not the worst, the country is described as a treeless, parched, and barren desert, with here and there a well-watered, and therefore fruitful valley.

Mr. John Anderson's account, written in 1822, or two years after that of Sir Stamford Raffles, with far better means of information, is as follows:—"I am fully justified, then, not only from what I witnessed, and the proofs now in my possession, but from the concurring testimony of the most respectable and intelligent natives whom I met, in asserting that cannibalism prevails even to a greater extent on the east coast of Sumatra than, according to the accounts received, it does on the west. For the sake of humanity, however, be it mentioned that it is rapidly decreasing as civilisation and commerce are advancing. It is not for the sake of food that the Bataks devour human flesh, but to gratify their malignant and demon-like animosity against their enemies." Recent Dutch authorities confirm the cannibalism of the Bataks, but state, at the same time, that such of these people as have become Dutch subjects are easily dissuaded from continuing the practice.

A strange story had at one time obtained belief, that Batak children put their aged parents to death, and devoured their flesh with a sauce of lime-juice, capsicum, and salt. I believe the story, at least in so far as the devouring of the flesh is concerned, a pure fiction, and most probably the invention of the Malays, among whom I have myself often heard it. Sir Stamford Raffles seems, however, to believe that it once prevailed, and gives the following account of it:—"On expressing my surprise at the continuation

of such extraordinary practices, I was informed that formerly it was usual for the people to eat their parents when too old to work. The old people selected the horizontal branch of a tree, and quietly suspended themselves by their hands, while their children and neighbours forming a circle, danced round them, crying, 'When the fruit is ripe, then it will fall.' The practice took place during the season of limes, when salt and pepper were plenty; and as soon as the victims became fatigued, and could hold on no longer, they fell down, when all hands cut them up and made a hearty meal of them. The practice, however, of eating the old people has been abandoned, and thus a step in civilisation has been attained; and, therefore, there are hopes of future improvements."

Now, as the main motive of all cannibals in eating human flesh is notoriously the gratification of revenge, while they hold in horror the eating of the flesh of their friends, it is certain that there could be no gratification of revenge, or even carnal satisfaction, on the part of children in devouring the withered bodies of parents. But, even in the details of the narrative as given by Sir Stamford Raffles, there exist circumstances which invalidate its truthfulness. Thus, the ceremony is asserted to be practised during the season of limes, and when pepper and salt are plenty. But it so happens that in the country of the Bataks, so close to the equator, the lime and the capsicum are ripe at all seasons; nor am I aware of any special time of the year when salt can be more cheap than another in a country having access to the sea on its eastern and western coast. But the fact is, that my friend, Sir Stamford Raffles, was rather prone to write sensation letters, and the more so when writing to a lady, that lady, too, in the present instance, being a duchess.

Yet the entire story may not be a fiction, although that part of it which includes the devouring of the flesh of parents by their children be a monstrous and incredible romance. That at one time the Bataks may have put their superannuated parents to death, and this even in the manner stated, is not improbable. I come to this conclusion from finding that the same practice still obtains among the cannibals of the Fiji Islands, differing only in the manner of the execution. It is thus referred to by Admiral Erskine. "The ceremonies," says he, "attending the inhumation of living persons have often been witnessed by Europeans. The only difference in the case of a chief is, that a bed is formed at the bottom of the grave, consisting of the bodies of his previously strangled wives; the earth being then hastily thrown in and stamped down so as to drown any expression of agony from the sufferers. This strange and unnatural practice, which is so common that an aged or decrepit person is rarely seen among the Fijians, is excused under various pretences, and offers a strong

contrast to the customs of the Tongans (of the fair and sleek-haired race), who esteem the care of the old as one of their religious duties."

The story told of the Bataks is of the same character with that told by Herodotus of an Indian nation who killed and ate their sick—the men being the executioners of the men, and the women of the women; while he describes the same people as sacrificing superannuated persons to their gods, and ending the ceremony by eating their flesh. Although the historian states all this only on hearsay, to judge by the practice of the Fiji islanders, and probably even of the Bataks of Sumatra in former times, there is, probably, a foundation of truth in his story, bating the eating of the flesh and the killing of the sick. We can fancy that we see in the human sacrifices the remains of a ceremony which was complete only when the flesh of the victim was eaten. If so, in this incomplete state, it existed among the civilised Greeks and Romans, down to a very late period. It existed in Peru at the same time that human flesh was devoured in Mexico; and the selected victim with the Peruvians was a beautiful child or spotless virgin.

In Borneo, among the Dayaks (a Malay word, equivalent to our word "savage"), man-eating seems to be in progress of abolition; but the immolation of enemies, chiefly for their heads to be preserved as trophies of victory, and for superstitious uses, is very general among the hundred different, and always hostile, aboriginal tribes which inhabit the interior of that vast island. The practice of hoarding skulls seems, indeed, to be as prevalent as in ancient Mexico itself; but it is but rarely that the flesh of the prisoner is eaten; and this, as well as their abstaining from killing the women, at least the young ones, and the children of their enemies, argues an advance in civilisation far beyond the Fijians.

About the year 1828, a very intelligent, and in my opinion faithful, English traveller of the name of Dalton, lived for eighteen months among the Kayans, the most numerous and advanced of the native tribes of Borneo, and under the protection of its chief, whose name was Selji. This chief he accompanied in one of his predatory incursions into an enemy's territory. Mr. Dalton very graphically describes the proceedings of the savage host, whose march was by canoes on a river. "After paddling all night without intermission," says he, "half an hour before daylight they pull the boats up the banks amongst the jungle and thick trees, so that from the river it is impossible to see them, or discover the least trace of their route. Here they sleep, and feed upon monkeys, snakes, or any other animals they can reach with their blow-pipes; wild hogs are their favourite food, and they are in abundance. If these fail them, the young sprouts of certain trees and wild fruit will answer the purpose. Nothing comes amiss to the stomach

of a Dayak. Should the Raja want flesh, and it cannot be procured with the blow-pipe, one of their followers is killed, which not only provides them with a good meal, but a head to boot."

The onslaught, on the surprise of a hostile village, is thus described by Mr. Dalton:—"About twenty minutes before daybreak, they commence operations by throwing on the thatches of the huts lighted fire-balls, made of the dry bark of trees and resin, which immediately involves the whole in flames. The war-cry is then raised, and the work of murder commences. The male inhabitants are speared, or more commonly cut down with the mandow (cutlass), as they descend the ladders of their dwellings in attempting to escape the flames which, as Selji remarked to me, gave just sufficient light to distinguish a man from a woman. The women and children, endeavouring to gain the jungle by the well-known paths, find them already occupied by an enemy from whom there is no escaping. They, of course, surrender themselves, and are collected together on the appearance of daylight."

The main object of these horrible raids is the obtaining of "heads;" and Mr. Dalton proceeds to describe the uses to which they are put, thus:—"After the women and children are collected, the old women are killed, and the heads of the men cut off. The brains are then taken out, and the heads held over a fire for the purpose of smoking and preserving them. The women and children are only secondary considerations: the heads are what they want, and there is no suffering. A Dayak will not cheerfully endure to be recompensed by a single one. From the last excursion, Selji's people brought with them seven hundred, of which two hundred and fifty fell to the lot of himself and his sons. Many of Selji's people are cannibals. Some, however, will not eat human flesh, whilst others refuse to do so except on particular occasions, as a birth, a marriage, or a funeral. All these events are celebrated with fresh heads. Nothing can be done without them. All kinds of sickness, particularly, are supposed to be under the influence of an evil spirit, which nothing can so well propitiate as a head."

It will appear from this description that cannibalism is on the wane among the Kayans, and, indeed, this is what might be expected, since this tribe, as well as the other principal wild tribes of Borneo, have made a very considerable social progress, as evinced by their possession of the domestic dog, hog, and common fowl, their cultivation of corn, roots, and fruits, their culture of cotton, and manufacture from it of textile fabrics, but, above all. by their possession of the art of making malleable iron, an advantage never attained by any tribe or nation of America or the Pacific—not even by the earlier savages of Europe, the contemporaries of extinct animals. In fact, the aborigines of Borneo have passed the stone period of society, but are still only in the beginning of the metallic stage, for they have no domestic animal adapted

to labour—the ox, the buffalo, and the horse, possessed by all the more civilised nations of the archipelago, being unknown to them.

The conclusions to be drawn from the principles which I have endeavoured to lay down and illustrate in the course of this paper may be briefly stated. I suppose it, then, highly probable that all the races of man, in their tedious march towards civilisation, must have passed through all the stages which I have described, not excepting the stage of cannibalism.

Of the first stage, or of man's condition when he first appeared on earth, with faculties as yet undeveloped by necessity, we can, of course, produce no examples; but what it must necessarily have been is obvious. He was more naked than the beasts of the field, and in this respect came only to be on an equality with them after he had robbed them of their clothing. His food consisted of raw flesh, or of raw fish cast dead on the shore. To this he added a few wild roots and fruits, also eaten raw. His dwellings consisted of caves and the hollows of old trees. In this matter, therefore, he was only on a parity with the bear and the opossum, but far worse accommodated than the beaver, or even the fox and hyena. So must, in the beginning, have lived the first parents of all the races of man.

The second stage of man's progress, as already explained, was produced by increase of his own numbers, decrease in the number of the lower animals which furnished him with food, or increase in the difficulty of capturing his prey, through its acquired wariness. The superior qualities of his brain were now called into exercise to enable him to surmount these obstacles. Then were invented implements of stone and bone, with fire to produce warmth in aid of scarcity of clothing first, and eventually to render esculent by cooking articles that were uneatable without it. This was the first period of the stone age, that in which man lived almost exclusively by hunting and fishing. In this stage of difficult subsistence, and rancorous hatred of one tribe to another contending for food, most probably began the practice of eating one another's flesh.

In the third stage, the implements still of bone or stone, there were probably added the net and the canoe, and a few plants began to be cultivated, and in some places a few animals to be domesticated. This was found to be the state of society in the two great islands of Hispaniola and Cuba, among the Antilles, when first discovered, and of several of the islands of the Pacific Ocean, in some of which cannibalism had ceased, while it was generally continued.

In Asia and its islands we have no example of a people in the stage just named, and we are only assured of its having once existed in Europe through the discoveries of modern science. The pile-builders of the Swiss lakes appear to have been exactly in this stage. They lived chiefly on game, fish, and wild fruit, but they seem also to have domesticated the goat, the sheep, the dog,

the hog, and the ox, while they cultivated wheat and barley. Neither they nor their immediate predecessors can be shown to have been cannibals, but the great probability is that both were so, unless they differed wholly from other races of man in other regions that are satisfactorily shown to have been so. In the lowest stage of the same category must be included the ancient Caledonians of Caithness, as their character is exhibited by the curious and instructive discoveries of Mr. Laing.

The fourth and last period commences with the discovery of the metals, bronze and iron, and their substitution for bone and stone. The progress of society then became rapid, and we have abundant examples of it in its very beginnings, on sufficient historical evidence. It was the state of society in France, Germany, Spain, and the most civilised part of Britain two thousand years ago: cannibalism had ceased, but human sacrifices continued, and in France and Britain to a hideous extent. With the exception that they did not partake of the flesh of their victims, the ancestors of most of the present civilised nations of Europe were in the same state as are now the Bataks of Sumatra, and the Dayaks of Borneo, due allowance made for the vast superiority of the race they belonged to.

It is obvious that the progress made by man towards civilisation and the abolition of cannibalism must depend on the quality of the race and the conditions, favourable or unfavourable, in which his lot had been cast, and their means of receiving instruction from people more advanced than themselves. The two last conditions were totally wanting to the Australians and New Zealanders, and hence they were savages and anthropophagi, and left to themselves must have ever continued to be so. In the islands of the Pacific, and in the greater part of the American Continent, the conditions existed, but very partially and imperfectly, but to the extent to which they did they produced a result which showed a considerable improvement on the Australians and New Zealanders, yet still without producing the general extinction of cannibalism.

The conditions of physical geography, including fertility of soil and the possession of animals amenable to domestication, and of plants to cultivation, were highly favourable in Italy, Greece, Egypt, Assyria, Persia, India, and China, and in these civilisation is of high antiquity, the progress made by each varying with the quality of the race. In Northern and Western Europe, the quality of the race of man was of the highest order, but the conditions under which it was placed were unpropitious, and its advance proportionally slow, and would have been still slower had it not been aided by the instruction of the oldest civilisations of Europe. It was in this quarter of Europe that cannibalism probably, and human sacrifices certainly, lingered the longest.

## X.—*The Arctic Highlanders.* By C. R. MARKHAM, ESQ.

[*Read March* 21*st*, 1865.]

THE ethnological results that may be expected from North Polar Exploration have been under the consideration of the Council of this Society, and I therefore trust that a review of all we now know of the most northern inhabitants of the earth may be looked upon as a subject of sufficient interest, at this time, to engage your attention. Such a review will have the effect of taking stock, as it were, of our present knowledge, and of recording the data on which an opinion may be formed of the value and importance of future research.

It must be understood that by the most northern inhabitants of the earth I do not mean the whole Esquimaux race, but only that interesting tribe which dwells far to the northward of any other, at the head of Baffin's Bay.

In a paper read before the Geographical Society, I endeavoured to trace the origin and migrations of this tribe, and of the Greenland Esquimaux generally, from the cradle of their race in Northern Siberia, all along the shores of the Parry Islands, until they reached their present home in Greenland; and I pointed out the reasons for supposing that wanderers may probably be inhabiting far more northern lands even up to the very Pole itself. It will not, therefore, be necessary to dwell upon this part of the subject; but, in examining the habits, language, mode of life, and appearance of the Arctic Highlanders, I shall take occasion to point out such circumstances as appear to favour my theory of their origin.

The country with which we shall have to do, the home of the Arctic Highlanders, is that strip of land on the eastern side of Baffin's Bay and Smith Sound, which is bounded on the south by the Melville, and on the north by the great Humboldt glacier; and in the first place it will be as well to enumerate the voyages which have brought this region to our knowledge, and to examine what manner of country it is which supplies a home for this outlying piquet of humanity.

On the 1st of July, 1616, Baffin steered the little *Discovery*, of fifty-five tons, into the open water at the head of Baffin's Bay, which "anew revived the hope of a passage". The old navigator refrained from scattering the names of all the great men of his day and of all his friends and acquaintances round the head of the bay. He only gave names to eight of the most prominent features—namely, Cape Dudley Digges, Wolstenholme Sound and

Island, Whale Sound, Hakluyt Island, and Smith, Jones, and Lancaster Sounds. He anchored in Wolstenholme and Whale Sounds; but it is not stated that he landed, and as the weather was bad, he probably did not, so that he did not see any of the inhabitants. But no doubt they were watching him with extreme astonishment, from behind rocks, as is their wont, and the appearance of this strange apparition in those silent seas must have been the subject of a tradition in the tribe.

Baffin, then, was the first navigator who forced his way through the ice-barrier drifting south, and entered the "North Water"; but it was left to Sir John Ross to discover the existence of inhabitants on its shores. His account of them, though containing several errors, is given in perfect good faith, and due allowance must of course be made for mistakes of interpretation.

After an interval of just two centuries, Captain John Ross followed Baffin into the "North Water", and was the first European who had intercourse with the inhabitants of its shores—whom he called "Arctic Highlanders". They came off to his ships over the ice, in small parties, between the 9th and 16th of August, 1818, and he took much pains to obtain all possible information from them, through his Esquimaux interpreter, John Sackheuse; but he did not land to examine their huts. Sackheuse evidently understood their dialect very imperfectly, and he told Ross strange stories about a mountain of iron, a king called *Tuloowah*, who lived in a large stone house, and other marvels. But all that poor old Sir John saw with his own eyes, respecting the dress and appearance of his visitors, their sledges and implements, he describes with truth and accuracy.

Sir John Ross led the way into the "North Water", and he was followed during many years by a fleet of whalers who, doubtless, occasionally communicated with the "Arctic Highlanders"; but we have no record of these visits, if any such took place. In 1849-50 the *North Star* (store ship) wintered in Wolstenholme Sound, and her crew had most friendly relations with the natives throughout the period of their stay; and in August 1850 H.M.S. *Assistance* (Captain Ommanney), with her tender, the *Intrepid*, communicated with the natives at Cape York. The *Intrepid* also went into Wolstenholme Sound; and we took on board a young Arctic Highlander, of whom I shall have more to say presently, as he afforded an excellent opportunity of forming a judgment of the characteristics of this interesting people. The other discovery ships of 1850-51 (*Lady Franklin* and *Sophia*, under Captain Penny; *Prince Albert*, under Captain Forsyth; and *Felix*, commanded by Sir John Ross) also had intercourse with the natives at Cape York. In August 1852 H.M.S. *Resolute* (Captain Kellett) touched at Cape York; and in the same year Captain Inglefield,

in the *Isabella*, visited the natives of the Petowak glacier, and at a settlement about twenty miles from Cape Parry. Dr. Kane did not see them until his schooner was frozen in for the winter on the eastern shore of Smith Sound, but he afterwards formed most intimate relations with them during 1853-54-55. One of his officers, Dr. Hayes, was living amongst them for several months, and they saved the lives of Kane and his whole crew. Finally, Sir Leopold M'Clintock, in the *Fox*, communicated with eight natives off Cape York, on June 27th, 1858. They asked after Dr. Kane, and immediately recognised the Danish interpreter, Petersen, who served both in the expeditions of Kane and M'Clintock. At Godhavn Sir Leopold received a request from the Royal Danish Greenland Company, through the Inspector of North Greenland, to convey the tribe of Arctic Highlanders to the Danish settlements in Greenland; and, he says, "had the objects and circumstances of my voyage permitted me to turn aside for this purpose, it would have afforded me very sincere satisfaction to carry out so humane a project".*

It is from the accounts of writers and other observers who have served in these different voyages, and more particularly from the works of Dr. Kane and Dr. Hayes, that our knowledge of the "Arctic Highlanders" is derived.†

The home of these people of the far north is between latitudes 76° and 79°, just on the verge of the unknown Polar Region. It is a deeply indented coast-line of granitic cliffs, broken by bays and sounds, with numerous rocks and islands, and glaciers streaming down the ravines into the sea. To the south it is bounded by the glaciers of Melville Bay, which now bar all progress in that direction, insomuch that when John Sackheuse told Captain Ross's visitors that he came from the south, they replied—"that cannot be, there is nothing but ice there".‡ To the northward, in like manner, a glacier bounds their hunting ground; while inland the mighty *Sernik-soak*, or great glacier of the interior, confines them to the sea-coast, and to the shores of fiords and islands.

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* Fate of Franklin, p. 138.

† 1. Sir John Ross's First Voyage, 1818; 2. Parker Snow's Arctic Voyage, 1851; 3. Osborn's Stray Leaves, 1852; 4. Markham's Franklin's Footsteps, 1853; 5. Sutherland's Journal, etc., 1852; 6. Inglefield's Summer Search, 1853; 7. Arctic Miscellanies, 1853; 8. McDougall's Voyage of the *Resolute*, 1855; 9. Kane's Arctic Explorations, 1836; 10. Hayes's Boat Voyage, 1857; 11. Rev. J. B. Murray's Account of Erasmus York; 12. M'Clintock's Fate of Franklin, 1860. *Vocabularies*—1. Balbi, Atlas Ethnographique; 2. Washington, Esquimaux Vocabularies; 3. Fabricius, Greenland Dictionary; 4. Ross's Second Voyage; 5. Parry's Second Voyage: 6. Krantz's Greenland; 7. Egede's Greenland. *Siberia*—Strahlenburg; Wrangell; Hooper's Tents of the Tuski; Dr. Simpson's Report.

‡ The distance from Cape York to Upernavik, the nearest inhabited land to the south, is about two hundred and fifty miles.

The vast interior glacier sends down numerous branches to the sea, the ends of which break off and form a great annual harvest of icebergs. The rocky coast, between these streams of ice, is for the most part of granite formation, and in many places is richly covered with soft moss, and numerous wild flowers, besides dwarf willow. The flora of this land consists of forty-four genera and seventy-six species as yet discovered; among which there are four kinds of ranunculus, fourteen crucifers, including three kinds of scurvy grass, several pretty little stellarias, potentillas, and saxifrages, seven of the heath tribe, a dwarf willow, a fern (Cystopteris), and numerous mosses and grasses. Dr. Donnet speaks of the fertile valleys of Wolstenholme Sound, covered with moss, over which, as he walked, he felt as if Persia had sent her softest material to give comfort to the Arctic Highlander. It is fair to add that he wrote this sentence when frozen in off the more barren shores of Griffith Island.

But it is on the condition of the sea, much more than of the land, that the suitability of a region for human habitation depends within the Arctic Zone; and although Greenland is infinitely richer in vegetation, and abounds more in animal life, than the dreary archipelago to the westward, yet without open water in the winter it would be uninhabitable. The ice drifting south in the spring leaves a large extent of navigable sea at the head of Baffin's Bay during the summer—known as the "North Water"; while the currents and the innumerable icebergs, always in motion and ploughing up the floes, keep up open pools and lanes of water throughout the winter.

Such is the country which supports a multitude of living creatures, in a temperature where the mean of the warmest month is +38 and of the coldest —38, in a climate where there are furious gales of wind, where the year is divided into one long day and one long night, but where, in the glorious summer, in the calm and silent sunny nights, may be seen some of the most lovely scenery on this earth. No rich woodland tints, little diversity of colouring; all its beauty dependent upon ice and water, and beetling crags, and strange atmospheric effects, but still most beautiful. The land between the shore and the glacier is the abode of reindeer, musk oxen, wolves, bears, foxes, hares, and lemmings; of ravens, falcons, owls, ptarmigan, willow grouse, snow bunting, dotterels, and phalaropes; while the aquatic birds come in tens of thousands to breed on the crags and islands—king ducks, eider ducks, long-tailed ducks, and brent geese; looms, dovekeys, and rotches in millions, skuas, ivory and silver gulls, burgomasters, mullemukkes, kithwakes, and Arctic terns. Above all, so far as man's existence is concerned, the open pools and lanes of water are crowded with seals (hispid and bearded), walrus, white whales, and narwhals,

and these again betoken the existence of fish, molluscs, and minute marine creatures in myriads.

Here, then, is a region where man, too, might find subsistence, and here accordingly we meet with a hardy tribe of men, numbering, according to Dr. Kane's calculation, about 140 souls. They are separated in eight or more settlements, scattered along the coast from the Humboldt to the Melville glacier. The names of these settlements, according to York, who marked all their positions on his chart, are *Anoatok*, in Smith Sound; *Etah*, near Cape Alexander; *Pikierloo, Idkalloo, Peteravik, Netlek*, in Whale Sound; *Omenak*, where the *North Star* wintered; *Ahipa* and *Imnagen*, at Cape York. These are the permanent winter settlements, but in summer they pitch their tents wherever they are likely to find the best hunting ground.

This remarkable tribe is decidedly of Asiatic affinities so far as the outer man is concerned. The men we saw at Cape York averaged about five feet five inches in height; but Dr. Kane describes the first native he met with as a head taller than himself, and extremely powerful and well built. They are generally corpulent and fleshy, and so heavy that it is difficult to lift a full-grown man. The forehead is narrow and low; nose very small; cheeks full and chubby; mouth large, lips thick; eyes small, black and very bright; beard scanty and hair black and coarse. The hands and feet are small and thick. They are possessed of great strength, endurance, and activity; and are on the whole intelligent. This description, most of which I have copied from my journal, would answer as well for some of the northern tribes of Siberia as for the Arctic Highlanders; and I may add that when poor York went to the Great Exhibition everybody thought he was a Chinese.*

Their winter habitations mark them as a peculiar people, quite distinct from the Esquimaux of America; for while the latter always live in snow huts, the Arctic Highlanders build structures of stone. These stone *igloos*, though quite unlike the winter homes of the American Esquimaux, are precisely the same as the ruined *yourts* on the northern shores of Siberia, and as the ruins found in all parts of the Parry Islands. They thus furnish one of several clues which point to Siberia as the original home of these people.

The *igloo* of the Arctic Highlander is built of large stones, carefully and artistically arranged, in an elliptical form. The sides gradually approach each other, and the roof is covered over

* The descriptions given by Dr. Simpson of the tribes in Kotzebue Sound, and by Lieut. Hooper of the Tuski on the Asiatic coast, show that these people closely resemble the Arctic Highlanders in outward appearance.

with long slabs, at a height of about five feet eight inches from the ground, the outside being lined with sods. The entrance is by a tunnel about ten feet long, with barely room enough for a man to crawl through—called *tossut;* and just above there is a small window with dried seals' entrails stretched over it. The dimensions of the interior are about twelve feet by ten, and half of it is taken up by a raised platform which is covered with dried moss and bear skins, and serves as a bed for the whole family. On the walls hang skins, fowl-nets, whips, and harpoon-lines; and the furniture consists of shallow cups of seal-skin, the soap-stone lamp (*kotluk*) with its supply of oil and moss-wicks, and racks of rib-bones lashed together crosswise, on which the clothes are dried. The cups are for receiving the water as it melts from a lump of snow, and flows down the shoulder-blade of a walrus, placed on stones. This is their sole cooking operation; for the boiling of soup made of blood, oil, and intestines is only done as an occasional delicacy; and as a rule they devour their food raw, be it flesh, blubber, or intestines, and in enormous quantities. Kane calculates one man's consumption at eight or ten pounds of flesh and blubber, and half a gallon of water and soup. This diet is no doubt wholesome and natural, and, so long as it can be had in sufficient quantity, it preserves the Arctic Highlander in the fine plump condition which characterises him. The heat of the *igloo* is intense, when the ordinary number of a dozen inmates is collected, and it is the usual habit to adopt a complete dress of nature as the indoor attire. It is not, therefore, until the Arctic Highlanders come forth for the chase, that they may be seen in a dress suited to the outer climate. Next the skin they wear a shirt of bird-skins neatly sewn together, with the soft down inwards; over which comes the *kapetah*, a loose jumper of fox-skin, which is, however, tight round the neck, where the *nessak* or hood is attached to it. The *nessak* is lined with bird-skins and trimmed with fox-fur. The breeches called *nannook*, of bear-skin, come down to the knees, and up so as just to be in contact with the *kapetah*, when the wearer is standing upright. If he stoops the whole of his person between the *nannook* and *kapetah* is exposed. On the feet bird-skin socks are worn with a padding of grass, over which come bear-skin boots. By means of their sledges drawn by dogs they can move swiftly to the best hunting-grounds, which are of course well-known; and secure the mighty game, the huge walrus and formidable bears, which are their necessaries of life. No hunters in the world display more indomitable courage and presence of mind, nor more skill and judgment in the exercise of their craft. Their weapons are a lance of narwhal ivory, or sometimes of two bear thigh-bones lashed together, tipped with steel since their intercourse with whalers, and a harpoon. They

also have a knife made from some old drifted cask hoop, which they conceal in the boot. The lance is used in their gallant encounters with bears, and in securing a walrus or seal on the ice, when its retreat has been cut off; the harpoon for the far more dangerous battles with the walrus in his own element. They have bird-nets, with which they catch the little auks and guillemots that breed in myriads on the perpendicular crags; and this employment is also attended with great risk. In the year we visited Cape York, a native told us that several men had lost their lives in netting guillemots on the steep cliffs of Akpa Island. York also told us that his people occasionally, but very rarely, succeeded in killing a reindeer; and Petersen says that the twenty decayed skulls, without lower jaws, that were found to the northward of 79° N., had been killed by native hunters.*

They have no canoes, either *kayak* or *omenak*, and are thus confined to the land and ice; and they probably first obtained the word *omenak* for a ship, from John Sackheuse when he pointed to the *Alexander* and *Isabella*. This ignorance of an appliance which is known to nearly all the Esquimaux tribes, is remarkable. The Arctic Highlanders certainly do not show themselves to be less intelligent than other Esquimaux tribes in contrivances for procuring food and providing for their comfort. I am inclined, therefore, to account for their want of *kayaks* from the circumstances of their position. In the south, from the absence of ice during a great part of the year, the Greenlander is obliged to seek his food on the sea; while in the north there is a land-floe throughout the year, and the Arctic Highlander can harpoon the walrus, narwhal, and white whale from the ice. The necessity which led to the invention of a *kayak* in the one case, does not exist, in so urgent a form, in the other. Hans, the Holsteinborg Esquimaux, who was left behind by Dr. Kane (having fallen in love with a fair daughter of the far north), had a *kayak* with him; but in the winter of 1857-58, being pressed by famine, he and his family were obliged to eat it.

It is more remarkable that the Arctic Highlanders have no bows and arrows, and this is one of the circumstances which conclusively prove that they are not the same people as the Esquimaux of Boothia and Pond's Bay. The great superiority of the sledges of the Arctic Highlanders, compared with those of the Boothia people,† must weigh on their credit side, against the bone bows and arrows, in deciding the comparative ingenuity and intelligence of these tribes.

The hunting season of summer and autumn enables the Arctic Highlanders to accumulate large stores of flesh and blubber which

* M'Clintock, p. 76. † M'Clintock, p. 236.

lasts them until December, but their enormous consumption soon diminishes the stock, and in January and February they begin to feel the pinchings of hunger. Then these indomitable hunters have to come out in the intense cold and contend with the huge walrus on the edge of treacherous ice; while, in very bad seasons, they are reduced to eating their dogs. During the long night they are engaged in mending sledge-harness and preparing harpoon-lines and bird-nets; and the women chew the boot-soles and bird-skins, and make clothes with ivory needles and thread of split seal sinew. Summer brings a bright and happy time of sunshine and plenty. The children drive the babies along in miniature sledges, the boys play at hockey with rib-bones and leathern balls, or catch the rotches with nets attached to long narwhal horns, and the hunters are busy in their attacks upon larger game. All emerge from the dismal *igloos*, and exchange their darkness and filth for the well ventilated seal-skin tents; and thus they move from place to place along the coast.

We now come to the consideration of the important question of language, as an element in the discussion of the origin of these people. It has been argued that the Greenlanders cannot have come from Siberia because their language belongs to the American type of languages, which Du Ponceau has called polysynthetic, and William von Humboldt agglutinative, from their peculiarity of forming all compound words and phrases by adding particles to the root in a certain way. Now, it cannot be denied, that the Esquimaux language certainly does exhibit this peculiarity. It indulges in very long words, such, for instance, as *Aulisariartorasuarpok* (he made haste to go out fishing), which is composed of the three words, *aulisarpok* (he fishes), *peartorpok* (he went), and *pivxesuarpok* (he made haste). *Aglekkigiartorasuamiarpok* is not short. But, at the same time, the grammatical construction, or rather the method of agglutination in the Esquimaux language, is very different from the way of forming compound words in the American languages with which I am acquainted. The truth is, that agglutination is by no means peculiar to the American languages; and Professor Max Müller groups the American with many other languages in Asia and Africa, which he calls agglutinative, not because there is the remotest indication of a common origin, but from the absence of any organic differences of grammatical structure.* There seems, therefore, to be no reason for supposing that the Esquimaux is an American language, owing to its grammatical structure; but in this respect it more

* These languages are called agglutinative, to distinguish them from the inflexion of the Aryan and Semitic tongues, and from the roots of the Chinese.

closely resembles some of the languages of the Siberian tribes. Then, again, the vocabularies of the Greenland language and that of some Siberian tribes contain so many important words alike that their comparison supplies another argument in favour of common origin. The following list contains some words which are identical in the languages of the Greenlanders, and of the Siberian tribes near the Gulf of Anadyr.

| *English.* | *Greenlanders.* | *Siberian.* |
|---|---|---|
| Sun | Sekhinek | Shekenek |
| Moon | Takhek | Tankuk |
| Earth | Nuna | Nuna |
| Water | Imek | Emak |
| Fire | Ing-nek | Eknok |
| Father | Atatak | Ataka |
| Eye | Irsikh | Iik |
| Head | Niakok | Naskok |
| 1 | Attausek | Atashek |
| 2 | Maggok | Makukh |
| 3 | Pingasut | Pingayu |
| 4 | Sittamat | Ishtamat |
| 5 | Tellimet | Tatlimat |

But neither the Arctic Highlanders' vocabulary nor that of the Tchuktches and Anadyr tribes are before us in a complete shape.* It may be understood generally that the languages spoken by all the tribes from Humboldt glacier to Cape Farewell, are but dialects of the same mother tongue; while they are dialects of the languages of Labrador, Igloolik, Boothia, Kotzebue Sound, and some parts of Siberia.

The Arctic Highlanders only have words for the first five numerals, although they make shift to count a little higher, up to twenty; but otherwise their language, though wanting all words to express abstract ideas, is very precise and exact, and few languages are richer in pronominal forms of speech. Their songs are for the most part impromptu, and in the long winter night, while one recites a catalogue of recent events and possibly some traditions, the rest join, with a certain time and cadence, in the ancient chorus—*Amna ajah ajah ah-hu.* Dr. Kane heard this chorus in the *igloos* in Smith Sound, and Krantz records the same words as used by the people of South Greenland. Their religion is very simple. They believe in supernatural beings presiding over the elements, who are the familiar spirits of their *angekoks* or magicians; and that the *angekoks* can converse with them, and thus prophesy the prospects of the hunting season and similar matters. These *angekoks* are not hereditary office-bearers;

* It must be remembered, too, that the Omoki and other Siberian tribes have disappeared altogether, taking their language with them; and, according to my theory, these are the ancestors of the Arctic Highlanders.

but, for the most part, they are the cleverest and laziest fellows in the community. They have a few proverbs and figurative sayings, they perform incantations over the sick, prescribe the nature and amount of mourning for the dead (who are buried under heaps of stones, or sometimes an *igloo* is abandoned and closed up as a tomb), and exercise that general influence which they obtain from their own cunning, and from the traditional respect in which their profession is held. This *angekok* superstition is exactly the same as the Shamanism of the Siberian tribes, as described by Wrangell. There is very little crime amongst these good-natured savages, though the punishments they inflicted on criminals were formerly severe. But in 1858 the people at Cape York told M'Clintock that they had abolished their ancient custom of punishing theft capitally, because their best hunters were often the greatest thieves.

One of the most striking points in the intellectual development of all the Esquimaux tribes is their wonderful talent for topography. The cases of the woman of Igloolik who drew a map for Parry, and of the Boothians who did the same for Ross, and the interesting account of the old lady who conned the *Fox* up Pond's Inlet as if she had been a certificated pilot from the Trinity House, are familiar to readers of Arctic voyages. The same talent was displayed by our shipmate, Erasmus York, on board the *Assistance.* When asked by Captain Ommanney to sketch the coast, he took up a pencil, a thing he had never seen before, and delineated the coast-line from *Pikierloo* to Cape York, with astonishing accuracy, making marks to indicate all the islands, remarkable cliffs, glaciers, and hills, and giving all their native names. "Every rock," says Dr. Kane, "has its name, every hill its significance."

The visitor who first sees a party of Arctic Highlanders will be at once struck by their merry good-natured countenances, their noisy fun, and boisterous laughter. They have a true love of independence and liberty, and their mode of life has bred in them great powers of endurance, cool presence of mind, and indomitable courage. Their ingenuity and skill are by no means contemptible, and their intellectual capacity, though inferior to that of many other savage people, is not altogether contemptible. They do not hesitate to steal from the *Kabluna,* stranger, for whom they cannot be expected to have any fellow feeling; but when confidence is once established, they have proved themselves to be good men and true; they undoubtedly saved the crew of the *Advance* from death which was staring them in the face, and Dr. Kane gives his testimony that "when troubles came upon him and his people, never have friends been more true than these Arctic Highlanders".

We, of the old *Assistance,* can bear witness with regard to one of the members of this northern race, who, by his constant cheerful-

ness and good humour, and his readiness to make himself useful, became a great favourite on board. Through the kindness of Admiral Ommanney he received an education in England, and went afterwards to Newfoundland, where he died. A lady, who wrote to announce his death, thus speaks of poor Erasmus York (Kalahierua): "During his illness, he was as patient and gentle as ever, and thankful for all that was done to relieve him. We all loved him for his true-heartedness, obedience, and kindness of disposition; and I trust that we may not forget the example he gave us of forgiveness and forbearance under injury." The Arctic Highlanders are savages, but they are ingenious and intelligent, courageous as hunters, true and loyal to friends in distress, and capable, after instruction, of the highest virtues of civilised men.

In conclusion, I will sum up the points which, after an examination of the ethnology of the Arctic Highlanders, tend to corroborate the theory of their origin and migrations submitted in my paper read before the Geographical Society. First, then, there is the evidence that they are not branches of any Esquimaux tribe of America or its islands. The American Esquimaux never go from their own hunting range for any distance to the inhospitable north. Except in the case of the Pond's Bay natives, who followed up the whalers for a specific reason in modern times, there is no instance of their having gone north; and it is unreasonable to suppose that they would do so. The American Esquimaux live in snow huts, the Arctic Highlanders in *igloos* built of stone; the former have *kayaks* and bows and arrows, the latter have none; the Boothians use sledges of rolled-up seal skin; the Arctic Highlanders have sledges of bone. We have proofs, also, that the ancient wanderers who left traces along the Parry Islands, were the same tribe as the Arctic Highlanders, and distinct from the American Esquimaux. The ruins on the shores of the Parry Islands are identical with the stone igloos of the Arctic Highlanders, and unlike anything ever built by the American Esquimaux. The pieces of bone sledge runners that were found among these ruins, are the same as those used by the former tribe, while the Boothians (the nearest American Esquimaux) use seal skin runners. The bone which had been cut to form a duct for conducting melted snow into a cup, found by myself on Griffith Island, and the lamp picked up by Osborn on Cape Lady Franklin, are precisely similar articles to those now used by the Arctic Highlanders.

It is unnecessary to repeat the evidence of northern migrations from Siberia, which I gave in my former paper; so we now come to the points of resemblance between the Arctic Highlanders and some Siberian tribes. In physiognomy and general appearance the Esquimaux are Mongolian, and are utterly unlike any Ameri-

can people. The Esquimaux language is unlike any American language; while in vocabulary and grammatical construction it is but a dialect of the language spoken by the Tchuktches, the people in the Gulf of Anadyr, and other Siberian tribes. The *angekok* superstition of the Esquimaux resembles, even in minute particulars, the Shamanism of Siberia. These points apply to the whole Esquimaux race; and, in proving that the Arctic Highlanders are distinct from the American Esquimaux, I do not mean that they are not all the same race, speaking dialects of the same language, but that they have had no communication since their ancestors left Siberia, and, crossing the meridian of Behring's Straits, wandered to the eastward. The American Esquimaux migrated, at some very remote period, from Siberia by way of Behring's Straits; and the Viking Thorwald found them on the coast of Labrador in the tenth century. The migrations from the northern coast of Siberia were later, and were caused by Central Asiatic encroachments from the eleventh to the fourteenth centuries. This exodus took a distinct and more northern route, along the coast of the Parry Islands, to Greenland. Such are the proofs which have convinced me that the cradle of the Esquimaux race is to be found on the frozen tundra of Siberia.

Only a small remnant of these ancient wanderers is represented by the Arctic Highlanders; and, as I have already suggested, many parties, as they arrived, continued their journey both to the south, where they peopled Greenland, and also to the north. As to the Greenland population, the historical testimony of the Norsemen, and the universal tradition of the Greenlanders themselves, unite in affirming that the first Skrœllings came from the north.* This is not the place for critically discussing the value of ancient Icelandic records, nor am I competent to undertake the task; but they have been most ably edited by learned Danes, and are quite as good authorities for history as are the chronicles of Matthew Paris or Roger of Wendover. From them we learn that the Norsemen were the first inhabitants of Greenland, and that the present population first appeared, coming from the north, in the fourteenth century. How it was that the diminutive, though muscular and courageous, Skrœllings overcame and annihilated their gigantic Scandinavian foes, must for ever remain a mystery. It may be that the Normans were first thinned down by disease, and greatly reduced in numbers. One thing is certain: the Normans disappeared, leaving many ruins and runic inscriptions behind them, and the Skrœllings have taken their place. The

* John Sackheuse, when he first saw the Arctic Highlanders, immediately mentioned the universal tradition of his people that they originally came from the north.

modern Danish Esquimaux have detailed traditions of the wars between their ancestors and the *Kabluna*, which are represented in the curious woodcuts brought home by Sir Leopold M'Clintock; and I understand that the Danish gentlemen who have investigated this very interesting subject, are of opinion that these Esquimaux traditions are founded on historical facts.

But it is the northern, and not the southern, migration from the land of the Arctic Highlanders, that now demands our attentive consideration. We here approach the very confines of the great unknown Polar region, and we can discover indications of the existence of a Polar population up to the very threshold of the *Terra Incognita.* Petersen tells us that he saw ruins of stone *igloos* to the northward of latitude 79°, which were evidently upwards of two centuries old; and the runner of a sledge was picked up beyond the Humboldt glacier. Here, then, are the traces of wanderers entering the Polar region. Clavering, in 1823, met with two families in the most northern part of East Greenland, who must have come from Smith Sound, and have wandered completely round the still unknown northern shores of the great glacier-bearing continent of Greenland.* Whales, too, have been caught, as we are informed by Scoresby, with lance-heads imbedded in their hides of a make entirely different from those used by any known people in the world. There are geographical arguments favouring the probability of the existence of a Polar population, which I have touched upon in my former paper; and it only now remains for me to express a confident hope that, after a full consideration of the points which I have very inadequately endeavoured to bring before you this evening, the eminent and learned ethnologists whom I have ventured to address will give their cordial support to the movement in favour of North Polar exploration.

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* We may infer that they did not come from the south, for the same reason that the American Esquimaux have never gone north to the Parry Islands. The East Greenland coast, from the Danebrog Islands to Hudson's "Hold with Hope", is so blocked up with eternal ice that no human being could exist there, certainly none would wander there, from the more genial south.

## XI.—*On the Esquimaux.* By Dr. Rae.

[*Read March* 21*st*, 1865.]

The deep interest which always has been and continues to be felt by ethnologists in the origin, habits, manners, customs, etc., of the Esquimaux, is the only excuse I have to offer for bringing the present paper before this learned society.

There are few races of men about whom a greater diversity of opinion has been expressed than the Esquimaux. By some writers they have been described as stupid, slow, dirty, lazy, false, and idle; in fact little, if at all, raised above the brute creation. By others, who possibly may have had opportunities of seeing these people on a different part of the coast in all their different relations to each other, in their every day life and at all seasons of the year (for winter is the time when the Esquimaux is seen to most advantage, and winter with him forms two-thirds or three-fourths of the year), a higher position among their fellow-men has been assigned to them.

Having visited the Danish settlements in Greenland, Churchill in Hudson's Bay, the mouths of the Coppermine and McKenzie rivers on the Arctic Coast, and passed two seasons at Repulse Bay, and seen the Esquimaux at all these places, I had opportunities of noticing and comparing their peculiarities.

The lands southward of Churchill in latitude 59° N. being claimed by the Indians, the Esquimaux do not go south of that place, and those who trade there, may be considered as partially civilised, as they have in part assumed European dress and habits, and are employed by the Hudson's Bay Company on various services requiring care and attention, which they perform in a satisfactory manner. They are sober, steady, and faithful; generally speaking, honest, and never begging, as is the practice of the Red Indian; comparatively speaking, provident of their own property, and careful of that of others when under their charge. This latter quality is specially evinced by the manner in which they preserve a large boat lent to them by the company to enable them to get along the coast with facility when going to or returning from their hunting grounds. This boat is provided with sail, anchor, and cable, and all other requisites, and is managed by them with the skill of experienced boatmen. At the beginning of winter it is hauled on shore, securely docked, and altogether better cared for than if in the hands of the Company's regular *employées.*

The hunting lands and waters of these extend about five degrees, or 350 English miles, north of Churchill, but they do not permit their more distant countrymen to visit that place, preferring to barter all their own half-worn weapons, tools, cooking utensils, etc., with these, at a much higher price than would be paid for new articles at the trading post, and thus secure a double profit.

The natives are said to be increasing in number on this part of the coast, partly, I suppose, because at Churchill, as at all the Hudson's Bay Company's posts where it can be done, an extra stock of provisions is specially kept, to provide against starvation in seasons of scarcity, to which all places in Northern America are exposed, where animal food forms the sole means of subsistence of the natives. These provisions are always given away or sent to a distance gratuitously when required.

During the season of 1846-7, which I spent at Repulse Bay, we saw much of the natives during the whole time of our stay of twelve months; on the second visit in 1853-4 they were constantly with us for about three months, and I came away on the second occasion with even a better opinion of them than I had done on the first. On both occasions I had a competent interpreter.

With a few exceptions, these people are short of stature, but not dwarfish, being well and powerfully built, long bodied, exhibiting great strength in lifting weights (which I tested to the extent of about 336 pounds), and much activity in running and leaping. Their expression of face was pleasing, foreheads low and broadish, cheek bones high, features rather flat, and the inner angle of the eye points slightly downwards, in the manner commonly noticed in the eyes of the Chinese. With the exception of two intances in which it was fine and wavy, the hair is straight, black and coarse, cut short on the men, who, generally speaking, have not much beard.

The women have very small hands and feet, and when young are plump, solid little creatures, with ruddy agreeable faces, and very fine teeth. Their faces, hands and arms, are always more or less tatooed, and their hair is long and dressed in a peculiar manner, being collected in two bunches, one on each side of the head, and a piece of stick eight or ten inches long by half-an-inch thick being placed among it, a strip of party-coloured deer skin is wound round the whole in a spiral form, and this hangs down on each side of the face. They each carry an ivory comb of native make. Two suits of raindeer skin form the winter dress of both sexes, the dress next the body having the hair inwards, the outside dress with the hair outwards, and which is generally taken off when in doors. The man's dress consists of coat with hood and long flap or tail behind, knee breeches which are met at

the knee by long seal skin boots, and warm deer skin mitts. The woman's dress differs, in that the hood of the coat is large enough to carry a child, and that there is a small flap before as well as at the back of the coat, and in the boots being very wide, coming high up and fastened with a string at the girdle. These immense boots give the women a most ungainly appearance when either walking or running. The summer dress is usually made of seal skin or an old winter dress.

In summer and autumn, or for a period of about four months, from the beginning of June to the end of September, the natives live in tents, which are of two kinds, the one thin and light for warm weather, the other made of deer skin with the hair on, for autumn and early winter, before the snow becomes sufficiently hard packed for house-building, which takes place in October, at which time they move into winter quarters.

The form and mode of construction of the snow house have been so often mentioned that it is almost unnecessary for me to describe it. There is, however, one peculiarity which has not been generally noticed. In a well-built house, the platform of snow that serves as a bed, is always raised above the level of the top of the door, so that the occupants are in the warmer air near the roof and above the cool draft from the door. They also understand perfectly that a house made of ice is colder than one made of snow, for when, in our ignorance or thoughtlessness, we were about to throw water over a snow house that had been built for an observatory, with the idea of making it more air tight, they said, "don't do that, you will make the house cold."

Towards spring, when about to build a snow house, in which they are to live some time, they invariably, when possible, select a deep drift bank of snow, and dig down several feet to get to what they called "warm snow," before building. This "warm snow" had a peculiar rough granular appearance, and must have had great advantages as a building material, otherwise they would not have gone through a great deal of additional, and to me apparently unnecessary, labour, to reach it. Under ordinary circumstances, a snow house large enough for five or six persons can be built in an hour, sometimes less.

Their principal and favourite food is venison and musk ox beef, the latter being preferred, probably because it is generally fatter, and they like the musky flavour. This meat is usually eaten raw, and with it some of the contents of the stomach of the animal, a frozen lump of which is usually seen in every snow house.

The musk ox, after being brought to bay by dogs, is either speared or shot with bows and arrows. The raindeer, on which they place their principal reliance, both for food and

clothing, is killed in three ways. During the southern migration in autumn, they are chased in kayaks and speared whilst swimming across lakes. In this manner great numbers are obtained, sufficient for the whole winter's stock of provisions, as was the case in 1846-7, if the frost does not set in too early, for in that case the lakes freeze over during the migrating season, and the deer are able to cross the lakes on the ice. They are also shot with bows and arrows, and many are caught in pitfalls dug in the snow, which are neatly covered with thin slabs of the same material. The deer are attracted to these pits by tufts of moss placed to windward, the wind being principally from west or north west. I may here notice that the wolf is also caught in pitfalls, but made much deeper, which after being covered over, is surrounded by a low wall over which the wolf has to leap before he can get to a bait placed inside, when his weight breaks through the thin covering and he tumbles in. Were the walls not built, the wolf, in his low, cautious approach, would, by the hollow sound underneath, become aware of his danger and avoid it.

In spring, after the seals come up on the ice, they are approached in a most ingenious manner and killed with a spear or harpoon,* a feat which none of my party (one or two of whom were expert hunters) could accomplish even with the advantage of guns, as the seal on these occasions is most wary, and it is only a very correct imitation of his appearance and movements that can deceive him.

In July the sea ice breaks up near shore, and then salmon for a time form the chief food of the natives. These they enclose by building a slight wall of stones at about half tide mark round the outlet of a small stream, to which these fish resort at high water. When the tide ebbs they remain enclosed, and are then speared, sometimes in great quantities.

During the summer they subsist on wild fowl, deer, and musk cattle, and occasionally bear, walrus, and whale. For killing the two latter, heavy harpoons and extra strong lines are prepared. They generally eat fish, venison, and musk ox beef raw, but prefer seal or walrus flesh cooked. This taste may possibly have been acquired by necessity. Whenever the seal, walrus, and whale are killed, their flesh can be cooked by burning their own oil, but neither raindeer nor musk ox are generally fat enough for this purpose.

It is a mistake to suppose that the Esquimaux must of neces-

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* The Repulse Bay natives do not usually kill the seal in winter, unless forced to do so by their not having made a successful deer-hunt in the autumn. This was the case in 1853-4, when they killed seals in Pelly Bay.

sity have fuel to enable them to procure water to drink. They can pass months, if not the whole winter, without a lamp or fire of any kind. Lakes of good water are abundant, and knowing where these are, they always, when necessary, build their houses on or near one of them. An ice chisel and small scoop of musk ox horn attached to a long handle, are indispensable parts of their travelling equipment, and the quickness with which they can cut a hole through five or six feet of ice is surprising. Their ice chisels were to be sure in beautiful order, more like the tools of a careful and natty carpenter than anything else, and were much superior to ours in the ease with which they chipped the ice. Those we saw on this occasion were formed of pieces of old whale harpoon or lance, ship's bolts, one of them copper or composition, etc., obtained in barter probably from natives living further north, or from Sir J. Ross's vessel, the *Victoria*, abandoned in Regent's Inlet many years before. I only once saw an ice chisel made of stone. It was further to the west, but unfortunately I did not secure it.

The Esquimaux take their principal meal immediately before going to bed, and when supplied with food in the morning they usually kept the larger part for the evening, which was then portioned out in a most impartial manner on a clean parchment deer skin, round which men, women and children sat and ate together. The meat being venison was always preferred raw and frozen.* When they do cook, it is by means of the stone kettles and lamps so often described.

I noticed that the lamp was so admirably managed by the good wife of the house (under whose special care it seemed to be), that each wick of moss gave only a small flame indeed, but bright as gas, and not a trace of smoke appeared. This I tested frequently with a bit of glass, although such test was unnecessary, the fact being indicated by the perfectly pure white of the snow walls of the hut after it had been months inhabited. The smoke from the ordinary lamps, such as we used, with a cotton wick, tinged the walls and soiled our hands, faces, and clothes in a very short time, so that we did not look nearly so clean as our neighbours.

Their principal weapons, tools, and domestic utensils are, bows and arrows, the former made of pieces of wood or deer horn very neatly joined together and strengthened at the back with plaited sinew; seal and walrus harpoons, with line and inflated seal skin attached, smaller harpoon for the lesser seal, shears, lances for killing deer and wild fowl, fish spears and fish hooks; daggers

* I did not perceive that they were much greater eaters than Europeans would be under similar circumstances.

of iron, knives made of hoop iron and other material, snow knives of ivory or bone, snow shovel of wood edged with bone, peculiar saw or groover, drill bow and drill, ice chisel, etc., etc.

The woman's specialities are the cooking and other domestic apparatus, consisting of stone kettles and lamp, lamp moss, fire bag (containing dry grass, wild cotton, and pieces of iron pyrites), a small piece of stone, bone, or ivory about six inches long and half-an-inch thick, for arranging the lamp wicks whilst burning; needles and needle case, thimble of ivory, bone, or leather (which is worn on the fore-finger), sinews for thread, semi-circular knife, scraper for cleaning skins, ladles and spoons made of musk ox horn, buckets of stout seal's skin for carrying water, pieces of bone or ivory, generally curved in shape, pointed sharply at one end and sometimes ornamented at the other, used as a fork for various purposes, such as putting meat into, or taking it out of, the kettle, lifting a piece of blubber into the lamp, etc. Marrow spoons made of bone, several of which are usually carried at the woman's girdle ready for immediate use should a deer or musk ox be killed, the fresh and uncooked marrow from which is justly considered a great delicacy.

Socially the Esquimaux are a lively, cheerful, and chatty people, fond of associating with each other and with strangers, with whom they soon become on friendly terms, if kindly treated. Some of them, whilst living near us, were continually in our tents or house, and gave wonderfully little trouble, and whenever they saw either myself or men about to take our meals, they, with an amount of good breeding scarcely to be looked for, immediately got up and prepared to go away. They are also hospitable, for they always prepared food, when they had any, for their visitors.

Their principal amusement in the fine summer weather is a game at ball, which is played in the following manner. Twelve, twenty, thirty, or more persons, divide into partners of two, and are then formed in a circle, the partners being placed opposite to each other. A ball is then tossed from one to the other, which every one attempts to get hold of before it reaches the person for whom it is intended; both men and women play at this game, and my men became very fond of it.

In their domestic relations they are exemplary. The man is an obedient son, a good husband and a kind father, nor did I notice a single instance of harshness either to wife or child. The wife is treated as an equal, and indeed generally rules the establishment, which are said to be *signs of civilisation.*

On meeting a family, the man generally first introduces himself by name, patting his breast, then brings forward his wife, and afterwards his children according to age, naming each in turn, and his face fairly beams with pleasure as small presents

are made to them; although when a present is made to himself, he almost invariably offers something in return, and sometimes expresses his regret that he has nothing more valuable to give.

The women showed great affection for their babies—I particularly mention this, because a very common opinion prevails that they will give away their child in exchange for a knife, file, or other trifle. This mistake has arisen from the mother having pointed to her child and then to the present given herself, meaning, thereby, that you were to give something to the child as well.

The children when young are docile, old-fashioned little creatures. The girls have their dolls, in making dresses and shoes for which they amuse and employ themselves. The boys have their miniature bows, arrows, and spears, with which they hunt the marmot and other small game; little sledges, to which they harness the puppy dogs and train them to haul. In summer they practise the construction of stone caches and crescent-shaped places of concealment for the hunter when watching deer, and in winter the building of snow houses. They thus, whilst amusing themselves, are undergoing a course of education preparing them for their future duties.

When grown up they are dutiful and kind to their parents; so much is this known to be the case, that a large family is considered a great boon, as the old people have then more certainty of being well cared for when they become unable to hunt for themselves. I shall mention one case in illustration of this. The "old man" of the party at Repulse Bay expressed a wish to see his birth-place before he died. His son (who, having a wife, if not two, and several children to provide for, could ill afford to lose so much time), immediately, and with apparent cheerfulness, harnessed his dogs to a sledge, placed his aged father upon it, and took him to the place he wished to visit, which was distant some days' journey. In a similar position an Indian would probably have laughed at his father's request, or, if complied with, have left him there to die. Orphan children are readily adopted and well cared for until they are able to provide for themselves or to assist those who have adopted them.

Generally speaking, I consider the Esquimaux truthful, and that they have the faculty of communicating from one to another any information they may obtain with peculiar accuracy. My position at Repulse Bay gave me a good opportunity of testing this. All the Esquimaux there had heard of, and one or two when young had seen Sir J. Ross's ship, which was shut up by ice in Regent's Inlet from 1829 to 1832, and abandoned there. Also Sir Edward Parry's ships at Igloohill in Fury and Hecla Strait in 1822-3. They so minutely described the appearance of

the commanders of these ships, and also of Sir James Ross, that I could readily recognise them. They told me of various incidents noted in the published journals of these gentlemen with accuracy, and of other events of minor importance not recorded, but which I mentioned to Sir Edward Parry, Sir John and Sir James Ross, on my return, and they acknowledged them to be true.

When dates or numbers are required it is difficult, I should say almost impossible, to obtain very correct information. If only a few years have elapsed, they cannot tell with any degree of certainty on which year any particular event had occurred, although they can tell the season with very considerable accuracy, by referring to the breaking up of the ice in the spring, the migrations of the deer either south or north, or the setting in of winter. As to numbers, if an Esquimaux is asked how many children he has, he will have to puzzle over the question and count on his fingers for a while, before he can give an answer, and probably consult his wife if she is present, and *they* sometimes differ,—the number of the children being not more than four or five. If the numbers are large, such as a herd of deer, crew of a ship, etc, they will desire several persons to hold up their hands with the fingers spread out, and say there is "about so many," or at "least so many."

When Esquimaux are met, who probably have never seen white people before, and with whom you remain only a short time, it is almost impossible to obtain correct information of any kind from them. Nor is this to be wondered at, as they are on those occasions in a great state of excitement, which might fairly be compared to the condition of a peasant fresh from the country during a first visit to London at the time of some great public demonstration.

The Esquimaux are as a rule truthful, but there are two cases in which they were addicted to tell falsehoods, but these were usually so evident as to be easily seen through and to some extent excusable. These instances were when their favourite hunting-grounds lay in the direction in which we intended to travel, or when they had "caches" of provisions or other articles on the way. They would then tell all sorts of improbable tales to induce us to follow another road, such as, that the snow was bad and would not produce water fit to drink; that there were no lakes, that there were steep rocks and hills on the way; that we would see neither Esquimaux nor game, and that we should starve; and other stories to the same effect. They could not believe that the only cause for our coming so far to visit their lands was to explore a coast or search for our lost countrymen; but that we were in search of food also, and they knew that with our guns we should either kill or drive away the musk cattle and deer

(on which perhaps their very existence depended both for food and clothing) from these hunting-grounds, and probably rob their caches also.

At first it was difficult to make them understand that when presents were made them nothing was expected in return, and they always expressed by looks and actions, if not by words, their gratitude and thanks for kindness, particularly when shown to their wives, children, or parents. I shall mention one instance in illustration of their gratitude, a feeling almost unknown among the Red Indians. In the spring the young people had to go to some distance to kill seals, and before leaving requested permission for some half dozen of the old men and women to pitch their tents near us, so as in a manner to be under our protection. To this I readily agreed, and also promised to supply them with food should our means permit. As the hunters of my party killed game enough, this we were enabled to do, but I had either to go or send a man to the tents of the old people to find out if they wanted anything, for I believe they would have almost starved sooner than beg. When the Esquimaux hunters returned from a successful seal hunt, two or three of them came with the interpreter to thank me for our kindness to their parents, and on being told that we wished to buy some seal's fat from them, said that we had been so good to them that they would not sell, but give us us much as we wanted for nothing.. Every morning afterwards a large piece of seal's blubber was placed at the door of the cooking tent by some one of the natives, until they were told we had as much as we required.

As far as I could learn, or can remember, their marriage ceremony is very simple. Little girls of six or seven are frequently betrothed to stout young fellows of eighteen or twenty, who take pleasure in pointing out their little fiancées to a stranger. When the child has arrived at womanhood, some presents are made to her parents by the husband, and she is taken to his tent or snow-house.

Polygamy is permitted, but in no instance that I met with had a man more than two wives; there were one or two cases where a woman had two husbands. It is said that wives are sometimes exchanged or lent for a time, with the hope of thereby promoting an increase of family.

They believe in a good and bad spirit, and in a future state of happiness or misery. Their ideal heaven being beautiful hunting-grounds and seas, teeming with all their favourite animal life, and the means of every kind of pleasure and enjoyment; their place of future punishment being in every respect the reverse. They propitiate the evil spirit to prevent him injuring them, as they believe the great spirit to be too beneficent to do so. The

stars are supposed to be the spirits of the dead, and the aurora and meteors are these spirits visiting each other in the heavens.

Their tradition of the formation of the sun and moon is, that not long after the world was formed, a great conjuror or angikak became so powerful that he could ascend into the heavens when he pleased, and on one occasion took with him a beautiful sister whom he loved very much, and also some fire, to which he added great quantities of fuel, and thus formed the sun. For a time the conjuror treated his sister with great kindness and they lived happily together, but at last he became cruel, ill used her in many ways, and as a climax burnt one side of her face with fire. After this last indignity she ran away from him and became the moon. Her brother in the sun has been in chase of her ever since, but although he sometimes gets near will never overtake her. When new moon the burnt side of her face is towards the earth, when full moon the reverse is the case.

Not having my rough notes by me I am unable to speak with certainty of the ceremonies (if any) gone through when a child is born or when a person dies. In the latter case, when a body is buried, if a man the feet of the corpse are pointed towards the sea, if a woman in the opposite direction. No grave is dug, this being a difficult, nay, almost an impossible task (without very strong tools) in the frozen ground, but the dead are placed on the surface and neatly covered up with stones. The Esquimaux have an awe or dread of encamping near to a grave or burying ground. They appear to have no recognised or hereditary chief, but usually some elderly man, more brave, wise, and a better hunter than the others, is recognised as a leader among them. They say that their numbers are decreasing, more especially of late years, many having died from a disease resembling by their description influenza, also from starvation.

On my second visit to Repulse Bay in 1853-4, when enquiring by name about old friends, I learnt that about fifty of them (men, women and children) had perished for want of food some years before. Some details of their sufferings were mentioned which were very sad. Shi-makuk, the conjuror, who I noticed had always shown great love for his wife and children, being unable to endure the sight of their sufferings, went out of his snow-house and strangled himself. Another man, whose name I forget, but who was remarkable among them for his height, being above five feet ten inches, driven to madness by the pangs of hunger, stripped off his coats, and rushing into the cold, allowed himself to be frozen to death. Two women, the only survivors of this party, as far as I could learn, saved themselves by having recourse to cannibalism. One of these (who in 1847 was a fine-looking and very young married woman) was at Repulse Bay in

1854, but she was not in good health, and seemed to be looked upon with some degree of disgust and pity by the other Esquimaux. There were a few, but very few, exceptions to the general good conduct of the natives of Repulse Bay. A small number of the younger people were addicted to petty theft, and two, or perhaps three of the men were bad characters, feared and disliked by their countrymen, and to whom I had to give a lesson that effectually kept them quiet as regarded ourselves during our stay.

That they are a well-disposed people may be inferred from the fact that for some weeks a number of families, with at least twelve grown men, had been encamped beside the three persons left in charge of our property at winter quarters, and although this property was placed on the rocks and protected by an oil-cloth only, not an article was touched or stolen, nor the slightest annoyance given to my men, although sometimes only one of them could remain at home. When the snow thawed about our winter huts in spring, many articles that had been lost, mislaid, or thrown aside, came into view. When the natives found any of these, they were brought to us to find out if we required them.

In the years 1848, 1849, and 1851, I had opportunities of seeing the Esquimaux that frequent the neighbourhood of the Coppermine River. These resembled in most points the natives of Repulse Bay, being gentle and courteous in their manner, but, physically speaking, a finer tribe. Several of the men were of good stature, being five feet ten or five feet eleven inches high, and two of them had brown hair and blue or grey eyes, giving indications of a mixed race, the origin of which I could not trace. The women, with a few exceptions, were too much afraid to show themselves, and when Sir John Richardson in 1848 entered one of the tents he found that they had begrimed their heads and faces with mud and dust with the view I fancy of preventing us being captivated by their charms and carrying them off, for we were then a formidable party of twenty or more. In 1851 they were much less timid.

Nearly all the tools and weapons of these people are formed of native copper, neatly hammered into knives, daggers, spear, lance, and arrow heads. We could not discover that they had any communication with the Esquimaux far either to the east or west of them, and we saw nothing that could be traced to having been obtained from the natives of Back's Great Fish River (except, perhaps, their stone kettles), or from those of the McKenzie, whom they seem to know by report as fierce and warlike, and of whom they were afraid. They were shy and rather timid at first, which may reasonably be accounted for by remembrance of the story of the horrible massacres of their ancestors by the

northern Indians at the Bloody Fall in 1771, at which Hearne was present, but could not prevent, he having had apparently little influence over his brutal companions.

One instance of their good faith may be noticed. In 1849 I asked one of the natives to bring a pair of boots for me to the "Bloody Fall," where he said he would be about the time of our return from the coast. Circumstances detained us, and when we came to the Fall the Esquimaux were gone, but on a long pole firmly secured in a cleft of the rock, hung a beautiful pair of new boots made to measure. The boots were taken, and the value of at least ten pairs left in their place.

In 1848, when I accompanied the boat expedition in search of Sir John Franklin, commanded by that very distinguished naturalist and Arctic traveller, Sir John Richardson, was the only occasion on which I had an opportunity of seeing the Esquimaux of the McKenzie River, who differ very much from those to the eastward, for they are as turbulent and fierce as the latter are peaceable and well-disposed. No boat parties of "white men" have ever descended the McKenzie into the Arctic Sea, or have proceeded along the coast westward, without an attack, or an attempt at attack, being made upon them.

They pillaged Franklin's boat in 1826, and were only induced to desist and return the plunder by the pointed guns and cool front shown by the crew of the boat under charge of Lieutenant (now Sir George) Back, which managed to push into deep water, and by the eloquence and courage of Augustus the interpreter. They attempted to attack Dease and Simpson's boats in 1836-7; they made Pullen's party in 1849 leave the shore in great haste with the loss of his boat's anchors, and in 1848 came off to the number of three hundred or more in oomiaks (large boats) and kayaks, chased the boats under Sir J. Richardson, boarded one of them which by accident was some distance behind, and began to pillage, when they were driven away by the return of the two boats that were in advance, and firing one or two loaded muskets over their heads.

Fortunately the oomiaks, which were full of people, could not come up with us, except in the one single instance mentioned, but each boat was followed by a swarm of kayaks, the men in which clung to our gunwales, rudder, oars, or anything they could lay hold of in the most impudent manner, and a more fierce, daring, and truculent-looking set of fellows could not well be imagined. My steersman, who had assisted (when in Her Majesty's service) at the capture of many Malay pirates, said the pirates were not to be compared to them for fierceness.

As we got farther out to sea, the kayaks gradually left us, after several of them had got overset. No lives were, however,

lost, as they were turned right side up again by two of their companions, after a good ducking. They were not expert enough to right their kayaks after being overset, as the Greenlanders do. Of the height of these men we had no good means of judging, as they were seated in their canoes, but they were stout and broad-shouldered, with great strength of arm and hand. Any one seeing these savages when in an angry or excited mood, could readily believe in the probability that a horde of them may have destroyed the Norsemen, who peopled the ancient settlements of South Greenland. All the men wore cheek ornaments made of stone, ivory, or large coloured beads, which they readily sold at various prices, the ones most valued being those formed of beads.

The only reason I can assign for these Esquimaux being so different in temper and disposition from their countrymen to the east is, that they have always been at war with the Souchoux Indians, who hunt on the lands in proximity to the sea coast. These Indians are a brave race, who speak of the traders (from whom they obtain guns and ammunition) as their friends. The Esquimaux naturally enough look upon both as their enemies. Their warlike or turbulent spirit may also have been kept up by their being able to live together in one large community near the mouth of the McKenzie in consequence of the great quantity of different kinds of food they are able to obtain there; whilst, on other parts of the coast, where food is less abundant, the natives are obliged to separate into small bands or families. More friendly relations have now been commenced on the McKenzie, as a trading-port has been established near its mouth, to which the Esquimaux resort.

The natives of the Danish settlements of Greenland may be considered civilised as far as they can be in such a country and climate. They are employed as boatmen and domestics, and are close attendants at the Lutheran church. Most of the young women can read, write, and sing well, and have even learnt to dance polkas and waltzes, which they have been taught by the Danish sailors. They have not yet, however, arrived at the luxury of crinolines. The dress of the men differs but little from that already described, except that the coat is made of seal skin, or stout cotton lined with bird skins or eider down instead of deer skin, and often without the flap or tail at the back. The breeches are also of seal skin. The women's dress consists of a tight-fitting, round jacket of strong coloured cotton lined with eider down or bird skins, with hood; a pair of seal-skin breeches, and boots fitting tightly at the leg, meeting these at the knee. Their hair is all gathered together on the crown of the head, and tied in a bunch or top knot, with a piece of coloured ribbon or

worsted stuff. A married woman uses this fastening of blue, a widow black, and a maid red. Green is also used by some.*

Being frozen in at the head of one of the fiords for some days, we stayed at the house of an old Esquimaux said to be of mixed origin, who kept a cow or two, and gave us excellent milk every morning and evening with our coffee, and from whom we bought a sheep in as fine a condition as I ever saw in the London market, being almost too fat. The mutton cost us about sixpence a pound. The favourite drink of these people is coffee with molasses or brown sugar, and they use a large amount of rye bread, imported from Denmark and sold to them at a very moderate price, which may be readily done, as the voyage is not long and there is no inland transport. Their traffic with the Danes is carried on in a very simple and satisfactory manner, by means of small notes varying in value from one penny halfpenny to several dollars. These notes are given in exchange for their oil skins, furs, ivory, eider down, etc., and then taken to the shop, where they purchase what they require.

One at least of their old customs has been retained. When a seal is killed, the wife of the successful hunter, before skinning the animal, cuts off one or more long strips of the fat and skin together, which are distributed in small pieces to every child at the place that likes to come or send for it. When two seals are killed two pieces are given, and so on.†

Few natives of South Greenland are said to be of pure blood—it having a Danish mixture. All the Esquimaux with whom I have communicated on the subject state that they originally came from the west or setting sun, and that in doing so, very long ago, they crossed a sea separating two great lands. That they are all of the same origin may be inferred from the similarity of their appearance, of their habits modified by the circumstances in which they have been placed, and by their language being so much alike that Esquimaux from the east coast of Hudson's Bay can understand and communicate without difficulty with those of McKenzie River, some thousand miles of coast line apart. That these people have been driven from their own country, in the northern parts of Asia, by some unknown pressure of circumstances, and obliged to extend themselves along the whole northern coast line of America and shores of Greenland, appears to be likely, and that the route followed, after crossing Behring's Straits, was along the coast. Being hemmed in by hostile Indians on the south, and driven forward by pressure from the west, they

* This mark of tying the hair in different colours originated with the missionaries.

† This is said to be done with only two kinds of seal.

had in part, when they reached the meridian of Banks Land, crossed to it, and to Wollaston Land, and thence to the Parry group of islands to the north (on all of which we know that animal life—in the form of musk cattle, reindeer, and smaller game—is abundant), and travelling eastward, finally reached Greenland, after crossing the intervening straits and sounds; or by coming round by North Somerset, and then across Lancaster Sound or Barrow Strait.

An ingenious theory has been started to show that Greenland may have been peopled by the Esquimaux coming direct across the ice-covered sea from Asia to Banks Land and the Parry Islands, but the idea appears to have little to support it, beyond the supposition that there are many islands or much land not far distant to the north and north-west. The reason assigned for this belief, is the immense thickness of the ice forced on or near the north-west shores of the Parry Islands, which it is supposed would drift away if not held in by land. From the fact of the very great accumulation of ice in this position, I should arrive at the very opposite conclusion, namely, that to the north-west there is a large extent of sea, and that the pressure of great bodies of ice driven by the prevailing north-west and westerly gales had forced it into large heaps so hard and fast aground, that for ages no gales from an opposite direction could remove it.

Whenever Indians or Esquimaux have to depend on land animals principally for food, they are much more liable to suffer privation and require to be much more nomadic than those who rely upon marine animals, or the produce of large lakes for subsistence.

Deer and musk cattle are migratory and sometimes uncertain in the routes they follow. As an instance; the early setting in of winter, by freezing the lakes at the time of the southern migration of the reindeer, destroys the most productive source of obtaining a winter stock of food to the natives of Repulse Bay, because the deer are then enabled to cross the lakes on the ice at any place instead of swimming over at certain favourite passes, where they are easily speared, occasionally a whole herd at a time. The Esquimaux near the McKenzie River and westward, and also those of Greenland, have oomiaks or large boats. Those of the Coppermine and eastward to Hudson's Bay have only the kayak or one man canoe.

In the construction of their winter houses the Esquimaux seem to have been influenced by circumstances. In Greenland, where usually an abundance of fuel from the walrus, seal, and whale can be obtained, their huts are made of earth, stones, moss, bones, etc., which, without a fire, would make a cold habitation. Along the coast westward from the McKenzie, and some distance

eastward of that river, wood houses are built, because wood is abundant, whilst eastward of the Coppermine, as far as Hudson's Bay, where there is little or no wood, and comparatively a small amount of oil-bearing marine animals, the snowhouse forms the winter shelter, because without fuel it is warmer than either of the others.

I have to regret that, in consequence of not having my rough notes by me, I am unable to mention several incidents which I cannot trust my memory to give correctly, which would in some measure tend to make this paper a little less incomplete. I may conclude by saying that the more I saw of the Esquimaux the higher was the opinion I formed of them, and that they were much more susceptible of civilising influences than any of the Indian tribes I had met.

In this favourable opinion I am borne out by the experience of the Danes in Greenland, by the Moravians in Labrador, and in Hudson's Bay, both at Churchill and on the east main coast; also by the conduct of the interpreters employed on Arctic service; among whom I shall mention only the gallant and faithful Augustus, who perished in a bold and determined effort (after his companions had turned back) to reach one of his former masters, Sir George Back, at Fort Reliance, in winter 1832–3; old Ouligbuck, as brave a man as I ever met; and the amiable, active, and honest Albert, who was drowned in consequence of his too great zeal, by the upsetting of a boat on the Coppermine River in 1849. All these were true and trustworthy as any white or civilised man could be.

## XII.—*On the Inhabitants of Asia Minor previous to the time of the Greeks.* By HYDE CLARKE, Esq.

[*Read March 7th*, 1865.]

THE question of who were the aboriginal inhabitants of Asia Minor is one which naturally has occupied many inquirers, and led to a wide diversity of opinion. This diversity of opinion is in a great degree to be traced to the circumstance that opinions have been chiefly regarded instead of facts, and instead of such opinions being conciliated, or being capable of conciliation, they have been used as a means of propagating other opinions, or for the creation of theories.

This discrepancy of opinion is to be traced from an early date. Herodotus, for instance, affirms that the Armenians were a colony of the Phrygians, while Strabo, recording the opinions of early writers, says that the Phrygians were Brighes, driven back from Thrace into Asia. Upon such opinions Niebuhr has exercised himself.

The difficulty of dealing with the subject is indeed great, for we have no known or accessible historical relations of the migrations or proceedings of the population of Asia Minor till long after the period when the Greek colonies were introduced, and the only chance of obtaining such information is in the progress of discovery—in deciphering hieroglyphic and arrow-headed records, which after all can give us but faint indications of matters which were merely collateral to the main purposes of those inscriptions.

Of this we have a sufficient exemplification in a recent discovery of Sir Henry Rawlinson. In the *Athenæum* of March 8th, 1862, Sir Henry says that in examining the tablets of Ashur-bani-pul, the son of Esarhaddon, he found that Ashur-bani-pul states as follows:—"Gyges was King of Lydia, a country on the sea-shore, and so far off that the kings, my fathers, who reigned before me, had never heard the name of it. In obedience to my royal proclamation, the said Gyges sent his officers to my presence to propitiate me; and they brought with them some Cimmerian slaves whom they had taken in battle when those tribes invaded Lydia, together with a heavy tribute. They brought these things before me at Nineveh, and they kissed my yoke."

The date of this, Sir H. Rawlinson places at 660 B.C. He affirms that Cimirri, or Cimmerians, is the Assyrian equivalent for the Persian Saca. We must, however, go back far beyond Gyges, of whose country the predecessors of Ashur-bani-pul had till his time known nothing.

We have to deal with a period, too, which not only supplies us with no historic page, but with no coins and no historic inscriptions; which in later periods present such valuable materials.

Nevertheless we must not despair of finding materials of various classes, such as are afforded in analogous cases.

*Monuments and Remains;* as—buildings, tombs, arms, pottery.

*Human Remains;* as skulls found in tombs.

*Topographical Nomenclature;* as the better or worse-preserved names of rivers, mountains, and towns.

*Mythological Records;* as the vestiges of fables, legends, and superstitions, preserved by successive populations.

ORIGINAL INHABITANTS OF ASIA MINOR.

These several classes of facts require to be recorded, corrected, and classified, and then by the application and comparison of ascertained historical facts to form our deductions, and to arrive at safe conclusions.

While some distinguished men have devoted great labour and ingenuity to the refutation of accepted historical legends, and have promulgated other theories of Greek and Roman history in their stead, other inquirers have by steady labour been building up new and unknown departments of history by the slow accumulation of facts, to which the judicious application of archæological, ethnological, and philological science has powerfully contributed.

In this way the history has been restored, created, or corrected, of the Iberian races, of the Egyptians, Assyrians, early Hindoos, of the Ossetinians, Anglo-Saxons, Warings, and Scandinavians, and light has been thrown even on early American history.

Unfortunately for the subject now treated of, little has been done, nor have we here access to the works which have already treated of the subject, and prepared the foundation.

It is well known that we possess in Asia Minor monuments of the highest antiquity, called by various names, Cyclopean, Pelasgian, &c., of which Raoul-Rochette, Tricon, Fauvel, Fergusson, and others, have shown the similarity to monuments in Europe. Our remarkable fastnesses, citadels, and cities, our barrows, our rock-cut tombs, our colossal tablets, our gold ornaments, are but individual members of large series. So, too, Wilhelm von Humboldt and Prichard have shown the connexion of the topographical names and ethnological features of the old races of Asia Minor with the Iberian and early inhabitants of Europe.

On the present occasion it is this portion of the subject which will be mainly considered in reference to geographical nomenclature, or the record of those names of places, which apparently, not being Greek, are attributable to the earlier inhabitants.

The names of places in a country are philological, and therefore ethnographical records of more or less antiquity, and thereby afford masses of facts from which positive deductions can be formed. Thus in Asia Minor, as we know, the great body of the names of places is Turkish, illustrating the historical fact of the general occupation of the country by the Turks. There are, however, names, as the Mendere, Smyrna, Magnesia, Nymphæum, which do not belong to the Turkish inhabitants of the country, but to other classes, namely, earlier inhabitants.

So, too, in England, the names are English, but there are some few names, as Thames, London, belonging to the languages of the earlier, extinct, or supplanted inhabitants; but when we come to Wales, we find names altogether Welsh, with the exception of some English names in Monmouthshire and Pembrokeshire, where English colonies were early introduced.

In Italy a considerable part of the names of places is ancient, affording evidences of ancient history; for of these some are Latin, referring to the Romans; some are Greek, referring to the Greek colonists of the south; some are Celtic, referring to the Gaulish invaders of the north; but some are not Indo-European, being the names in Etruria. So, too, in Spain, we have many ancient names recognisable as Roman or Gaulish; but in the Biscayan countries we have a mass of Basque names, not Indo-European, but belonging to the Iberian, Altaian, or Ugrian stock.

Besides these existing evidences, we have historical records of former names now extinct, in the case of all the countries of the ancient world. For Italy the list is naturally copious, and that for Asia Minor is more copious than is commonly supposed, because it is eked out from inscriptions and coins.

Of such materials hitherto but little general use has been made, because they have not been collected to a sufficient extent; yet already they have been made to produce important results. For instance, they have thrown great light on the relations of the Celtic races, and particularly on those of the Cambrian and Hibernian branches. In the hands of Wilhelm von Humboldt they have been made to illustrate a great historical phenomenon,—the occupation of the Mediterranean countries by the Iberian race, before the period of the domination of the Indo-European race in its Hellenic, Roman, and Celtic branches, aud consequently long before the appearance of the German and Sclavonian families on the scene.

Thus the Turks, the Magyars or Hungarians, the Finns, and the Basques, are but isolated representatives of the great race which once predominated in Europe and Western Asia, and the connexion of whose languages has been so well illustrated by Prince Lucien Bonaparte.

Of the results to be derived from the investigation of topographical nomenclature I was long since convinced, and I first applied myself to the prosecution of the researches of those who had taken part in the Iberian investigations. This led me to the opinion that so far from the names of rivers in north-western Europe being derived from the Celts, they were Iberian and of a common type with those of Southern Europe and Western Asia. I also considered that Iberians, not Phœnicians, had occupied Britain and Ireland before the arrival of the Belgians and Celts.

The next large problem I investigated was the topographical names of England; and the tabulation of more than 100,000 names enabled me to confirm and correct the views of Kemble, and to oppose those of the school of Palgrave, throwing a great light on that obscure portion of our history between the decline of the Romans and the reputed arrival of the Anglo-Saxons. Such a large body of facts leads to definite results, for the great mass of these names is Anglo-Saxon. It shows that in the time of the Anglo-Saxons the supposed Roman population had lost its power, and that its towns, villages, and farmsteads were in ruins; that instead of the English population mixing with the Celtic, or having a large Celtic population among it, the Celts were removed from the face of their possessions, and a predominant immigrant population substituted.

Thus we get a state of circumstances and a class of facts analogous to those of Asia Minor, where a Turkish population has supplanted the Greek, and driven it into bordering places. History, however, is constantly repeating the same phenomena, and the record of these affords the basis for comparative history, a department as yet inadequately cultivated; and nevertheless one event is to be studied by the light of many; the uncertain to be corrected by the certain; what is wanting in many cases, to be supplied by what is known.

Asia Minor, too, repeats its phenomena. We now see the Turks occupying vast countries once held by the Greeks; but the Greeks themselves were once immigrants and intruders, occupying the countries inhabited by other races. The dawn of history represents these events as then fresh, but what had taken place before? In the time of Homer ancient cities were in ruin, ancient tribes extinct, and confused legends embroiled what was already archaic and fossil.

In the time of Homer were to be seen the fastnesses of forgotten heroes, the tombs of the mighty dead, cities with olden names, which had lost their significance. Among the Greeks were still mixed populations of other blood, either retaining strange languages, or having abandoned their own for Greek.

Of the characteristic monuments, the Cyclopean cities are not

the least remarkable. Of these we have several in our own immediate neighbourhood (at Smyrna). Our own is one, for that part of the Acropolis nearest to the new city is decidedly Cyclopean, and attests that there must have been a settled population here in the remotest ages. Whether or no at any time the population of Smyrna was distributed in the plain of Bournabat may be a matter of doubt; but the city of Smyrna could not have been originally seated there, for the Bournabat district had its own city of Tantalis or Sipylus. The very necessities of the times caused the construction of these strongholds, and they were the earliest seats of population. It was, too, the practice to occupy a strong elevated natural position,—not to place the cities in the plains. The antiquity of Smyrna is likewise an evidence against the legend that it was settled from Ephesus, and shows that it was coeval with the latter.

How closely the country was occupied at the early period under consideration is shown by the proximity of Smyrna, Tantalis, and Nymphæum.

Other Cyclopean cities are Ephesus and Samos. The last is in better preservation than the others, and shows of what extent these structures were; not small castles, but large fortified cities.

These Cyclopean cities, as is well known, are recognizable in Greece and Italy. They have been called by various names, but must be referred to the Iberian epoch.

The rock-cut and rock-painted works of Asia Minor, being looked upon as of foreign origin, and attributed to the Egyptians, have not been studied in our special view.

The Niobe near Magnesia is undoubtedly very ancient, as its record by Homer shows.* The reference to this site is one of the testimonies of the connexion of Homer with Smyrna. Another is his full acquaintance with the mythic legends of our neighbourhood. The name of Niobe is one of those of Iberian form, and its antiquity must be great, as in the time of Homer its meaning was gone, and it had become legendary. That all the ancient names of places had once a meaning must be allowed, for even with our deficient knowledge we can trace the names of many. The fact that the names had ceased to be understood in their meanings and their bearings, and that false legends could spring up, is a good designation of antiquity.

The Niobe, even by Pausanias, was conjectured not to be sim-

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* "Νῦν δέ που ἐν πετρῃσιν, ἐν οὔρεσιν οἰοπόλοισιν,
Ἐν Σιπύλῳ, ὅθι φασὶ θεάων ἔμμεναι εὐνὰς
Νυμφάων, αἵτ' ἀμφ' Ἀχελώϊον ἐρρώσαντο,
Ἐνθα, λίθος περ ἐοῦσα, θεῶν ἐκ κήδεα πέσσει."
*Iliad*, xxiv, 614-617.

ply a sculpture, and it remains an open question how far it has been touched. It belongs, however, to the class of rock paintings.

The so-called Sesostris is an analogous monument. Herodotus says distinctly in his Euterpe, that the image of the king, carved on stone, holds a bow in one hand and an arrow in the other, and that in hieroglyphics is the inscription, "I OBTAINED THIS REGION BY THE STRENGTH OF THESE ARMS." He acknowledges that there was no inscription to show who was the person represented, and that some had taken it for Memnon, though he believed it to be Sesostris.

It is very unlikely that there should be no cartouche of Sesostris; it is none the less so that the figure should be placed in a bye ravine, and not on the high road; and assuredly the style and workmanship are not Egyptian. Herodotus is assuredly mistaken in attributing it to the Egyptians; and it is only a rock picture, touched up more or less.

Herodotus says there were two of these images; one on the road from Sardis to Smyrna, which must be that commonly known to us as the Sesostris; the other on the road from Ephesus to Phocæa, which has not been identified, but which I consider to have been on the rocks or cliffs beyond Kedjee Kalehsee, or Goat's Castle, and Kosbounar.

This situation is near Ephesus, on the main road leading out of it, and the class of rocks is suitable, being coloured like those of the Niobe and Sesostris. The whole of this range is worthy of careful examination, for there is strong appearance of several rock pictures, long lost by rain and decay of the stone.

The rock cut tombs I must pass, as also the rock chambers or labyrinth of Lemnos.

The sepulchral barrows and tumuli of these countries are well known to be remarkable. They require further investigation, and their general connexion and affinities must be studied. They are acknowledged, too, to have a wide range of relationships. Like monuments are found throughout southern and western Europe on one side, and on the other they have been traced in various parts of Asia, even to Siberia, where silver and gold ornaments of rude workmanship are found in the tombs. These relationships are recognizable as Iberian.

The Phrygian sepulchres were conical hillocks; the tomb of Alyattes, king of Lydia, was a very large barrow. Some tombs were so ancient that they were called the graves of the Amazons. (Plutarch: *Theseus.*)

In the early period referred to, gold was abundant. This was obtained from river diggings. My opinion is that the Iberians employed themselves in ransacking the river-beds and deposits of Europe and Asia for gold, and that it was the Iberians from Spain,

and not the Phœnicians, who visited Britain and Ireland, collected largely, and discovered the tin streams or diggings. The native gold so found is soft, and was most likely one of the earliest metals worked. Of these sites of gold, those of Tmolus and Pactolus in this country are known, and I have no doubt under Californian or Australian guidance large gold-diggings are yet to be worked in this country.

The mythological legends of Asia Minor afford a copious range of names. These, to the best of my observation, are Iberian. They require a separate classification, and I hope to have some opportunity of investigating them.

Before we proceed to consider the names of places, it may be as well to give some explanation of the term Iberian, already used, and which we shall have occasion several times to employ.

The term Iberian is here applied to those portions of the Turanian race, which in olden times occupied the countries of the Mediterranean.

By Turanian I understand that great division of mankind, which is represented by the Basques of Spain, the Majyars or Hungarians, the Finns, the Mordivins, the Turks, Osmanlee, and others.

To it anciently belonged the population of Spain, of Aquitania and South Gaul, of South Britain, of part of Ireland, of Italy, including most likely Etruria, of the Great Islands of Greece, including probably the Pelasgi, and these races extended into our peninsula of Asia Minor. Our present subject of investigation will throw some light on the extent to which these races occupied Asia Minor.

The exact languages spoken by these populations are not as yet ascertained, and indeed the subject has been but little investigated; for the philology of the Turanian languages is only of late being studied with effect. Such labours as those of Prince Louis Lucien Bonaparte on the relationship of the Basque and the other Turanian languages must be carried further.

In order to obtain materials for our present investigation, I have taken out the names of rivers, mountains, islands, and towns throughout Asia Minor. I include the neighbouring islands. Generally, I have excluded the Greek forms; but where a form may possibly have been an ancient form appropriated by the Greeks, and assuming the type and taking the meaning of a Greek form, I have left it. The names introduced by the Ionian, Dorian, and Æolian settlers, and by the later Greeks, are excluded. The names evidently of Syro-Arabian form in the bordering provinces are excluded. These names are first taken out alphabetically, and then resolved into syllables, which are tabulated, for the names are generally compound words.

As the next measure of comparison, I have taken out the names of places in the south of Europe, having analogy with our names. The next step was to tabulate the Asiatic names in comparison with the European names. From these materials I can at present only obtain general results, awaiting the period when myself or others, by further study and acquaintance, may be able to draw further deductions. I can consequently make but brief comments.

The names of the mountains have certain predominant forms, as Cad, Cor, and Mus. Whether the widely distributed name Olympus belongs to this class, I cannot determine. The names of islands present no characteristic feature, except the particle *Cor.* The names of rivers and fountains afford the types, Ander or Andus, Caster or Castus, Ly and Si, Adrus and Adra, found in CHARADRUS; and ADRUS is perhaps a form of Ander.

In the names of towns Anda is a most remarkable form. Here it is only found as a prefix once, but it occurs in other countries. As a termination it is well known, and is found in Cadyanda, Alabanda, Aricanda, Oroanda, Œnoanda, Soanda, etc. This form is found in other countries, but not extensively.

Ander is partly found as a form for rivers, but I have not recognised a foreign form. It is a form chiefly of western Asia Minor.

Arna is a local form, which is well marked here, while it is copious in Greece and Italy. We have Arna itself in Xanthus, Macedonia, Thessaly, Bœotia, and Umbria. *Atarna* is perhaps an eastern form of the Iberian word Iturria, a fountain or spring.

Asta, Astyra, or Astura, is a recognisable Iberian form. It signifies a rock. Thus we have Astyra in Mysia and Troas, Astura in Latium, Astura in Spain, Asta in Liguria and Spain. It occurs both as a prefix and a termination,

Assus or Essus is a most copious form, most frequent in Asia Minor, to be found in Greece, and not very numerous in Spain.

The form Blaundus of Phrygia is found in the Blanda of Lucania and Spain, and in other shapes.

Bura, a termination with us, is a marked Iberian type. It is perhaps "berri," (Basque) a town.

Casta, or Castrus, appears to represent a fountain or spring. It has an Iberian cast, and is widely but sparsely distributed.

Cora appears to be the same as Cara. It perhaps means a peak or promontory. In Basque, Cora is *high.*

Ilia, Ilion, or Ilium, is a remarkable form. In Iberian it signifies a city, town, or place. This, it will be remembered, was the name of Troy.

There was likewise an Ilium in Epeirus. Ilium, Pergamus, Pedæum, Astyra, Scamander and Ida, are all Iberian names.

This was perhaps a great centre of the Iberian race, and it was here they made their stand against their Hellenic enemies.

Manda, Menda, or Munda, most probably signifies a hill or mount, for which Mendia is the word in Basque.

Peda or Bada must be a word for a mountain, as in Idubeda and Orospeda, mountains in Spain. Petarra, the word in French Basque for mountain or hill, is found in Patara of Lycia and of Cappadocia.

Perga or Barga is widely distributed. It is applied to a mountain fortress.

With regard to words beginning with the letter R, it is worthy of remark that they are very rare in our districts, and that such words are very rare in modern Basque. Words having R in the first syllable begin in Basque with R, Er, or Ar.

Sardea, Basque for a fort, is found in Sardene, a mountain of Mysia, in Sardes, which has an Acropolis, and in Sardemisus, a mountain of Pamphylia.

Tama, Tema, or Dyma, is a particle extensively applied to mountains and hill-forts.

Ula, Ulia, or Olus is Iberian for a *city, town,* or *place.*

Ura is old Iberian and modern Basque for *water.*

Although the meaning of only a few of these words can be ascertained, yet the Iberian character of all of them is clearly determined by identity of formation, and by the conjunction of ascertained particles with these unascertained.

Thus we have Asta, a rock, in Dadastana and Cremaste, in Asia Minor, while we have it in Ateste and Arnestum, in Italy, Rædestum in Thrace, and Egelasta in Spain,—just as we have Astura in Latium, and Astures in Spain, where we have two known words united as *rock* and *water.* Thus we have Menda, a mount or hill, in Dasmenda, a hill-fort of Cappadocia, as in Manduria, a town of Calabria.

Words identical, or nearly identical, are found here and in other Iberian countries.

| | |
|---|---|
| Alander (Phrygia) | Acalandrus (South Italy) |
| Blaundus (Phrygia) | Blanda (Lucania, Spain)<br>Blendium (Cantabria)<br>Blandona (Epeirus) |
| Cadena (Cappadocia) | Catana (Sicily) |
| Myndus (Caria) | Munda (Spain), *four* |
| Calenderis (Pamphylia) | Acalandrus, *suprà* |
| Atarnia (Mysia) | Aturnus (Italy)<br>Aternum (Italy)<br>Atarneus (near Pitane) |
| Arna (Xanthus) | Arnæ (Macedonia) |
| Arneæ (Lycia) | Arna (Umbria)<br>Arne (Thessaly, Bœotia)<br>Arnus (Tuscany) |

| | |
|---|---|
| Astyra (Mysia) - - | Astura (Latium)<br>Astures (Spain) |
| „ (Troas) - - | Styra (Eubœa)<br>Stura (Liguria) |
| Amastrus (Paphlagonia) - | Amastratus (Sicily) |
| Assus (Mysia) - - - | Assus (Phocis) |
| Assessus (Miletus) - - | Assissium (Umbria) |
| Iasussus (Caria) - - | Iasus (Lakonia) |
| Ariasus (Pisidia) - - | Arausio (South Gaul) |
| Attuda (Caria) - - | Attidium (Umbria) |
| Calynda (Caria, Lycia) - | Calindæa (Macedonia) |
| Comana (Pontus, Cappadocia) - | Cominium (Samnium) |
| Comania (Caria) - - | Commoni (Liguria) |
| Commoris (Cilicia) - - | Camara (Crete) |
| Cameirus (Rhodes) - - | |
| Caunus (Caria) - - | Cannæ (Italy) |
| Canas (Lycia) - - - | |
| Canæ (Lesbos) - - - | |
| Caresus (Pontus) - - | Carasa (Aquitania) |
| Cerasus (Colchis) - - | Carisa (Spain)<br>Ceressus (Spain, Bœotia) |
| Castalia (Cilicia) - - | Castalia (Delphi) |
| Corydalla (Lycia) - - | Corydallus (Attica) |
| Corallæ (Pontus) - - | Corioli (Latium) |
| Coryleum (Paphlagonia) - | |
| Ilium (Troad) - - - | Ilium (Epeirus) |
| Ida (Troad) - - - | Idubeda (Spain) |
| Mazaca (Cesareia) - - | Massicus (Campania) |
| Mazura (Pamphylia) - - | Mazara (Sicily) |
| Nura (Cappadocia) - - | Nura (Sardinia, Balearic Isles) |
| Nysa (Caria, Pisidia, Cappadocia) | Nysa (Bœotia, Thrace, Eubœa, Naxos) |
| Pedasa (Caria) - - | Pedasus (Methone) |
| Pedasus (Mysia) - - | |
| Pergamum (Ilium, Mysia) - | Pergamus (Macedonia, Crete)<br>Pyrgi (Etruria) |
| Perga (Pamphylia) - - | Bargusii (Spain) |
| Bargasa (Caria) - - | Bargulum (Epeirus) |
| Bargylia (Caria) - - | Bergule (Thrace)<br>Vergilia (Spain) |
| Sora (Paphlagonia) - - | Sora (Latium) |
| Syrus (*island*) - - | |
| Iluza (Phrygia) - - | Elusa (South Gaul)<br>Eleusis (Greece) |

## XII.—*On the Domestication of Certain Animals in England between the Seventh and Eleventh Centuries.* By JOHN THRUPP, Esq.

[*Read April 25th*, 1865.]

IN considering the history of the domestication of animals in England, we naturally commence by inquiring, what it is that constitutes domestication, and by what tests we distinguish a domesticated species from the wild or semi-domesticated.

It has been said, that the necessities of domestication demand, that an animal be hardy, have an inborn liking for man, be easy to tend, comfort-loving, breed freely in the homestead, and be gregarious. But these are rather the qualities which induce men to domesticate animals, than tests of domestication.*

There are in animals three recognised and distinct degrees of capacity for domestication.

The first class are animals of a "domesticated nature," being those which when once thoroughly domesticated, continue habitually with man, will not *willingly* leave him, and, if they do so accidentally, will probably return. Among these are cows, horses, sheep, and poultry.

The second are animals capable of only an *imperfect* domestication. They breed freely in the homestead and are useful to man; but if they escape from him will *probably not* return. Among these are tamed deer, hawks, pheasants and partridges bred at home, and gold and silver fish in private waters.

A third class, which are sometimes called domesticated, such as hares, canaries, rabbits, monkeys, parrots, etc., are altogether incapable of domestication; for whatever an eccentric member of the species might do, they will, *as a rule*, escape to savage life on the first opportunity, and never return unless coerced by climate or starvation.†

I have ventured to repeat these very well known distinctions; because, in ignorance of them, our ancestors made a series of experiments in domestication, which were either failures or but partially successful; and also because, in those which succeeded, a species was always semi-domesticated (sometimes for centuries) before it was completely so.

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* Ethnological Transactions, New Series, vol. iii, p. 122.

† Justinian, "Inst.", lib. ii, 1, § 12; Colquhoun, "Roman Civil Law", vol. ii, p. 37; Blackstone, "Com.", vol. ii, c. 26.

The customs and regulations contained in ancient laws and charters afford us assistance in fixing the era of the domestication of animals, and of that I propose to avail myself so far as time permits.

1. A man had an absolute right of property in tame animals, a limited one in semi-domesticated, and none in wild.*

2. He was responsible for damages done by the first, partly for the second, but not for the third.

3. There was a fixed price to be paid as compensation for stealing domesticated animals, a similar fixed price for the semi-domesticated, but none for the wild.†

4. Rent payable generally in produce, and also fines to the King, damages and compensations, might be paid in the first, generally in the second, but never in the third class.

5. When a species was wild, the clergy did not tithe it, but so soon as it became domesticated they did so.

6. Wild animals were left to take care of themselves. The semi-domesticated were under the care of the general body of the slaves; but the domesticated had special officers appointed to attend them, such as swine-herds, beo-ceorls, ox-herds, etc.

7. When they were completely domesticated, they were let out to tenants as a part of their farm, much as farm buildings are now, and at the end of the tenure reverted to the landlord.

8. They were also specially bequeathed or granted in wills or charters, as were the enclosures, cattle-yards, hog-pens, or castra apium, in which they were kept.

The custom of petting animals has been suggested as the origin of domestication; but I believe that it was adopted mainly from economic motives, and was practised so soon as it was found to pay, and was carried to the extent, and was persevered in so long, as it was found to be profitable, *and neither further nor longer.*

The animals on whose produce our Anglo Saxon forefathers, at first, mainly lived, and which they most earnestly desired to domesticate, were hogs, bees, and eels.‡

The hog was the first with which they were successful. He became the great staple of national food, and one of the most important elements of national wealth. Swine were bequeathed expressly by wills, when other animals were not, were paid as coin to ministers for masses for the dead, and often constituted the marriage portion of the noblest ladies. A nobleman named

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* Colquhoun, "Roman Civil Law", sec. 967.

† Idem., secs. 968 and 969. The ancient laws of England and Wales, and of all the continental countries, are crowded with these tariffs.

‡ Turner's "Anglo-Saxon", iii, 22.

Alfred, for instance, gave to each of his daughters as a provision in life, 2,000 pigs, and nothing else.*

Only two animals of consequence, when killed and cooked, have retained their nationality of name, our own hog, which became Anglo-Saxon "ham and bacon," and the goat, which continued after death to be the Welsh "Kid." It was the Norman taste which converted, oxen, sheep, calves, and deer into beef, mutton, veal, and venison.

In the seventh century swine were in a semi-domesticated state. A large proportion of them were bred in the homestead, and then turned out into the vast public forests of beech and oak, to feed on beech-mast and acorns.† As these forests were gradually cleared or became royal property, the custom of turning swine into them was restricted by law.

It *had been* the custom to turn them out for the autumn and winter, as it was expensive to rear them at home, and in the forests they could provide for themselves. But about the ninth century in England, and the tenth in Wales, the royal and private woods were forbidden to them between the feast of St. John and the calends of January; and if swine so turned out trespassed on private grounds the owner had a right to seize and keep one sow out of every herd. The right of hog-feeding—denbera (in Saxon) or pannage (in Norman)—became valuable, and was conveyed specifically in charters, when woods, fisheries, etc. were ouly mentioned generally.‡

King Alfred fixed an uniform rent for the royal denbera or hogrims. Of swine, who at the end of the season, were three fingers thick in fat, he was to have one third; of those who were two fingers thick in fat, one fourth, and of those a thumb thick, one fifth.§ The right to these pannage-hogs was looked on as a sort of ground rent, and was granted or sold as such.||

The increased value given to swine by being home bred appears by the compensation to be paid for stealing them. A pig reared at home was worth 15 pence; but the same pig, when turned into the woods to feed, might be stolen for sixpence.

Although a large proportion of swine were, at the time of Alfred, home bred, it is probable that a larger number were not so; but roamed the boundary forests of districts or shires. These animals were a constant cause of bloodshed, *and for this reason*, that *being but semi-domesticated* they were not *absolutely* private

* I Will. in app. Sax. Dic.

† Ll. Wallicæ, ii, p. 719.

‡ Codex Diplom. Anglo-Sax., introduction.

§ Ll. Alfredi, s. 49; Thorpe, i, 133.

|| Edward the Confessor's grant of Cealchythe to St. Peter's at Westminster, in which pannage is granted, Diplom. Anglo-Sax., p. xliii.

property, but only so *in a limited sense*; and the epigram that William Rufus bore on his shield, "catch may who catch can" was the custom, and nearly the law, respecting them. In the border counties, lawful forays were incessantly organised for carrying them off, and when captured they were driven to the curtilage of some chieftain whose officers received a fixed legal share of the plunder. His gatekeeper, for instance, was allowed to select *one* out of each drove; but as he too often chose the fattest, it was enacted that he was not to select one that he could not lift with one hand as high as his knee.*

The clearance of the forests and the formation of hunting parks, which took place in the time of Cnut, tended to increase domestication. The swineherd who, before this, was a common slave, became a servile tenant, supplied by his master with a herd of swine as part of his farm, paying a fixed rent in kind, generally ten swine and ten pigs during his life, the herd reverting to his lord on his death.† These "porcarii" (or pig tenants) grew wealthy; and their number and the extent of their possessions mentioned in *Domesday Book*, show that about the end of the tenth century they had succeeded in thoroughly domesticating swine.‡

The domestication of the horse was probably of a later date than that of the pig, and its history exhibits a difference in the habits of the Cymric and Teutonic races.

The Welsh loved, bred, and trained horses, when the Anglo-Saxon cared little for them. In the tenth century, a large proportion of the Welsh horses were kept at home, fed, and trained; but their brood-mares, when in foal, were turned loose in the forest, for the express economic reason, that when they could "not draw a cart up and down hill" they were not worth home keep.§

So soon as conveniently might be after the foal was born, the mare was recaptured; but the foal was left in the forest to take care of himself. If he were not recaptured before he was three years old, he became a wild horse, and only demi-belonged to his owner. Any one might take him, on paying half his value, 60*d.*, though had he been caught and bridled, and three nights corn fed, his legal value was 120*d.* His value was therefore exactly doubled by the very first step towards domestication. When caught, he was trained either as a palfry or a waggon horse, or kept as a stallion. If the last of these, he was again turned into the forest, and his owner, though responsible for all his other

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* Quenteau Code, b. i, c. 21.
† Lappenburg, "Anglo-Saxon Kings", ii, p. 258.
‡ Ellis, "Introduction to Domesday".
§ Ancient Laws and Inst. of Wales, vol. i, p. 265.

horses, was not answerable, during a certain period of the year, for any damage he might do.

Horses turned out in the boundary-forests were as much an object of systematic forays as hogs; and in a treaty between the Welsh and the western English of the tenth century, it is stipulated that home-bred horses carried off from the woods shall be paid for with 30*s.*, and forest-born with 12*s.**

The Anglo-Saxons were later than the Welsh in training horses. They had no saddle horses till the middle of the seventh century, when the foreign bishops introduced the use of palfreys. In A.D. 605 the pope sent Æthelbert a present of a saddle and bridle ornamented with gold and gems, and a silver looking glass, a golden scapton, and other things, which the king, apparently not knowing what to do with them, gave to an abbot.

St. Cuthbert rode on horseback, and insisted that the angels did so, referring his incredulous converts to the history of those who came to the assistance of Judas Maccabæus.

But their example was very slowly followed. In the ninth century Alfred the Great tells us, that no man ever rode on horse back for pleasure, though some did so for exercise or expedition; horse riding, when not absolutely necessary, brought down divine and miraculous punishment; the kings hunted on foot, and one of the first who ventured to do otherwise would, but for a prayer to his patron saint and his own bad horsemanship, have followed his half-trained steed over the cliffs of Chedder.

In a dialogue of the tenth century, in which the king's huntsman explains every mode of hunting, he never mentions horses.

Persons entitled to fines or rent, payable in produce, refused to accept horses in payment, and the clergy who tithed every thing domesticated, did not tithe them. They were sometimes, but not generally, eaten; but a considerable export trade was done in them.

On the ethnological conquest of England by the Normans (if I may be pardoned the phrase), which I date from the time of Emma, daughter of Richard, Duke of Normandy, the wife, first of Cnut the great, and afterwards of Athelstan, horses rose in value. The tribute of the Welsh, which had been paid in valueless wolves, was demanded in horses, hawks, and greyhounds; the exportation of them was forbidden by law; they were eagerly accepted in payment of compensations; the clergy induced Edward the Confessor to tithe them; hunting on horseback became suddenly the fashion; and every man of rank adopted the custom, which the early Anglo-Saxon abhorred, of fighting on horseback.

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* Ancient Laws and Inst. of England, vol. i, p. 357.

*Bees.*—At the earliest period the Anglo-Saxon was probably more anxious to domesticate bees than horses. Their produce was an article of food, necessary to brewing mead, and extensively used in medicine.

In the sixth and seventh centuries, bees were altogether wild. They swarmed in the woods and formed their honeycombs in hollow trees, and were, at first, classed by law with foxes and otters, as incapable of private ownership, *because they were always on the move.** Any one who found them had a right to the honey and wax; though from several ecclesiastical regulations in the seventh and eighth century, we may infer that their capture was a dangerous amusement, and that their half naked captors were often stung to death.† A favourite mode of taking them was to cut down the tree in which they were, saw off the part containing them, and carry it home.‡ But as the country progressed in wealth, bee-keeping became more profitable.

The clergy earnestly encouraged it, teaching that bees "*had been sent from heaven, because the mass of God could not be celebrated without wax.*"§

The first step towards their domestication was the formation of imitations in bark (rusca) of the hollows of the trees in which they were found.‖

After a short time a wild swarm became the quasi-property of the owner of the trees in which they had settled for three consecutive nights; but if he omitted to discover it within that time, the finder had a right to 4*d.* and if it were not paid, to keep it himself. This shews the difference in value between the wild and domesticated swarms, as a rusca of bees was worth six times 4*d.*, viz., 24*d.*

About the middle of the tenth century, slaves (whose duty it was exclusively to attend to bees) and were called beo-churls, were ordinarily attached to wealthy establishments, and from the position of slaves they soon became servile tenants, whom their lord provided with a stock of bees, for which they paid a fixed amount of produce for life, the swarms continuing the property of the lord.

We also find, about this time, the word Anglo-Saxon, beo-cist (bee chest) and the Latin, alvearia (bee-hives) usually substituted for "rusca," from which it may be inferred that these rough constructions were superseded by regular hives.¶ Not long after-

* Venedot. Code, lib. iii, c. 15, 16.
† Theod. Arch. Cant., Pœnitent., xxxi, s. 18.
‡ Ancient Laws and Inst. of Wales, vol. i, p. 503.
§ Ancient Laws and Inst. of Wales, vol. i, pp. 501 and 739.
‖ Du Cange, Voce "Rusca".
¶ Ll. Edwardi Confess., s. viii.

wards, the clergy induced Edward the Confessor to tithe bee-hives, an evidence that they had become numerous and valuable; which is confirmed by *Domesday Book*, where they are repeatedly mentioned.

But bees were never more than semi-domesticated, nor ever altogether private property; as, if they flew away, and the owner did not recapture them within a very short time, they belonged to any one who could.

*Hawk.* From the bee which has continued semi-domesticated, I pass to the hawk, whose domestication was superior in degree, though inferior in proportionate number; it was probably a foreign taste, and has altogether ceased.

There is no evidence that the earlier Anglo-Saxons trained these birds. The first we hear of them is in the eighth century, when two falcons were sent by Boniface, Bishop of Mons, to Ethelbert, king of Mercia, which induced a Kentish king to apply to the same prelate for a similar present, and in so doing he stated that he could not obtain hawks of the quality he required in his own kingdom.*

From about this time the kings and nobles laboured to domesticate hawks, though at first in very limited numbers, and with no great skill. They nevertheless formed a regular part of their establishment.

In several charters of the first half of the ninth century, we find monasteries released from the compulsory entertainment of the attendants on the king's horses, hawks, and hounds; but these attendants are not called falconers, nor is that name mentioned (so far as my knowledge extends) in any Anglo-Saxon law, prior to the eleventh century.† From this I infer that the hawks were left to the charge of the slaves generally, and had no special servant appointed to take care of them.

Hawks were, I think, first bred and trained with a view to profit, rather than sport. The Anglo-Saxons caught them early in the autumn, trained them, used them through the winter, and then let them fly away. "If a man has a hawk in the winter," they said, "it would feed itself and its owner, but in the summer, it eats off its own head and its master's."‡

In the tenth century, the custom of more completely training them was introduced, and many persons kept them through the summer that they might be ready for the winter; but this was considered the un-economical innovation of persons who knew

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* Bonifacii Opera, vol. i, p. 115.

† Codex Diplom. Anglo-Sax., No. 216, A.D. 822; No. 257, A.D. 844; No. 258, 845. Johnson's Canons, vol. i, p. 126. Marculfi Formulæ, 7 and 8.

‡ Archb. Alfric's Colloquy (by T. Wright), p. 5.

nothing of woodcraft, and was sneered at by the old fowlers. The ecclesiastical laws, both of the seventh and eighth centuries, which forbade the clergy to indulge in "hounds or dice," were, in the tenth century, extended to "hounds, *hawks*, and dice."

Hawks, also, at this time, were first accepted in payment of tribute, and were first (so far as we know) specifically bequeathed by will as valuable property. For these reasons I think that we may ascribe the general domestication of hawks in England to the end of the tenth century; and, if we may judge by the number and value of eiries mentioned in Domesday Book, great labour was bestowed on, and value attached to them. But it was only the smaller breed of hawks, used for capturing teal, moorhen, and small water-fowl, that were generally bred in England; the superior falcon, for attacking cranes and herons, was commonly obtained from Wales or Norway. One of them is valued in Domesday Book at the enormous sum of £10.

The Welsh may not have domesticated hawks so soon as the Saxons, but they excelled in breeding them. In the time of Howell the Good they were considered wild birds, and had no legal value. Anyone who stole a tamed one had merely to return it, and escaped the usual theft fine to the king, and theft damages to the owner.

At a period not long subsequent, the falconer was not only a special officer in every chieftain's household, but held the fourth rank among official nobles. He had a right to three gifts (I suppose, of food) a day from his chief, who was to hold his horse while he took herons or curlews; he was to be found in clothing, liquor, wax candles, and gloves; but he was never to leave his birds. Every other official noble might get as tipsy as he pleased, but the falconer was to drink three times a day only; nor was he, like the other nobles, to sleep in the chief's hall, or the bowers adjoining, *because the smoke was bad for his hawks*, but he was to sleep with his birds in the barn. From the time he put his hawks into mew, to the time he took them out, he was not to be sued or prosecuted.

At the end of the tenth century, trained hawks were received in Wales in payment of rent and tribute, and at a high value. The profit arising from their domestication is shown by the fact that their legal value was doubled by their being mewed.

With the introduction of firearms, the breeding of hawks ceased, for they were no longer the most profitable or exciting means of taking wild fowl.

Of all the animals which the Anglo-Saxons vainly attempted to domesticate, the eel probably cost them most labour and money. Enormous vivariums were attached to nearly every monastery, and supplied the monks with many thousands of eels to alleviate

the severity of their fasts. They bred freely in their prisons, and were very useful to man; but the eel was a slippery character and stole away whenever he could. The domestication of him was abandoned, and the more economical course pursued of leasing meres and marshes to fishermen, who caught, not bred, them and paid an almost incredible number, as rent.

The list of the animals which the Anglo-Saxons kept as pets, and probably attempted to domesticate, is a very long one; we have wolves, foxes, otters, bears, roebucks, hares, weasels, cats, ravens, rooks, dogs, cranes, peacocks, etc.

Of these pets the first, regarded as utterly irreclaimable, were "wolves, foxes, and otters." Their owners were not responsible for the damage they did; and for the bad reason that "they never did anything but mischief." Their characters went rapidly from bad to worse. Laws and exhortations for their total extirpation followed one another in quick succession. Beavers, martins, and ermines, were laboured at a little longer, because "they made borders for the king's garment;" but they also were soon given up in despair at an early period.*

Time does not permit me to add more than that the laws and charters contain an immense amount of interesting information as to oxen, sheep, dogs, cats, goats, poultry, and other animals: and I think point to the conclusion that, in the tenth century, the more important animals made progress towards, or arrived at, perfect domestication, while furtile attempts were generally abandoned.

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* Anglo-Saxon Home, p. 380; Intellectual Observer, No. xxxv, p. 318, et seq.

## XIV.—*On the Indians of South America.* By Sir WOODBINE PARISH, K.C.H., F.R.S., &c.

[*Read May 9th*, 1865.]

D'ORBIGNY supposes the number of Indians now existing in that vast extent of country from the confines of Bolivia to the southern extremity of Patagonia not to exceed 32,000, of which he calculates the Tehuelches or Patagones to consist of 10,000; the Puelches of the Pampas, 600; the tribes between the Ventana and Rio Negro, 1,500; the Charruas of the Banda Oriental (now extinct), Tobas, Abipones, Lenguas, Matagayos, Guaycurus, and Payaguas, in the Gran Chaco, 6,000; but these are much lower numbers than are generally given to these Indians by the best informed people at Buenos Ayres.

Azara, who gives a very full account of all these tribes, says he could count thirty-two languages amongst them.

And this is nothing, if we adopt the lists given by the Jesuits of the various peoples amongst whom they established their missions; most of them, however, small and insignificant tribes, whose names, in enumerating their own labours, they have left us, which modern writers and map-makers, knowing little else of those countries, have in many cases adopted and put down as those of distinct *nations*, rather than migratory groups—as most of them really were—separated from their parent stock by the necessity of seeking their means of subsistence in new lands.

May they not be generally classified under a very few heads or original stocks? as for example:—

1. The Araucanian and Pampas Indians, on the eastern side of the Andes, scattered over Patagonia—nomade tribes, but stopped from proceeding northward by heat of climate and rivers.

They had no canoes, and subsisted by hunting wild animals, which they killed with their bolas and lances, and made cloaks of their skins..

2. The Tupis and Guaranis of Brazil and Paraguay—a docile people, cultivating the fruits of intertropical climes, such as the cassava or mandioc root, maize, etc.

They were fishermen, and had canoes, in which they were carried by the rivers flowing northward to great distances. They grew cotton, and made clothing of it.

3. The Peruvians, the Aymaras, and Quichuas, more or less in an advanced state of civilisation.

They had llamas as beasts of burthen, and the wool of the alpacca and vicunas to clothe them, and had established a system of government, under the Incas, far superior to any other found in America by the first European discoverers.

In the primitive state of the aboriginal inhabitants of these countries, without horses, or any facilities for emigration from their own lands, except the rivers, climate and the natural products of their soil may have very mainly influenced the range of their settlements and extent of their migrations beyond them. Thus, the Guaranis, who were habituated to subsist principally on the mandioc or cassava root and maize and mati, which they cultivated in the intertropical plains of Brazil and Paraguay, would be arrested in any extension of their settlements southward by a difference of climate, in which those plants would cease to flourish (the cassava is not found below 29 deg.). The same cause would not stop their migration to the north, which would have been facilitated by the many great rivers running in that direction towards the Amazons, on the shores of which their language is found.

On the contrary, the more hardy and warlike Araucanian tribes, nurtured in the colder regions of the Andes, without fixed habitations—a race of hunters, subsisting on the wild animals they caught with their slings and bolas in the deserts and plains of Patagonia, without canoes or the means of passing the great rivers which run across the continent—had little inducement and no facilities for entering the enervating climes further north, where to obtain their daily food it was necessary to till the earth,—an office which they looked upon as degrading, and only fit for the more docile and feeble inhabitants of those latitudes.

The Fuegians originally, perhaps accidentally, separated from the same stock, cut off by their insular position from the rest of mankind, and with the most scanty means of subsistence, seem, of all these people, to have lapsed into the lowest state of misery and barbarism.

The rivers carried the Guarinis everywhere northward as far as the Amazons, and beyond it. In the migrations and dispersion of their race along the shores of the great rivers, they were brought in contact with the Peruvians, from whom they probably first learnt the art of war in self-defence, which in later times made some of them formidable opponents to their Spanish conquerors. Such were the Payaguas who killed Ayalas and his party on the shores of the Gran Chaco.

It does not appear to me to be proved that any of these nations were worshippers of idols or carved images; they had an undefined idea of a future state, and of the power and influence of a Great Good and Evil Spirit. They prayed to the latter not to do

them harm. The other, if worshipped at all, was so by implication through the sun and moon, as they exercised their planetary influence over the established order of nature, and of all they saw daily and nightly around them.

It is difficult, after the lapse of more than three centuries, to account for the dispersion of these races, which (except in the case of Peru) possessed no historical records, and whose imperfect traditions as to their own origin were little cared for by their conquerors before they were irretrievably lost; whilst, on the other hand, they have been superseded by the teaching of Christian missionaries who from time to time have been among them, and who, in their zeal to impress upon them the Bible history as that of all mankind, have left them some confused notions of our first parents, of a deluge, and of the repeopling of the whole earth, which, though noticed by more recent travellers and writers as being found amongst them, had, I believe, no existence whatever in the minds of those races before the discovery of their country by the Spaniards.

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## XV.—*On the True Assignation of the Bronze Weapons, etc., supposed to indicate a Bronze Age in Western and Northern Europe.* By THOMAS WRIGHT, M.A., F.S.A., etc.

[*Read Nov.* 21*st*, 1865.]

WITHIN a few years there has come into existence, I will not say a new science, but certainly a new and very extraordinary field for scientific inquiry. Not long ago, antiquaries limited their knowledge of the remains of human industry in this part of the world to a few generations, at most, before the date when we are made acquainted with its inhabitants by the Roman historians, and everybody was satisfied with the biblical account, that mankind had existed upon this earth somewhat more than six thousand years. It is but recently that we were all surprised by the announcement that flint implements, which had evidently been formed by man's hand, had been found in the geological formation known by the name of drift. As soon as this discovery became an accepted fact, and more general attention was called to the subject, it was discovered that these flint implements, instead of being rare (as we might perhaps have expected), were, in many parts where the drift was examined, so abundant as to imply the evidence of a considerable population at a period of course preceding the formation of the drift itself. These implements present a great uniformity in shape, and to some degree in size,—at all events, there are only two or three varieties,—and it is remarkable that, while the fossil bones of various animals are found in the same drift, there has been as yet no authentic discovery of human bones; yet there appears to be no room for doubt that these implements are really the work of man. Of course, according to the opinions of geologists on the age of the drift, this discovery would carry back the existence of man on earth to an immense distance beyond the biblical date, and it leaves us for speculation and theory a period of far greater extent than the whole historical period. The question of the Antiquity of Man became thus an attractive, and even an exciting, study. It happened that the northern—the Scandinavian—antiquaries, whose peculiar fault is a spirit of too hasty generalising, had already started an ingenious theory in relation to these pre-historic times, according to which these were divided into three periods or ages, distinguished by the names of stone age, bronze age, and iron age. During the first of these periods, metal was unknown to man, and stone was the best material he had for the manufacture of weapons

or of other implements for cutting or hammering; the second was characterised by the use of bronze as the only metal; in the third, bronze had been superseded for these purposes by iron. This system of periods was eagerly embraced by the new school of pre-historic antiquaries, who have even refined upon it and divided at least the first two periods into subdivisions.

It is this dark and mysterious pre-historic period which has furnished the subject treated in the handsome volume recently published by my friend Sir John Lubbock,* which treats successively on the system of periods or ages just mentioned, on the tumuli of the pre-historic times, on the lake-habitations, shell-mounds, and caves, on the more general subject of the Antiquity of Man himself, and on the manners of modern savages, which the author employs very judiciously to illustrate those of the savages of pre-historic ages, for absolute savages at all times bear a certain resemblance to one another. I will only add, as to the book itself, that it is a well written and well arranged work, characterised equally by purity of language and by its singular clearness and perspicuity, while it presents a view of the whole subject which surprises us by its comprehensiveness, without wearying us with what too often constitutes comprehensiveness, a close dry mass of enumerations of facts. My intention on the present occasion is to take Sir John Lubbock's work only from one point of view—so far as its talented author treats of the system of periods—a system which, it is tolerably well known that I, in common with antiquaries of some eminence in their science, reject altogether, and look upon as a mere delusion, and some parts of the first chapters of my friend's book are aimed at me; that is, they are directed against opinions which I have expressed and which are here rightly put into my mouth, and I am glad of the opportunity of explaining my reasons rather more fully. It will be understood by everybody that whatever strictures I have to make are directed, not against Sir John Lubbock's writings, but against the opinions of the school of pre-historic archæologists which he has adopted, and which are here stated more fairly and distinctly than in any other work with which I am acquainted.

I am by no means inclined to impugn hastily the general conclusions to which men of science seem now arriving upon the great question of the antiquity of man—it is a subject in regard to which I look forward with anxious interest to the increase of our knowledge, certain that the ultimate result must be truth. *Magna*

* "Prehistoric Times, as illustrated by Ancient Remains, and the Manners and Customs of Modern Savages." By Sir John Lubbock, Bart., F.R.S. 8vo. Williams and Norgate. 1865.

*est veritas, et prævalebit.* But I complain of the treatment which the science of archæology has hitherto received at their hands. There was a cry some time ago—and nobody joined in it more heartily than myself—that a close alliance should exist between archæology and geology; but this was to have been a fair and equal alliance, in which the geologist should accept the conclusions of archæology on the same footing as the archæologist is expected to receive the opinions of the geologist. Instead of this, the geologist seems to have considered that the science he had thus to give his hand to is a vague and uncertain one,—he has created a sort of archæology of his own, made in the first place to suit his own theories, and he takes only the advice of those who will give him an opinion which is in accordance with a foregone conclusion, and this is often quite contrary to the teachings of archæological science. Archæology, as a science, has now reached too high a position to be treated with so little respect. But let us go on to the more especial subject now before me.

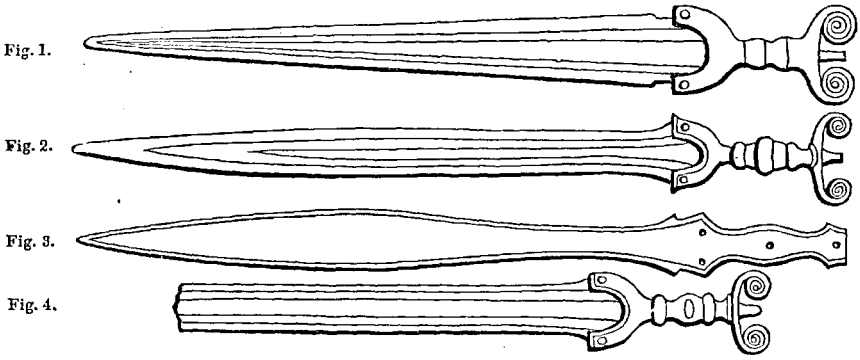
Sir John Lubbock alleges that "Mr. Wright sees nothing in Great Britain which can be referred to ante-Roman times" (p. 35); and upon this he remarks (p. 36), "But if we are to refer not only the bronze implements, but also those of stone, to the Roman period, what implements, we may ask, does Mr. Wright suppose were used by the ancient Britons before the arrival of Cæsar? It would be more reasonable to deny the existence of ancient Britons at once, than thus to deprive them, as it were, of all means of obtaining subsistence." What I have said on this subject must have been strangely misunderstood, or I may have explained myself badly; for I am entirely unconscious of having ever uttered an opinion which could bear the interpretation here given to it. I have said, and I still say, that I do not believe we have many —perhaps any—monuments of importance much older than the Roman period, and that such ancient remains as are supposed to be older than the Roman period bear no characteristics which would enable us to ascribe them to any particular date. I have never pretended to deprive the Britons of the use of stone,—it would not be in my power; but I say that stone was also in use for the same purposes in Roman and Saxon times, and that the mere presence of a stone implement does not prove that the deposit was British any more than Roman. Stone, of various kinds, is a very ready and convenient material for purposes such as the stone implements of antiquity evidently served, and it is found in use in Western Europe even in the middle ages. Stone implements have often been found on Roman sites in this island; they have been found in Saxon graves in Kent, and I have myself found flint flakes, evidently placed there by the hand of man, in Saxon graves in the Isle of Wight, perfectly resembling those of which

the geologists have talked so much of late. The Abbé Cochet found similar flint flakes in Roman graves in Normandy, so arranged as to leave no doubt that they were placed there intentionally.

Sir John, indeed, acknowledges that implements in stone were in use in Roman times, but it was not so much a difference between the poor and the rich, as he puts it (the structure of society was altogether different from that of modern times), as between different localities. It would be very wrong to suppose that the social condition of Britain under the Romans was uniform in cultivation and condition throughout the province. There were no doubt "savages" in wild and retired parts of the island, as there have been in much more recent times, and communication between distant localities, except on the lines of the great roads, was slow and precarious. People must thus have been frequently exposed to the inconvenience of falling short of metals, which, moreover, were probably always expensive, and then they would be obliged to have recourse to stones, the use of which would thus be habitual. People, under this state of society, could not go to obtain their flint implements at distant manufactories, but must either have made them individually for themselves, or, at the most, there may have been a man in each village or rural district who was more skilful in making them than his neighbours, and supplied them to those who were able to purchase. In this manner there must have been, throughout the land, at the same time, a vast variety in the form and style of flint implements, according to local taste or individual caprice, so that it would be absurd to consider difference of form and character as a proof of difference of date. In primitive times diversity, and not uniformity, was usually the rule, and sometimes this difference of form and design became almost a family distinction. Among the Anglo-Saxons, long after they had risen above the character of savages, the different tribes were distinguished by different forms of personal ornaments, and we know that in much later times the clans of the Scottish highlanders have been similarly distinguished by the patterns of their plaids.

But, enough of stone for the present—let us proceed to bronze, which forms the grand corner-stone of the edifice of this system of periods. We may, perhaps, consider as the most important of these objects of bronze the swords, because they present a greater number of peculiarities of form than any of the other classes, and the circumstances connected with their discoveries seem at a first glance of the subject to suggest more difficulty in identifying them with the Romans; I shall, therefore, take them as the special object of my investigation, but the arguments I shall use with regard to them apply with still more force to the other ob-

jects made of the same metal. I give four examples of these swords in the cut No. 1, three of which are taken from Sir John




No. 1. Examples of Bronze Swords.

Lubbock's "Pre-historic Times", as the readiest and most convenient book to quote. It will be seen that there are here three forms of blades, of which figs. 2 and 3 are what are commonly called leaf-shaped, the blade of fig. 1 tapers from the hilt to the point, while the two edges of the blade in fig. 4 are nearly parallel. They are all distinguished by the peculiarity of being ribbed. The swords, as will be seen, present two descriptions of handles, which were either of the same material as the blade and rivetted to it, or of material of a more perishable nature, and attached to the blades in the same manner as our old knife-handles. These swords, it must be agreed, do not present any varieties of forms which might be supposed to have originated among different peoples unacquainted with one another, but they are perfectly identical in character, yet they have been found in almost all parts of Europe. Of the four examples here given, No. 1 was found in the valley of the Somme in France; 2, in the lake of Neufchatel in Switzerland; 3, in Sweden; and 4, in some part of Scandinavia, but I am not aware of the exact locality.* No one could doubt for a moment the identity in form of the handles of figs. 1, 2, and 4.

Sir John asserts that "bronze weapons are *never found associated* with coins, pottery, or other relics of Roman origin"; he then proceeds to quote a statement of mine to the effect that on all the sites of ruined Roman towns these other objects are found scattered about rather abundantly; and he adds somewhat trium-

* In the noble museum of my friend Mr. Joseph Mayer, in Liverpool, there is one of these leaf-shaped bronze swords, which was found in Hungary; it came from the collection of the late Count Pulszky.

phantly, "We may assume, then, on the authority of Mr. Wright himself, that, if all these bronze arms were really of Roman origin, many of them would have been found from time to time in conjunction with other Roman remains." I can admit of no such assumption as arising from the facts I have stated; and I am sorry to be obliged to say that this remark only shows that my friend, in common with the advocates of this system of periods generally, is but imperfectly acquainted with the archæological conditions of the question. The reason we do not find bronze swords under the circumstances which he insists upon, is a very simple one, easily explained, and applies to iron swords equally with bronze swords. The Romans did not bury their weapons with the dead, and they took great care of them, especially of the sword, while alive. Even in the last struggles of the empire, when the Romans must sometimes have been obliged to leave their weapons behind them, the barbarians, among whom we know that a sword was an object of inestimable value, took very good care to carry them away. The consequence of this is that a Roman sword in iron, is one of the rarest objects of antiquarian discovery. I remember, within my own observation, hardly a single instance of one having been found in Roman Britain, and not above two swords supposed to have been found here, and it is my impression that the bronze handle of one of the latter presented a considerable resemblance, in its style of ornament, to those of some of the bronze swords found in Scandinavia. During the whole of our excavations at Wroxeter, which have filled a considerable museum with articles of Roman fabrication, we have never met with the smallest fragment of a Roman sword, nor do I remember a single instance of such a find on any site of a Roman town or villa in this island. In one or two cases in the West of England, as in the very remarkable discoveries at Hod Hill in Dorsetshire,* bundles of unfinished iron blades, which looked like swords, have been discovered under circumstances which appeared to me to show that they had been government stores on their way to some imperial manufactory where the finish was to be given to them; other antiquaries thought they were not swords at all, and I think they may be right; but it is a very remarkable circumstance that among the Roman antiquities found at Hod Hill there was one undoubted iron sword-blade, and this was in every respect *an exact copy* of one of the swords in bronze, of which we are now speaking, a proof beyond doubt that the latter were at that time well known.† This Roman sword-blade is represented in the cut annexed (No. 2), and will be seen to

* See Roach Smith's "Collectanea Antiqua", vol. vi, p. 1.

† I may remark that, to my knowledge, one or two examples have been found in this island of the so-called "celt" cast in iron, instead of bronze,

possess the characteristic leaf-shape, with the ribs, and the holes for the rivets, by which the handle was fixed on. The fact of no

No. 2. Blade of a Roman Sword.

Roman swords in iron being found, would be rather in favour of the bronze swords being Roman. Again, Sir John Lubbock gives as one of his arguments against me the fact that the bronze and iron swords and other implements are not found mixed together in the same locality. It seems to me that this is exactly what we might expect, especially in the case of the swords. These, as I have just observed, were valuable articles, and were probably, at least in the provinces, in the possession of few individuals, except the military. The inhabitants of a lacustrine village, for instance, were not likely to be in possession of a sword, unless they had stolen it, and whence would they steal it? From some soldier belonging to the nearest military post. I am sure that Sir John Lubbock will allow that it has never been the custom to arm any corps of troops with a variety of weapons—if their swords were bronze, they were all bronze, if iron, all iron. The discovery, therefore, of weapons in any particular place would only necessarily show that it was the weapon with which the detachment of Roman troops stationed in that neighbourhood—or, at least, nearest to it—were armed. But I think that it is stated rather rashly that bronze swords are not found with iron swords; for in the very rare instances of the discovery of Roman iron swords found in Britain, in, I believe, almost a majority of cases they have been found associated with bronze swords. A few years ago a Roman sword in a bronze scabbard, the blade appearing from the rust to be of iron, was dredged up from the Thames, along with a very fine specimen of the well-known bronze leaf-shaped sword, and a large stone celt, all which are now in the museum of Lord Londesborough, at Grimston Park, in Yorkshire;* and a similar iron sword in a bronze scabbard was found together with a bronze sword in the river below Lincoln, at a spot where a

but of course the casting in bronze was the easier process. It is a proof, however, that, when these implements were made, iron and bronze were both in use. In my friend Mr. Roach Smith's museum, now in the British Museum, there was a remarkable Roman spear-head, *of the bronze type*, but of iron; it was found in the Somme at Abbeville.

* The iron sword is engraved and described in Roach Smith's "Collectanea Antiqua", vol. iii, p. 67.

bronze circular shield had previously been found.* The discovery, in one or two instances, of a mass of bronze implements, with no mixture of iron, leads only to the conclusion that they had formed the stock-in-trade of some dealer in bronze implements, or that they had been a consignment of such articles lost on the way. But of this I shall say more.

I must, however, state generally that the archæological fact is that, instead of our *not* finding the bronze swords in juxta-position with Roman remains, in every case where they have been found in Britain or Gaul, where the details of the discovery have been carefully observed, it has occurred under circumstances which lead to the strongest presumption of their being Roman. A bronze sword, of the usual leaf-shaped type, is stated to have been found at the Roman station of Ardoch in Scotland, on the wall of Antoninus, and there appears no reason to doubt the accuracy of the statement.† But, to come farther south, it is well known to the archæologist that the great treasury of the antiquities of Roman London—and of mediæval London also—is the mud of the river Thames, and within the limits of the town, I believe that no object has been found that could claim an earlier date than Roman. This is just the place where objects of all kinds would be deposited by accidents, such as boats upsetting in the transit, people falling in and being drowned, and the dropping into the water of objects of various kinds which would sink by their weight. Now swords have been found in the Thames at London, and I should underrate the number in saying a few, but they were nearly all of bronze, and leaf-shaped in form, which might almost be taken to show that this bronze sword was most in fashion among the Romans in London. Certain it is, that my friend Mr. Roach Smith, who has examined these Roman antiquities of London more extensively and deeply than anybody else, and whom I have no hesitation in saying that I regard as the first authority on the antiquities of the Roman period in England or even on the continent, is convinced, equally with me, that the bronze swords are of Roman manufacture or origin.‡ Discoveries of the axes, chisels, and other implements of bronze, have been much more frequent, and in positions which speak still more strongly of their Roman character. Thomas Hearne, who first called attention to these objects more than a century ago, took it for granted that they were Roman, but he

* Roach Smith, ib., p. 68.

† Stuart's "Caledonia Antiqua", second edit., pl. v, where this sword is engraved. I make the remark, because Sir John Lubbock expresses a doubt upon it:—"Yet Mr. Wright himself has only been able to give me one *doubtful* instance of this kind" (p. 12).

‡ See, for some remarks on this subject, his "Catalogue of London Antiquities", p. 80.

unfortunately gave it as his opinion that they represented the Roman *celtis* (a technical word for a sort of chisel), and, in the low ebb at which archæological knowledge has stood from his time down to the present generation, antiquaries seem to have blindly fallen into the mistake that the name *celt* (*celtis*) was equivalent to *Celtic*, and that *it* meant that they belonged to the ancient Britons. In this blunder solely, I believe, originated the notion that these "celts" are not Roman.

Let us now cross the Channel to our neighbours, and see what is the case in Gaul. France has undoubtedly produced by far the ablest, the soundest, and the most judicious antiquaries of modern times; and I believe that they have all regarded the bronze swords, equally with the other bronze implements, as Roman. I will quote the authority of Monsieur de Caumont, to which I am sure that nobody who knows anything of archæology will object. In his *Cours d'Antiquités Monumentales*, De Caumont, in speaking of these so-called "celts", says, "But we find also very frequently these bronze axes in places covered with Roman ruins; I have acquired the certainty of this by my own observations and by the information I have collected in my travels."* Again, the same distinguished scholar, in speaking of the bronze swords, after noticing the opinion of a previous writer who thought that the Gauls had derived the use of these swords from the Greeks, goes on to say, "At all events, I must not conceal from you the fact that the bronze swords have been found sometimes along with objects of Roman manufacture, which would seem to announce a different origin."†

I will go back a little farther among the antiquaries of France to produce not only opinions, but facts, such as I think ought to set the whole question at rest. At the beginning of the present century flourished the able antiquary Antoine Mongez, one of the most celebrated members of the Institute of France, a man distinguished for his science and learning, and for his judicious use of them. On the 16th of Prairial, an 9 (for we are still in the days of the Republic), according to our reckoning the 5th of June 1801, the "citoyen" Mongez read at the Institute, before what was then called the Class of Literature and Fine Arts, but which is now represented by the Académie des Inscriptions et Belles Lettres, a memoir on an ancient bronze sword, which had been found with the

* Mais on trouve aussi *très fréquemment* des haches en bronze dans des emplacements couverts de ruines Romaines; j'en ai acquis la certitude par moi-même et par les renseignements que j'ai recueillis dans mes voyages.—De Caumont, "Cours d'Antiquités Monumentales", tom. i, p. 232.

† Toutefois je ne dois pas vous laisser ignorer que les épées en bronze ont été trouvées parfois avec des objets de fabrique Romaine, ce qui paroîtrait annoncer une autre origine.—Ib., p. 239.

skeleton of a man and horse, in a turbary (*tourbière*) near Corbie, at Hailly, in the valley of the Albert, a tributary of the Somme. In this memoir, which is published in the volume of the papers read before the class,* this sword is described, and figured in an engraving; it is the sword represented in fig. 1, in our cut No. 1, and is entirely of bronze, blade and handle. The object of Mongez was chiefly to analyse the bronze of which this sword was made; but he also enters into the question of what manufacture it might be, and, after careful discussion, he arrives at the conclusion that these bronze swords were all Roman. On the 8th Frimaire, an 10 of the Republic, or the 29th of November 1801, in our reckoning, M. Mongez read another paper on three bronze swords which had been recently found near Abbeville, and which resembled the other so closely that he thought it unnecessary to have them engraved.† Mongez re-considered the question, and again pronounced them Roman—*je les crois Romaines.*

After Mongez had read his Memoires on the bronze swords before the Institute, his opinion received a singularly remarkable confirmation in a more exact and complete account of the circumstances of the discoveries, which he obtained from a very zealous and able antiquary of Abbeville, M. Traullé. The bronze sword, as just stated, was found in the turbary at Heilly along with the skeletons of a man and a horse, and by the sword were four brass coins of the Emperor Caracalla, who, as is well known, reigned from A.D. 211 to 217.‡ This sword, therefore, was that of a Roman cavalry soldier, not older, and perhaps a little later, than this reign, who had sunk in the bog to which the turbary had succeeded. The history of two of the other swords, found in a turbary at Pequigny, near Abbeville, was, if anything, still more curious. A large boat was found, which had evidently sunk, and in it were several skeletons. One of these had on his head a bronze casque, or helmet, accompanied with the remains of the other accoutrements of a soldier. The bronze sword lay by his side, and with it some Roman coins, some of which, if not all, were middle brass of the Emperor Maxentius, who reigned from 306 to 312.§ Another similar sword was found in the turbary outside the boat, which would appear to have been sunk in a skirmish after some of its crew had been killed in it. We learn here that Roman soldiers, in the wars and troubles which agitated Gaul in the third and fourth centuries after Christ, were armed with these bronze swords which some have so ingeniously supposed to have been brought into this island by the Phœnicians, some seventeen or eighteen hundred years before the

* "Mémoires de l'Institut Nationale des Science et Arts".—Littérature et Beaux Arts, tom. v, p. 187.

† Ib., p. 496. ‡ Ib., note on p. 193. § Ib., note on p. 501.

Christian era. From the time of Mongez, the French antiquaries have regarded the bronze swords as Roman.

I have thus crept on from one little, though significant, fact to another, until it seems to me tolerably clear that they all point to one conclusion, that the bronze swords found so often in different parts of western and northern Europe are Roman; that is, that they were all either of Roman manufacture, or, at the least, copied from Roman models. I consider that this evidence is sufficiently strong, but still it will be worthy of inquiry, whether it be confirmed by pictorial delineations on Roman monuments. I have no doubt that with a little labour we might bring together a mass of corroborative evidence of this description which would be quite irresistible, but I regret to say that pressing engagements of a different character will not at present allow me to undertake that labour myself to its full extent. I think, however, that I can produce a few very satisfactory samples of it—and I will only take them in two classes of such monuments.

First, as to the sculptures on stone, the figure of a Roman soldier, generally on horseback, is a common adjunct to sepulchral inscriptions found in the Roman cemeteries. Unfortunately, the soldier usually has his sword by his side in its sheath, and although the shape of the sheath would lead us to believe that they did hold blades of the different known forms of the bronze swords, yet we cannot insist upon it. If the sheath were made of the form of the blade of a leaf-shaped sword, of course the blade could not be drawn out, it is therefore represented in one uniform shape, distinguished only from any ordinary scabbard by being short. However, I feel convinced that I have seen one or two of these sculptures in which the Roman soldier held the sword drawn, and in which it was clearly leaf-shaped; but I cannot at this moment put my hands upon them. If any one, however, will take the trouble to look over the plates of that readiest of all books of reference, the père Montfaucon's *Antiquité Expliquée*, he must be convinced of the absurdity of denying that these swords are Roman. In the sculptures on the arch of Constantine at Rome, about contemporary with the bronze swords found near Abbeville, and described by Mongez, the Roman soldiers are evidently armed with the leaf-shaped swords, as well as with the other forms shown in our cut No. 1, a circumstance which brings into immediate relation the forms and the metal.*

* I will merely refer to this great work, tom. iv, plate vii, fig. 3, for a Roman soldier from a sculpture at Narbonne, with the leaf-shaped sword by his side; to pl. xxiv, where there are several of our swords a little varied in ornament; to pl. lii, representing a combat in which the Romans have their swords in their scabbards, but the handles seem clearly to represent the scroll-formed ornament represented in our cut No. 1; to pl. lxix and

But I will go further from Italy, and give examples from an important work very recently printed,—I mean the *Exploration scientifique de l'Algerie*, published at the expense of the French government,—which are represented on Roman monuments in another part of the world. In the archæological part, the work of M. Delamare, engravings are given of a number of Roman monuments of various kinds found at the town of Constantine in the province of Algeria, the Roman Constantina, representing the still older Numidian town of Cirta. Most of these sculptures are rather rude, and belong probably to the time of the emperor from whom the town took its second name. On one of them,* we have a representation in sculpture of the accoutrements of a soldier, with the figure of a sword on each side—the swords are represented in our cut No. 3, figs. 1 and 2. Another sculptured monument, found also at Constantine,† contains several figures of swords, one of which I give in the same cut, fig. 3. One of these swords is distinctly leaf-shaped, and they are all characterised, as clearly as such things are usually drawn in these rude Roman sculptures, by the ribs which are found on the bronze swords. The handles are clearly intended to be represented as fastened on in the same way as those of the bronze swords, and fig. 3 is no doubt intended to represent the same termination of the hilt as is shown in figs. 1, 2, and 4, of our cut No. 1. In the other two, this termination is replaced by a ball, but the rest of the handles are quite identical.

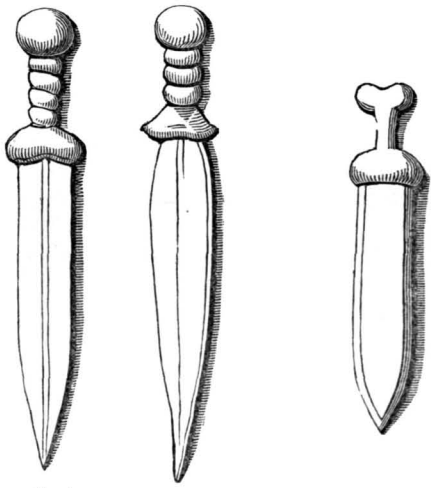


Fig. 1. Fig. 2. Fig. 3.
No. 3. Roman Swords from Algeria.

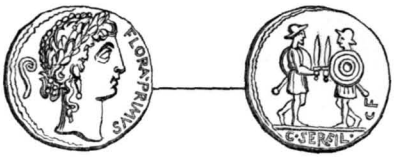
I will next proceed to a class of monuments of, if possible, still greater importance in the discussion of our subject, the Roman

lxx, where the swords are the same represented in our cut, though not leaf-shaped; and to the Supplement, tom. iv, pl. xv and pl. xxx. In the work itself, tom. iv, pl. xiii, the Etruscan soldiers are represented as armed with the leaf-shaped sword. In fact, it was the Italian sword, derived, no doubt, from the Greeks.

* Represented in plate 156, fig. 3, of the work in question.

† Ib., plate 128, figs. 7 and 8.

coinage. The coins of what are called by numismatists the consular series, are remarkable for the interesting illustrations they give us of Roman costume and Roman manners, and are, on that account, well worthy of the study of the antiquary. Examples of swords are found on coins of the Servilia, Carisia, Plætoria, Terentia, and Minutia families, which evidently represent the ordinary forms of the bronze swords which we are discussing. I give as an example a well known coin of the Servilia *gens.** The obverse represents the head of the goddess Flora, with the inscription FLORA . PRIMVS, meaning that in giving the Floralia that year, the member of this family in whose honour the coin was struck, and whose name is given on the reverse as C . SERVEIL . C . F. ; *i.e.*, Caius Servilius, the son of Caius, stood first. On this reverse we see two military figures, standing face to face, with drawn swords, and these plainly have the same ribbed leaf-shaped blades which are represented in our cut No. 1. The man in whose honour this coin was struck was a contemporary of Julius Cæsar. The second example of these coins I give belongs to the Minucia family, and to a member of that family named in the inscription Q . THERM . MF, Quintus Thermus, the son of Marcus.† Three men are here engaged in combat, one apparently a Roman protecting a fallen comrade against his foe, whose difference of costume probably denotes a foreigner.‡ The swords of the two Romans are evidently identical in form with that represented by fig. 4, in our cut No. 1. Thus an examination of this best of all evidence, the coinage, leaves us no room for doubting that the characteristic sword of republican Rome was actually this same sword to which the prehistoric archæologists have been ascribing such a remote date in our islands.



No. 4. Coin of C. Servilius.

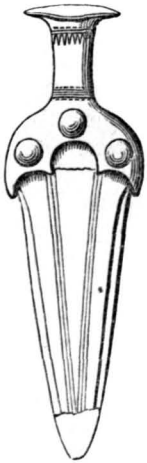
No. 5. Coin of Quintus Thermus.

* It is copied from a beautiful example of the coin in the cabinet of my friend Mr. C. Roach Smith.

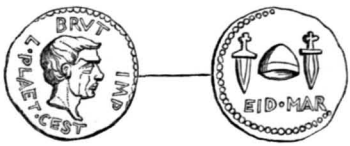
† It is here engraved from a coin in the British Museum.

‡ Julius Cæsar made his first campaign under Marcus Minucius Thermus, and fought with distinction at the taking of Mytelene, on which occasion he saved the life of a Roman citizen, and received from Thermus a civic crown as his reward. It is understood that this act of Cæsar is commemorated in this coin of Quintus Thermus, the son of Marcus.

In these coins we trace, curiously enough, all the forms of weapons of bronze found in this country. The spear-heads, drawn small, are like spear-heads in general, but nobody doubts that the Roman spear-head was made of bronze. We trace here the figures of the round bronze shields formed of concentric circles, which the pre-historic antiquaries ascribe to the Britons of the ante-Roman period, and of which a good example is seen in the hands of one of the soldiers holding the leaf-shaped swords, in our cut No. 4; and in some examples the concentric circles are more numerous, and resemble still more closely those found in Britain. But there is another object on which the light thrown by these coins is still more remarkable. A curious broad-bladed dagger, of bronze, is not unfrequently found in early barrows in this country, the blade ribbed, and evidently belonging to the same period as the bronze swords. I give, from Sir John Lubbock, an example found in Ireland (cut No. 5), which will afford a general idea of the form of these daggers, which used to be called British. I was always inclined to ascribe them to rather an early date; that is, to a period very little before Cæsar's time, or at least early under the Roman domination, not because I thought they could not be Roman, but because, as the Romans did not bury their arms with the dead, it seemed reasonable enough to suppose that barrows in which they are found are older than the final and entire establishment of Roman customs and laws. But the Roman consular coins, on which daggers identical in character, broad-bladed and ribbed, and with the same handles, occur frequently. I give in cut No. 7, a very curious example.* It is a coin of Junius Brutus, who slew Julius Cæsar. On the obverse we have the name L. PLAET. CEST; *i.e.*, Lucius Plætorius Cestianus, one of the officers of Brutus, by whose order the coin was struck, and who gives to his chief the title BRVT. IMP; *i.e.*, Brutus imperator. On the reverse, we see the terrible emblems, the *pileus* or cap of liberty in the middle, two daggers, and the word EID. MAR, *Eidus* (the archaic form of *Idus*) *Martiæ*, the day on which the deed was done. We see at a glance that the dagger with which Cæsar was slain was identical in every particular with those



No. 6. Bronze Dagger.




No. 7. Coin of Brutus.

* Engraved from one in the British Museum.

found in the tumuli of Britain which some antiquaries are now ascribing to the remote age of Phœnician colonies!

Thus we see that the bronze swords, the bronze shields, the bronze spears, the bronze daggers, which have been found in Britain, are all Roman in character. The so-called "celts," chisels, etc., bear the same character with the weapons, and are sometimes found with them, and probably continued in use later. It is my firm conviction that not a bit of bronze which has been found in the British islands belongs to an older date than that at which Cæsar wrote that the Britons obtained their bronze from abroad, meaning, of course, from Gaul, *ære utuntur importato.* In fact, these objects in bronze were Roman in character, and in their primary origin.

And who has ever brought forward any evidence to show that the Romans did not use bronze for their weapons? Pliny tells us that, in the treaty which concluded the war between Porsena and the Romans after the expulsion of the Tarquins, that is about five hundred years before Christ, it was expressly stipulated that the Romans thenceforth should use iron for nothing but agricultural purposes.* Our acquaintance with the condition of that time is not sufficiently minute to enable us to judge what was the cause or the object of this stipulation, but it seems clear that swords were not made of iron, and they must therefore have been made of bronze. This stipulation continued in force during some three centuries, and it was only after the second Punic war, we are told, that the Romans began to adopt the form and material of the sword as it was in use among the Spaniards. Polybius tells a curious anecdote relating to the great victory obtained by the Romans over the Gauls during the consulate of Caius Flaminius, a little more than two hundred years before Christ. He informs us that the Gauls were armed with long pointless swords, which they used only in striking the enemy, while the Romans used short, stiff, pointed swords, with which they stabbed at the face and person. When the Gauls struck hard, the blade of the sword became so much bent that the soldier had to straighten it with his foot before he could strike another blow. The Roman officers, having observed this, directed the soldiers to close upon the ranks of the Gauls, and thrust vigorously at their bodies and faces, before the latter had time to recover the use of their swords, and by this manœuvre the great inequality of numbers was partly compensated.† We cannot doubt, from this

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* In fœdere quod expulsis regibus populo Romano dedit Porsena nominatim comprehensum invenimus, ne ferro nisi in agricultura uterentur.—Pliny, "Hist. Nat.", lib. xxxiv, c. 39.

† Polybii Histor., lib. ii, c. 33.

description, that the swords of the Gauls were made of iron, and that their liability to bend arose from the circumstance that that people did not yet possess the art of tempering it; while the account of the Roman swords answers exactly to the short pointed bronze weapons of which we are speaking. We have a rather similar anecdote, of a later date, which brings us nearer home. Tacitus tells us that, in the great battle in which Agricola defeated the Caledonians under Galgacus, the Britons were armed with immense swords, that is, of course, long ones, and small bucklers; while the Roman auxiliaries, consisting of three cohorts of Batavi and two of Tungri, who were chiefly put forward in the engagement, were armed with short pointed swords (*mucrones*). The result was the same as that just described: the Roman auxiliaries closed upon the Caledonii, who, unprepared for this to them new mode of fighting, were defeated with great slaughter.* These anecdotes point very distinctly to the bronze swords of which we are speaking. We are thus tracing the use of bronze swords very near to the time, or quite to the time, when the leaf-shape and other forms are seen on the consular coins, so that we are quite justified in supposing that those represented swords of bronze. I know nothing in the Latin classical writers contradictory to this view of the subject. Even Virgil, the fashionable court poet, and the least likely of any to give evidence on my side of the question, was certainly well aware of the use of bronze in the manufacture of arms. The armour was of bronze —that of Mazentius was triple in thickness ("ære cavum triplici," *Æn.*, x, 784), like the triple bronze which surrounded the breast of the brave man in Horace ("æs triplex circa pectus erat," *Carm.*, lib. i, od. 3); the helmet was of bronze ("ære caput fulgens," *Æn*, x, 869); the shield was of bronze ("ærei clypei," *Æn.*, xii, 541, and "ærea scuta," *Æn.*, x, 313); the battle-axe was of bronze ("et æratam quatiens Tarpeia securim," *Æn.*, xi, 656). In one instance, Virgil speaks even of bronze swords,—

"Æratæque micant peltæ, micat æreus ensis"—*Æn.*, vii, 743.

It is true, that these bronze swords are put into the hands of a people foreign to Italy, but it is not stated that they were peculiar to that people. Virgil, further, uses the word *æs* for arms generally. Æneas, describing his flight from Troy, with his father on his shoulder, says,—

"Genitorque per umbram
Prospiciens, 'Nate', exclamat, 'fuge, nate; propinquant,—
Ardentes clypeos atque æra micantia cerno.'"—*Æn.*, ii, 734.

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* Taciti Agricola, c. 36.

More than once Virgil uses the word *æratus* as a general epithet for troops (see *Æn.*, vii, 703, and ix, 463); in the latter passage, the "bronze-armed battalions" are described as marching into battle,—

> "Turnus in arma viros, armis circumdatus ipse,
> Suscitat, æratasque acies in prælia cogit
> Quisque suas."

For the spear, we might quote Ovid's *hasta æratæ cuspidis* (*Metam.*, v, 9), or the line of Tibullus (lib. i, eleg. xi, l. 25),—

> "At novis ærata, Lares, depellite tela."

In fact, when the Roman thought of arms and accoutrements of war, *æs*, or bronze, appears to have been the metal which came uppermost to his mind.

I confess that I see little weight in the argument which has been drawn from the secondary use of the word *ferrum* as synonymous with *gladius* or *ensis*, a sword. It can only prove that there were swords made of iron among the Romans at the time when the word was thus used; probably the sword of iron was then considered the more fashionable—the more aristocratic. At all events, it would be becoming more distinctive. Iron was then the newest, and probably the most esteemed, material. We must not forget that, as we have just seen, on one hand the word *æs* was used for arms in general, not for a particular arm, and therefore, when iron was employed for swords, it would be more distinctive of the particular weapon; and that, on the other hand, from the time when money had begun to be coined among the Romans, *æs*, as the material of which it was made, was used in a secondary sense to signify money.

When Sir John Lubbock (p. 35) says that I "lay much stress on the fact that the bronze weapons have generally been found near Roman stations and Roman roads," he has applied to the weapons what I had said of a rather different object. During ages when travelling was neither quick nor safe, and people seldom took long journeys unnecessarily, they had to depend for many even of the necessaries of life upon men who carried them round for sale periodically, and a multitude of people gained their living as itinerant traders and manufacturers. It was a practice general throughout the middle ages, no doubt derived from the Romans, and the very utility of such dealers formed their protection against injury and interruption. We find abundant traces of this practice, curiously enough, in relation to the bronze swords and hatchets. These consist in discoveries of deposits, usually of an earthern vessel for melting bronze, of which there is sometimes a residuum at the bottom, of moulds for casting the implements, and generally of some broken swords or other bronze implements, no doubt intended to be melted down for metal, and of similar articles entire,

constituting stock in trade. Now my remark was, that these tools and stock of itinerant bronze manufacturers are almost always found near a Roman road, or in the neighbourhood of a Roman station, and that therefore we are justified in considering them as Roman subjects, who had travelled along the Roman roads, and rested at those spots for personal or local reasons which are unknown to us. Discoveries of such deposits have been very numerous in Britain, Gaul, Switzerland, and Germany. I am not aware if they have been found on the other confines of the empire. One of these, consisting of a quantity of bronze celts, both entire and broken, was found near the foot of the Wrekin in Shropshire, not far from the great Roman road, the Watlingstreet; another, among which there were fragments of a bronze sword, at Sittingbourne, on the Kentish portion of the Watlingstreet; a third, consisting of bronze punches, chisels, and other implements, with several pieces of unused metal, one of which was evidently the residuum of the melting-pot, at Attleborough in Norfolk, on the Roman road between Thetford and Norwich; a fourth, consisting of sixty bronze chisels, etc., with a portion of a bronze sword and a piece of bronze which again appeared to be the residue from melting, all contained in an earthern pot, at Weston in Yorkshire, on the road from Old Malton (where there are the remains of a Roman town) to York. It is not necessary to enumerate any further examples. Sir John Lubbock seeks to explain the position of these finds by supposing that the Roman roads were laid upon older British roads, but this is an objection to which I cannot listen until he brings me the slightest substantial evidence that such was the case. To me, these "finds" alone are sufficient to explain a fact which Sir John hardly, or only feebly, denies, the identity of forms, and not mere similarity, of all these bronze swords, in whatever part of Europe they are found. I cannot imagine that any one will believe that this identity of form is the result of chance, but they must have been derived from one general centre; and, when we consider the radius through which they are scattered, it was only the Roman empire that could have supplied such a centre. It is nonsense to suppose that, brought into Britain at a remote and obscure period by the Phœnicians, they could have spread in this manner. The whole mystery, then, is dispelled by the proceedings of these itinerant manufacturers, who must have been very numerous, and who went not only to the limits of the Roman province, but, no doubt, penetrated into the surrounding countries, and made weapons for their inhabitants. It was, for these, the easiest way of obtaining weapons. Swords were so rare, and so valued, among the Scandinavians and Teutons, that they believed them to have been forged by the gods;

and I beg to state that the arms which the gods forged were made of iron.* There are many reasons, into which I will not now enter, for believing that it was a subject of honour and glory, among the different branches of the Teutonic race, for a man to possess a sword; and here the "barbarian" had a chance of getting a sword to wear by his side at not so great an expense of wealth and trouble as if it had been made by the gods, and he no doubt profited largely by it. And then, the "barbarians," contrary to the Roman practice, buried their weapons with the dead, in consequence of which we find in their graves a sufficiency of those weapons to fill our museums, while we only pick up one now and then within the bounds of the Roman empire. Such is the case with Ireland, where, by the way, it has been somewhat too hastily asserted that the Roman arms never penetrated, seeing that we know little of the *history* of our islands under the Romans,—that Juvenal, speaking as of a fact generally known, asserts,—

"Arma quidem ultra
Litora Juvernæ promovimus",—

and that Roman antiquities are now found in Ireland. Such is the case with Scandinavia, and also of the other countries of Europe bordering upon the Roman provinces. It has been alleged that some of the ornamentation of the Scandinavian bronze-work is not Roman in its character, which is true—but why? It is not probable that an enterprising people like the Scandinavians would be satisfied to remain long dependant on the precarious supplies, as they must have been at such a distance, of wandering merchants, and they would soon learn to imitate what they had seen done by others. Roman ornamentation and design, in their hands, would soon undergo degradation until it took a character of its own, just as it did among the Anglo-Saxons, and among the Germans, and indeed among all the other non-Roman peoples into whose hands it fell. I have always held the belief that the mass of the Scandinavian ornamented bronze is nothing

* It may be remarked, on this subject, that even in the early Anglo-Saxon cemeteries in this island, which belong to the period immediately following the Romans, only one warrior here and there is found with a sword, while most of them were buried with spears. This would show that the sword was comparatively rare among the Anglo-Saxons, that only one individual here and there possessed one, or that they were considered too precious to be buried. Yet the common poetical phrase for being killed in battle was *sweordum aswefede*, "put to sleep with swords". In fact, the name of the more valuable of the weapons was employed to represent them all, just as among the Romans the name of the more valued metal for making a sword, *ferrum*, was used to signify all swords, and then used for weapons in general, because the sword was considered the most excellent. We still talk of putting the enemy "to the sword", omitting altogether the mention of muskets, rifles, lances, revolvers, etc., etc.

more than the development of Roman popular art under the influence of barbaric taste; and I think this will hardly be denied by any one who is familiarly acquainted with the forms and spirit of Roman art.

But it is time to conclude these remarks. I will only repeat the belief, on which I have always insisted, that in this part of the world the use of bronze did not precede that of iron, and I believe that I am fully supported in this view by the opinion of our great metallurgist, my friend Dr. Percy. At the time of Cæsar's invasion, as that great warrior and statesman declares deliberately, the only bronze known to the Britons was imported; of course from Gaul, and it could not have come in large quantities. The Britons could not have made bronze themselves, for I am satisfied, by my own researches among our ancient mines, that no copper was obtained in this island until it was found by the Romans. I am informed that, instead of being easy, the process of mining copper and tin, and preparing bronze, is very complicated and difficult; whereas the smelting of iron is extremely easy, and in some parts of o island, as in the forest of Dean, the iron ore presented itself on the surface, and in a form which could not fail to draw the attention of men who knew anything about metals. I confess that I look upon the modern myth of the colonisation of this island by the Phœnicians as unworthy the consideration of a serious antiquary. It is based upon speculations which have no historical foundation. In these new questions which are agitated by men of science, we must enter upon the study of the remote period of archæology of which we have no practical knowledge, with a very profound knowledge of the subsequent historic period; whereas this new school of antiquaries prefer contemplating altogether the doubtful period speculatively from the utterly unknown period which preceded it, to going back to it from the known period which followed. Indeed, I fear that far too much of prehistoric archæology, as it has been hitherto presented to us, rests only upon a want of knowledge of what is historic.

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## XVI.—*Language and Ethnology.* By the Rev. FREDERIC W. FARRAR, M.A., F.E.S.

[*Read May 9th,* 1865.]

IN a little work on the Origin of Language, published some years ago, I ventured to say that, whatever may be the *other* arguments for the unity of the human race, Philology, so far as it has yet proceeded, adds no contribution to the probability of such a belief. Expressing for the present no opinion upon those other arguments, or upon the general question, I will now endeavour to offer a few reasons for believing that Philology, considered alone, leads us to a distinct impression that *the diversity of languages was primordial,* and that the languages of the globe originated, like its plants and animals, at different geographical centres.

Now, first of all, it is a very significant fact, that the search for the *primitive* language has come to be regarded as a vagary, to be ranked with the attempts to discover the quadrature of the circle, or the *primum mobile.* Obviously, if all languages were derived from one, that one must have been the *primitive language,* and ought therefore, with our present philological knowledge to be easily discoverable. Accordingly whole volumes have been written on the subject, and, among many languages, Low Dutch, Swedish, Basque, Irish, and Polynesian, have all been claimants for the honour of having been the language of Paradise. Hebrew, however, has been the most persistent candidate, and nothing was easier than the proof of its pretensions, which indeed formed a sort of Procrustean bed out of which no linguistic heretic would escape with impunity. It was simply this: "All men descend from Adam and Eve; Adam and Eve spoke Hebrew; therefore Hebrew is the primitive language." Unhappily this little syllogism in biblical philology lost sight of the fact that the Hebrews were among the very few nations who *had* considered the problem of the diversity of tongues; and that in the passage which deals with the subject—a passage so peculiarly simple in its anthropomorphism, as to show that it was intended for allegorical and not for *literal history*—they attributed the fact to direct confusion, miraculously introduced into all human speech, Hebrew itself being made no exception. It would, however, be an undeserved condescension to stop before a scientific assembly to refute a theory which was given up so far back as the

times of Grotius,* of Alexander† Natalis, nay even of Dante‡ himself, and which for years did as much harm to Philology as a persistence in the Ptolemaic hypothesis would have done to astronomy, and which found its natural support in such vast repertories of monstrous etymology as (for instance) the once celebrated Hebrew lexicon of Parkhurst. Suffice it to say, that so far from being *the* primitive language, Hebrew, in anything like its present condition, could not ever have been *a* primitive language at all; that it does not even belong to the first stage or floor of language; that there are whole realms of languages to which it does not present the faintest analogy; and that "Hebrew, in its internal development, the *poorest* member of the *least* expensive class, is the *most* unpromising candidate which any one could set up for the honour of a universal progenitor."

Noting it then as an important and significant fact that the very search for a primitive language has come to be regarded as a chimera, let us glance at the present condition of human languages, and what bearing it has on the great questions of Ethnology. Many eminent Ethnologists have been jealous of the encroachment of Philology on their domain; but it is surely clear that Philology and Ethnology ought to be sister studies, and that though they work separately, their conclusions should be combined.

That there is one small family of languages, united by the closest affinities—Hebrew, Phœnician, Chaldee, Samaritan, Syriac, and Arabic—has always been recognised; and to this family the faulty, and conventional but not inconvenient, name of *Semitic* has been given. It was left to this century, and to those eminent scholars of whom England may well be proud, to discover and to demonstrate the unity of the great *Aryan* family of languages. The discovery of Sanskrit brought to our notice a language *coeval with if not anterior to the Hebrew, and utterly distinct from it,* a language which bound together into a glorious unity the dialects of Hindoostan and of Persia, with those European tongues of which some, like the Greek and Latin, shew the outgrowth of human intelligence in its richest and brightest bloom.

So far then we have two families of language, and two only, the Semitic, consisting of some half dozen Syro-Arabian dialects, and the Aryan, embracing in its wide and noble circle eight important historical families, Celtic, Teutonic, Lithuanian, Slavonic, Hellenic, Italic, Thracian, Armenian, and Iranian. So far we have only accounted for the languages of four peninsulas, India, Arabia, Asia Minor, and Europe.§ To this we may perhaps add a

* Grotius, Annott. in Gen., xi, 1.
† Hist. Eccl., i, 298. Michaeler, "De Orig. Ling.", p. 393, sqq., 280, sqq.
‡ Paradiso, cant. xxvi, "La lingua ch'io parlai fu *tutta spenta*," etc.
§ Max Müller, in Bunsen's "Outlines", ii, 6-9.

*third* northern group, whose affinities have been established by the labours of Klaproth, Schott, Castren, von de Gabelentz, and others, and which consists of five "quite respectable" families, viz., Tungusic, Mongolian, Turkic, Finnic, and Samoiedic. To this group has been assigned what we cannot but regard as the unfortunate name *Turanian.* This name was, I believe, first used by M. Omalius d'Halloy, and by him applied to the *actual* Tartars of Touran; but, with a modesty rare in the first proposer of a word, he has himself abandoned it, because of the wide extension of meaning it has received from other hands, and substituted for it (in his last edition of his *Elémens d'Ethnographie*) the name Alatyan, a name which the Tartars of Siberia apply to themselves.*

We know then of *three* linguistic families, Semitic, Aryan, and, to avoid the unlucky and indistinct term Turanian, let us say Alatyan. How small a distance then have we gone in classifying or separating into groups the some thousand living languages of the world—to say nothing of the innumerable languages that are dead—from that vast number displaced by the Romans in their conquests, to those of North America, of which not long ago a few aged parrots were the only surviving speakers!

What then are we to say respecting the languages of the Caucasus, Basque, Malay, Polynesian, North and South American, Chinese, African, Australian? They are all clearly non-Semitic, and clearly non-Aryan; what then must be done? Only the name Turanian remains; why not extend it inordinately, open it wide, as Professor Pott† says, "as though it were a great convenient bag," and throw all remaining languages into it, putting Chinese, apologetically, at the bottom, as an inorganic structure, underlying all the rest. This is practically what has been done by Bunsen; and although Professor Max Müller‡ is much more cautious in his language, and only speaks of Turanian as comprising "all languages *spoken in Asia or Europe,* not included under the Aryan or Semitic, with the exception *perhaps* of Chinese and its dialects," yet he takes care to remind us that "the extension of the Turanian family to Africa and America has been hinted at by several scholars," and there runs through his writings a kind of tacit assumption that they are Turanian in character; and even Chinese is vaguely connected with the same so-called family, although it is supposed to have been arrested at a "radical" stage.§

* Omal. d'Halloy, "Elém. d'Ethnographie", p. 52.

† Pott, "M. Müller und die Kennzeichen der Sprachwissenschaft." Deutsch-Morgenland. Ztschr., ix, 405, sqq.

‡ Survey of Languages, p. 86.

§ See Survey of Languages, pp. 10-23, 83-124; Bunsen, "Outlines", i, 336, 484, ii, 20; "Lectures", i, 317.

Now if it were in any degree established that all non-Aryan and non-Semitic languages fall into one Turanian group, it would throw the great discovery of the Aryan unity completely into the shade. But I believe that the name Turanian, so applied, is only a dangerous chimera, and that if, after admitting the unity of the Semitic, Aryan, and Alatyan families, a third name is wanting *to conceal our ignorance* of any true principle of unity pervading, or supposed to pervade, the remaining languages of the world, we had much better adhere to the purely negative name Allophylian, suggested by Dr. Pritchard, a name which asserts nothing and assumes nothing, and which is therefore well-suited to express the purely negative fact that these languages are not known to be otherwise than sporadic in their character.

A deep note of discontent has risen from many quarters at this unlimited extension of a term originally defective. Professor Pott,* perhaps the first of all living philologists, says that his whole scientific conscience revolts against the recognition of any real relationship between the members of this so-called family. Renan,† the greatest philologist of France, looks upon it as intended to represent a mere ingenious hypothesis, rather than a demonstrated proposition. Maury, and Broca,‡ and, in America, Drs. Nott and Gliddon,§ have all protested against it. "Touran," says Maury,‖ "possesses no historical sense but that of non-Persian ethnologically, none but that of Turkestan geographically. It were as reasonable to divide Asiatic and European humanity into Semitic, British, and non-British, as to classify all these multiform nations into Semitic, Aryan, and Turanian, when this last adjective suits, strictly speaking, no human group of families but the Turkish;" and he adds that to class under one omnific name the transplanted and now prodigiously intermixed descendants of various indigenous races, merely because agglutination happens to be their linguistic attribute, is an aberration from common sense, which naturally arose from Bunsen's unguarded language, but which Max Müller himself can never have intended. Yet Max Müller, creating for himself a modern mythos, talks of the wild descendants of Tur, and says that "through all periods of history, down to the present day, by far the largest share of the earth belongs to Tur." But who, in the name of all that is wonderful, is Tur? Who is this ancestor of Turks and Samoyedes, and perhaps even of Polynesians, Americans, and Malays? Brutus, ancestor of the Britons, Francus, grandson of Hector, and ancestor of the French,

* Pott, *ubi supra*, p. 417.

† Hist. des Langues Sémitiques, p. 466.

‡ La Linguistique et l'Anthropologie (Bulletins de la Soc. d'Anthrop., Avril 1862, pp. 272, seqq.).

§ Indigenous Races, p. 568. ‖ I have abridged the passage.

are nothing to him; he is an ethnographic fable developed with astounding rapidity out of a vague expression. "Behold," says M. Broca, "a venerable personage, who was forgotten by Moses, and who now begins to seat himself by the sons of Noah! Who is this Tur, who has found no place in the tenth chapter of Genesis? No doubt another Noah, perhaps another Adam, whom we are soon going to impose on the Chinese! Ought anthropologists to accord their hospitality to this fictitious personage?"

Professor Müller himself admits that these languages "do not descend from one common parent," and that "much still remains to be done before the mutual relations of all these branches can be considered as finally settled;" that the characteristic marks of union between them "are as yet very vague and general," and that "*the very absence of that close family likeness,* which holds the Aryan and Semitic languages together, *seems to form a distinguishing mark of these nomadic dialects.*" To this last sentence I call special attention, as emphatically proving how purely negative is the tie which binds together these languages in the "Turanian sandrope." Here are a number of languages which we may call, A, Semitic, B, Aryan, C, Alatyan, D, E, ..... X, Y, Z, not Aryan, and not Semitic; these languages are not A, and not B, and they have *no* close family likeness, which is *one* of the distinguishing marks, that they are all of them C.

But, it will be asked, has no attempt been made to *prove* a connexion between the members of the so-called Turanian family? Undoubtedly there has. It has been pointed out that one principle—agglutination—is common to them all.

Now, be it observed that agglutination "consists in the mere juxtaposition of material and formal elements;" and, as Professor Müller observes, it may well at first sight "seem so simple and purely mechanical as hardly to offer a distinctive attribute on which to establish a family of languages." Now it must indeed be a wide term which is supposed by many scholars to apply equally well to the voluminous, holophrastic, polysynthetic languages of America, in which a long sentence is treated as a single word "in a violent state of fusion and apocope;" and to the Turkish, in which, however long the compound, the root always remains intact. It must indeed be a wide term which embraces a language like the Athabascan language—*Tlatskanai,* which has interminable bizarre words like *χotschot-ltscit-ltsha* and *tlatlatlal-pistitcutli* for such common things as "tongue" and "fagot," and also embraces Chinese, in which even a common plural like "trees" must be expressed by "tree, tree," and "us" by two monosyllables, "me, another." "Chinese," says Duponceau, "is *the very opposite* of the American languages; it is the *poorest* in words and grammatical forms, while these languages are the *richest* in

both. These two kinds of languages stand, so far as their organisation is concerned, in direct contrast to one another—they form the two ends of a scale of human idiom." Yet we are to regard them as both, "perhaps," Turanian; both, though in different stages,* agglutinative; and Japanese, with its specific numerals for men, for animals, for birds, for ships, for long objects, for flat objects, for hats, umbrellas, and parasols, for inanimate objects with four legs, for sealed letters, for patent letters,† etc., extending up to 100,000, has a family connexion with Australian and African languages, some of which have only two ordinals, and cannot get beyond three! Surely, then, such a term as this can only describe some element common to many human languages, *merely in virtue of their being human languages,* and can hardly serve to establish any real, much less any genealogical, connection between them. Even when taken in connection with the few "illusory homonyms" which have been urged, as yet only in the slightest and sketchiest manner, to point out any etymological identity of roots between one or two members of this so-called family, they no more prove a common origin than the general resemblance of structure in the mammalia proves that a horse, a whale, a cow, a lion, and a man, all spring from one common parentage.‡

But now, even if we admit most fully, instead of denying absolutely, that there is any real principle of unity between the non-Semitic and non-Aryan languages, will anybody, not shackled by some deeply-seated foregone conclusion, assert that anything even *plausible* has been offered in favour of even a possible common descent for Hebrew and Sanskrit, for Sanskrit and Chinese, for Chinese and Ojibbeway? If a mere general grammatical resemblance, coupled with a few coincidences of sound, the first due to the universal laws of thought, and the second partly to onomatopœia, and partly to the structure of the organs of speech, be insufficient to establish any connexion between the widely-spread Allophylian languages, how shall we establish any between those different families whose grammatical systems and radical sounds are fundamentally and irreconcilably distinct?—whose dissimilarity, both in ideas, in structure, and in roots, is so obvious and profound?

For instance, if we compare any of the so-called Turanian languages with Semitic or Aryan, we are at once struck with the shifting, evanescent, unstable character of the one, and the inextinguishable vitality of the others. Such curious customs as the *tepi* of New Zealand, the *Ukuhlonipa*§ of the Kafirs, the *cuzecat*‖

* M. Müller, "Lectures", i, 316.

† Crawfurd on Numerals, "Ethno. Trans., 1863."

‡ Pott, l. c.

§ Appleyard's Kafir Grammar, p. 70.

‖ Dr. A. Smith, "Report of African Exploring Expedition", Cape Town, 1836.

of the African tribes, the forms of gibberish like those called *Shakotshe* and *Farshipse** among the Circassians, the love of slang pronunciations and bizarre words among the South American Indians,† and other similar facts, quite prepare us to hear that seven or eight different languages are often spoken within a distance of 250 miles on the banks of the same river in Brazil, or that the version of the Bible in a savage language becomes useless and unintelligible in half a century, or that no less than nine different dialects were spoken among the last few dozen Tasmanians.‡ Now contrast this with the fact, that so tenacious of life is an Aryan language, that at this day an European child might in his own language frame many a simple sentence which would be intelligible to an Aryan shepherd of six millenniums back, or that a modern Greek boy should be able to speak so as to be perfectly understood by the shade of Homer. To this day the Aryan or Indo-European languages have the great majority of their roots in common, and their system of declensions, of conjugations, and of composition, is after thousands of years identical, so that both by etymology and by grammar their relationship is indisputably proved. Their numerical system, for instance, is everywhere the same. "In the long peregrination of tribes," says M. Benloew,§ "from the foot of the Himalayas to the borders of the Mississippi, from 2,000 years before our era down to the present day, not one of these names has perished in any idiom." Though they belong to a truly primordial antiquity, when the ancestors of Celts, and Saxons, and Russians, and Norwegians, and Hindoos were still living under the roofs of the same huts, and though their origin is only known to a few scholars, they are all preserved as though they were fossil—preserved in the minutest particulars—even in the singular mutilation‖ of the tens, even in the curious aphoeresis of the hundreds—altered indeed, but plainly recognisable—"the same in Sanskrit and in English, among the Ossetes and among the Germans, among the Gipseys and among the Sclaves." Realise this single fact, and then ask whether languages so permanent, so undying, can be of a common parentage with those which are, as Professor Max Müller admits, shifting as the desert sands, which seem to have no single principle of stability or life, and in which, as for instance in the language of Tahiti, five out of the ten numerals can be displaced and lost in less than a hundred years!

Once again—contrast Sanskrit with Hebrew, as has been done

* Klaproth, "Voyage au Mont Caucase", i, 381.
† Bates, "The Naturalist on the Amazons", i, 329.
‡ Capt. Erskine, "Cruise in the West Pacific".
§ Benloew, "L'Origine des Noms de Nombre", p. 84.
‖ Centum=decentum. Sanskrit, çata=daçata. *Id.*, p. 40.

by M. Chavée, in a very able and valuable pamphlet,* and what do we find? The radical difference, for instance, of their verbal system is summed up by him in a few words. The primitive Aryan verb "never" has a metaphysical or metaphorical meaning, but expresses always a material idea, an observable fact. It is originally monosyllabic, and consists generally of a consonant, followed by a vowel, *i.e.*, it is an open syllable like *Dà*, "to give," or *Stà*, "to establish." On the other hand, the elementary Semitic verb, when not triliteral, is always composed of *two* consonants of different organs, of which one very frequently doubles itself, *i.e.*, it is a *close* syllable. Again, whereas in the Aryan vocabulary nine-tenths of the words are *compound words or their derivatives*, in Semitic languages, on the other hand, by the admission of all orientalists, there *is not such a thing as a compound verb at all.* Is it not, then, evident that the Semitic and Aryan systems are different worlds of conception, different worlds of expression? Their simple irreducible words, their syllabic constitution, have nothing in common, and the laws which preside over their earliest combinations are also absolutely different. What, then, is the only possible inference, if it be not that these languages are two vast spontaneous creations, the instinctive product of two different intellectual and artistic organisations?

In conclusion, let us look at Chinese. Between Chinese and the Semitic and Aryan systems there is, not a mere rift, but a broad, unfathomable, and never-bridged abyss. "Postremo Sinenses," says Leibnitz,† in his letter to Chamberlayne, "*tamquam alterius orbis homines*, et linguam habent et scripturam *toto cœlo a nostris diversas*," or, as M. Renan expresses it, Chinese differs from other languages as widely as though it belonged to the inhabitants *of another planet.* It has not now, and it has not had for at least four thousand years, any principle of true grammar at all. It cannot even pronounce compound consonants by one emission of the voice, so that Christus in Chinese becomes *Ki-li-su-tu-su*, and Brahmah becomes *Fan-lan-mo;* and among all its thirty-six consonants, it does not possess either *b*, or *d*, or *r*. It is absolutely flexionless; it shews none, or next to none, of the otherwise invariable linguistic process from synthesis to analysis; it is so curiously and intensely analytic, that it cannot even express the conception of *virtue*, except by such a mixture of words as *Tsun hyan tsye i*,—*i. e.*, fidelity, reverence, temperance, uprightness; or *pleasure*, except by *phyan tu tshi tshwen*,—*i. e.*, luxury, play, food, clothes! And yet we are to suppose that this language was identical in origin with the African, the Polynesian, the holophrastic American, the nearly unknown tongues of Dokos and

* Les Langues et les Races. Paris, 1862.

† Opp., vi, 2.

Andamaners, as well as with Hebrew, Greek, and French. If this be so—even in the astonishingly unorthodox term of years which the advocates of this theory are forced to demand to render it even conceivable—then Mr. Darwin's theory is nothing to it. I agree with Professor Pott,* that to suppose a development from Chinese to Greek is to suppose a miracle far more astounding than the growth of a silk worm into an elephant, or the sublimation of an infusorium into a man. The grammar of a language is its unalterable individuality; it may be cultivated and polished, but it can no more alter its organisation than "a gardener can change an onion into a potatoe." A people under stress of conquest may exchange its own language for another; but to believe, with the advocates of a primitive language, that any nation could or would of its own accord *alter its own mother-speech into one radically different and etymologically new,* and retaining no traces of its origin, is to believe† a metamorphosis more strange than any in Ovid. A nation could not do it if it would, and would not if it could. The scriptural tradition which referred the diversity of language to a direct miracle shews a recognition of the fact. Unless we theorise in the teeth of observation, we are led to conclude that every language at its creation received one ineffaceable stamp. The monosyllabic, agglutinating, and inflectional languages *were* monosyllabic, agglutinating, and inflectional at a period as far back as the gaze of man can reach, even at the very dawn of human history and human tradition. These facts will speak for themselves. If the facts are incontrovertible, the conclusion is obvious.

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* Ubi supra, p. 414.

† Du Ponceau, "Lenni Lenape Grammar", Eng. trans., p. 187.

## XVII.—*Description of two Andamanese Skulls.* By GEORGE BUSK, F.R.S., Vice-Pres. Eth. Soc.

[*Read June 13th*, 1865.]

THE two crania which form the subject of this communication belong to the collection of the Middlesex Hospital, to which they were presented by Dr. Chas. Smith, a surgeon in H.M. Indian army.

They constitute a very interesting and important addition to our knowledge of the cranial conformation of the curious people to which they belong, and which has hitherto been in a great measure confined to the description of a cranium possessed by Dr. Mouatt, given on a former occasion in this Society by Prof. Owen.

The skulls are stated to be those of a male and female, and the characters they respectively present are, so far as they go, confirmatory of this representation. It should be remarked, however, that the lighter or more delicately formed of the two has belonged to a much younger individual than the other, and consequently that its different character may, in part at any rate, be assigned to its age. In it the sutures are not only open but quite loose, as they would ordinarily be in a skull of between sixteen and nineteen; but at the same time the third molar has been fully cut, though perhaps only recently, as the second molar is but very little worn.

In general character the crania agree very closely, though differing in some respects, as will afterwards be pointed out. Their dimensions, as will be seen from the subjoined table, are pretty nearly equal, and very close to those of the skull described by Professor Owen, and which, for convenience sake, I shall term Dr. Mouatt's cranium, whilst the present two will be named Dr. Smith's, No. 1 and No. 2; the former being that of the male, and the other of the female, or younger individual. The proportionate breadths of these three crania are:—

| | | |
|---|---|---|
| Dr. Mouatt's | about | ·830 |
| Dr. Smith's, No. 1 | | ·776 |
| „ No. 2 | | ·828 |

from which two would be regarded, in common language, as brachy-, and the third as dolichocephalic; but in reality it appears to be more correct to regard them all as brachycephalic, for the reason that the comparative narrowness of No. 1 is probably due, as I consider, to an early closure of the coronal and sagittal sutures, of which the former is completely obliterated throughout its whole length, and the latter from about its anterior two-thirds, whilst the remainder is pretty nearly in the same condition. At

the same time the lambdoidal, squamous, and fronto-sphenoidal sutures are all open; and there seems, therefore, to be some reason for the belief that the first-named sutures have in this case been prematurely closed.

The remarkably open condition of the sutures in the second of Dr. Smith's crania, which may be assumed to be that of a person probably nineteen or twenty years of age, may justify the assumption that in the Andamanese there is not normally the same tendency to an early closure of the sutures, as is manifested so frequently in the African negro.

Both crania are prognathous, though that of the younger individual is considerably more so than the other, and they are both strongly phenozygous. In both these characters they resemble Dr. Mouatt's cranium.

No. 1 cranium is thick and heavy, and the muscular impressions are all unusually strongly marked. In the interior, the petrous bone may be seen to be greatly developed, with the superior angle remarkably elevated and acute.

1. *Norma lateralis.*—In this view of the cranium, the outline of the forehead, though low, is tolerably rounded; the vertical region presents a slight depression, and the occipital is vertical, though not flattened, The fronto-sphenoidal and squamosal sutures, as above stated, are open, but from the complete closure of the coronal, it cannot be determined whether the alisphenoid and parietal bones met or not; they seem to have just touched by an acute angle. The parieto- and occipito-mastoid sutures are extremely complex, and the mastoid process enormously developed.

2. *Norma occipitalis.*—In this view what is chiefly to be remarked is the almost complete closure of the posterior portion of the sagittal, and the open condition, except just in the middle, of the lambdoidal sutures. The latter is complex, and contains several small Wormian bones. The occipital region is flattened on the sides, and the greatest width of the cranium is very nearly at the parietal eminences. The occipital ridges and spine are but slightly developed.

3. *Norma frontalis.*—The forehead is contracted. The frontal sinuses distinct, long, and narrow, and the supraorbital border, though not thickened, yet prominent. The orbits large, quadrangular. The fronto-nasal suture low down, and there is no hollow at that part. The nasals broad, but short, moderately arched below, and flat in the middle. The nasal processes of maxillaries broad and convex, so that the whole of the nasal promontory is thick and clumsy. The opening of the nares broad-oval. A well-marked nasal spine.

4. *Norma verticalis.*—In this view the prognathous, and more especially the phenozygous, formation of the cranium is at once

evident. The complete closure of the sagittal and coronal sutures has been before adverted to, as well as the sort of constriction which is evident in the vertical or mid region. The temporal lines at this point approach to within 2″.8 of each other. The general outline of the skull in this view is a truncated oval.

5. *Norma basalis.*—The remaining teeth are the three m. on either side—the right canine and 1 pm., and the 1 pm. on the left side; and it is to be remembered that on both sides the canine is placed directly external to the 1 pm. All these teeth are perfectly sound; they are all worn to a uniform flat surface. The alveolar border is very deep, and forms a rather narrow arch, somewhat pointed in front—a form doubtless owing to the abnormal position of the canine and premolar teeth, to which also may be attributed the diminished prognathism exhibited in this cranium. The *foramen magnum* is rhomboidal in form, and large. The condyloid processes somewhat immersed, and irregular in shape. The styloid processes enormous, hollow, and each is furnished with a large nutrient foramen behind, about the middle of its length. The zygomata thick and expanded.

No. 2.—The smaller, or female cranium, is thin and light, and the sutures, as above said, are all open and loose. In the interior, the petrous bone is well developed and the superior angle sharp and prominent.

1. *Norma lateralis.*—In the side view the outline exhibits a tolerably uniform arch, the forehead being somewhat depressed, and the occiput slightly produced. The parietal and alisphenoids join for about a quarter of an inch. The parieto- and occipito-mastoid sutures are very complex; the mastoid processes very short; the parietal eminence very prominent.

2. *Norma occipitalis.*—A considerable wide depression exists along the course of the posterior half of the sagittal suture. The lambdoidal suture is very complex, and contains numerous ossa *triquetra.* Superior occipital ridge well marked, but there is no occipital spine. Occipital region much compressed on the sides; the widest part of the cranium being in the middle of the parietals.

3. *Norma frontalis.*—Forehead narrow and depressed. Frontal sinuses very indistinctly marked. Supra-orbital border thin, but slightly prominent. Orbits large, quadrangular. Fronto-nasal suture low down. Nasal bones very small, forming a low ridge in the middle. No depression at fronto-nasal suture. Nasal opening oval, narrow above, with the apex truncated. A very distinct nasal spine.

4. *Norma verticalis.*—Prognathous and phenozygous condition very distinct. Outline sub-triangular, with a broad, shallow depression behind.

5. *Norma basalis.*—The remaining teeth are the 1 and 2 m. on either side—the latter slightly and the other considerably

worn. The sockets of the other teeth very regular; the alveolar border forming a uniform rounded arch, not very deep. The palato-maxillary suture is opposite 2 m. The foramen magnum large, rhomboidal; the condyles very prominent, long and narrow. Although the mastoid processes are short, the digastric fossa is remarkably broad and deep.

The various dimensions of these crania, together with those of Dr. Mouatt's cranium, are given in the following table, to which are also appended the corresponding mean dimensions of eight lower-caste Hindoos, male and female; and of thirteen, so termed, Veddah skulls from Ceylon. Those two classes of people have been selected partly on account of their geographical relations to the Andamanese, and partly because, in the small size of the cranium, they appear to approach perhaps the nearest of all mankind to the Andamanese. But, except in size, very considerable differences, in other respects, will be found to exist between them:

| | Andaman. Midd. Hosp. No. 1, Male. | Andaman. Midd. Hosp. No. 2, Female. | Andaman. Dr. Mouatt's. | Mean. | Mean of 8 Hindoos or Lascars. | Mean of 13 Veddahs. |
|---|---|---|---|---|---|---|
| Length - - - - | 6·7 | 6·3 | 6·3 | 6·43 | 6·62 | 6·74 |
| Breadth - - - - | 5·2 | 5·4 | 5·25 | 5·28 | 5·30 | 4·89 |
| Height - - - - | 5·3 | 5·4 | 5·15 | 5·28 | 5·52 | 5·46 |
| Least frontal diameter - - | 3·6 | 3·5 | 3·4 | 3·5 | 3·6 | 3·56 |
| Greatest frontal diameter - | 4·3 | 4·2 | 4·3 | 4·26 | 4·45 | 4·27 |
| Parietal breadth - - - | 5·0 | 5·2 | 5·1 | 5·1 | 5·07 | 4·70 |
| Occipital „ - - - | 4·0 | 4·0 | 3·9 | 4·0 | 4·08 | 4·0 |
| Zygomatic „ - - - | 5·3 | 4·75 | 4·9 | 5·0 | 4·78 | 4·68 |
| Frontal radius - - - | 4·55 | 4·1 | 4·2 | 4·28 | 4·46 | 4·44 |
| Vertical „ - - - | 4·5 | 4·45 | 4·5 | 4·5 | 4·6 | 4·54 |
| Parietal „ - - - | 4·7 | 4·55 | 4·65 | 4·63 | 4·7 | 4·58 |
| Occipital „ - - - | 3·9 | 3·8 | 3·9 | 3·9 | 3·91 | 3·9 |
| Maxillary „ - - - | 4·1 | 3·8 | 3·75 | 3·9 | 3·67 | 3·61 |
| Fronto-nasal „ - - - | 3·8 | 3·35 | 3·35 | 3·5 | 3·5 | 3·5 |
| Circumference - - - | 19·1 | 18·5 | 18·4 | 18·7 | 19·1 | 18·5 |
| Longitudinal arc - - - | 13·6 | 13·2 | 13·7 | 13·5 | 13·9 | 14·1 |
| Frontal longitudinal arc - | 4·6 | 4·6 | 4·5 | 4·56 | 4·81 | 4·8 |
| Parietal ditto - - - | 4·9 | 4·7 | 4·6 | 4·73 | 4·86 | 4·76 |
| Occipital ditto - - - | 4·1 | 3·9 | 4·6 | 4·2 | 4·22 | 4·47 |
| Frontal transverse arc - - - | 11·6 | 10·8 | 10·8 | 11·1 | 11·3 | 11·2 |
| Vertical „ „ - - | 12·0 | 11·9 | 12·1 | 12·0 | 12·26 | 11·9 |
| Parietal „ „ - - | 12·9 | 13·1 | 12·7 | 12·9 | 12·85 | 12·3 |
| Occipital „ „ - - | 10·6 | 11·0 | 10·4 | 10·6 | 10·89 | 10·6 |
| Proportionate breadth - - | ·776 | ·828 | ·833 | ·812 | ·795 | ·727 |
| Proportionate height - - | ·791 | ·857 | ·817 | ·821 | ·827 | ·809 |
| Proportionate occipital radius | ·582 | ·603 | ·619 | ·601 | ·585 | ·573 |
| Proportionate maxillary radius | ·611 | ·603 | ·595 | ·603 | ·560 | ·553 |
| Propor. fronto-nasal radius - | ·507 | ·531 | ·531 | ·543 | ·524 | ·520 |
| Difference between fronto-nasal and maxillary radii - | 0·30 | 0·45 | 0·40 | 0·38 | 0·18 | 0·22 |

The following are a few of the considerations to which we may be led by the study of the figures given in the above table.

They show, in the first place, that whilst the Andamanese are decidedly brachycephalic (.821), and the so-termed Hindoos moderately so (.775), the Veddahs are very decidedly dolichocephalic, (.727). Again, we find that in height the cranium of the Veddahs stands by far the lowest (.809), the Andamanese next (.821), and the Hindoos considerably higher (.827). But in all, the height considerably exceeds the breadth, in which respect the crania of all three races differ from those of the Tasmanian and of some of the Australian forms of skull, whilst they correspond with those of the occidental Negro.

The different degrees of prognathism exhibited in these three sets of crania are shown in the last column, which gives the difference in length between the maxillary and the fronto-nasal radii; this difference amounting to only 0".18 in the Hindoos, to 0".22 in the Veddahs, and to as much as 0".38 in the Andamanese, which are thus proved to be as prognathous as any race with which I am acquainted, or nearly so. And this character, taken in conjunction with the considerable height of the zygoma, shows very clearly the great proportionate development of the more animal part of the face, and generally the vigorous muscular development of the body in these little Negritoes.

The small size of the skull in all three will be at once perceived from the dimensions given; but some general idea of the comparative size, taken as a whole, in the three races may be obtained by adding together the length, breadth, height, and circumference in each set of crania respectively, when we have the following results:—

| | |
|---|---|
| Hindoos - - - - | 36·54 |
| Andamanese - - - - | 35·69 |
| Veddahs - - - - | 35·59 |

which show that the Veddahs have absolutely the smallest heads of the three. With respect to the three regions of the cranium, the numbers representing the frontal, parietal, and occipital regions, in the three sets of crania respectively, run thus:—

| | Frontal Region. | Parietal Region. | Occipital Region. |
|---|---|---|---|
| Hindoo - - - | 45·48 ... | 27·48 ... | 23·10 |
| Andamanese - - | 44·20 ... | 27·36 ... | 22·70 |
| Veddah - - - | 44·71 ... | 26·34 ... | 22·97 |

from which it would appear that the Andamanese, as compared with the other crania, is chiefly deficient in the frontal region, whilst he is considerably better furnished than the Veddah in the parietal, and very nearly his equal in the occipital, regions.

The following account of the skulls here described has been

furnished to my friend Mr. Campbell de Morgan by Dr. Charles Smith, whose notices also on the habits, etc., of the Andamanese will be read with much interest :—

"The skulls that I sent you are those of a male and female, procured from Port Blair. From the position of the island in the Bay of Bengal, one would expect to find a variety of one of the Asiatic tribes in the aboriginal inhabitants; and it is remarkable that they have no affinity with any of the tribes of Burmah nor of Continental India, and are, without doubt, a small branch of the Negro (Negrito) race. But how or when were they planted in these far islands?

"The height of many that I measured averaged from 4 ft. 10 in. to a trifle under 5 feet. The females were all under 4 ft. 10 in. The African features well developed; lips thick; hair short and woolly; heels slightly projecting behind. Skin black and shining, as if polished with lampblack. Eyes bright and clear, with a well-developed forehead; in spite of which, they have proved most difficult to instruct. Children catch up words readily and repeat them, but they seem incapable of connecting words with corresponding ideas. In the proportion of about one in three of the males, I found the first bicuspid tooth doubled, as in one of the specimens I sent you.* The crowns of the molars are worn flat, as if from the use of a diet of roots or hard substances; but when these people were first discovered, and brought into intercourse with Europeans, and for long after, they would not eat rice, fruit, or vegetables. Animal food, as fish or pork, which they partially washed before eating, was the only article of food they could be induced to touch. Wild pigs abound in the islands. I observed that all used their teeth freely, as apparently their only cutting instruments. They have no idea of the use of clothing. Though forced to put on a garment when any of them visit the settlement, it is gladly dispensed with and left at the house when they swim back to the main island. Women wear the smallest piece of green leaf between the thighs, secured by the tendril of a creeper or a strip of bark. I have seen a woman take off her clothing, and sit as unconcernedly as if she were an animal: evidently she knew not that she was naked.

"They are all frightfully passionate and revengeful. Four men were murdered by a tribe about three months before I visited the islands, simply on their being refused more food, having already received as much as they could eat. They have been accused of cannibalism, but on no sufficient authority; in fact, very little is

* In this case, as described above, the 1 pm. is not doubled, but is placed on the inside of the canine. That this arrangement should be so common among the Andamanese is certainly surprising.

known of their social habits. Dr. Mouatt's book was written on very imperfect data, and even since then, though our intercourse with the natives has assumed a more regular form, it is very limited, owing to our ignorance of the language. A Mahometan convict escaped, and lived for a year among them, having, as he said, married two wives. He added but little to our previous knowledge, or what he related was not by any means to be trusted.

"The islands are highly fertile, and clothed with a superb growth of forest timber. Two splendid harbours, Port Blair and Port Cornwallis, are perfectly sheltered from the south-west monsoon. The climate is cooler, and as equable and favourable to vegetation as that of Singapore. Nutmegs, which are failing at Singapore from the alteration of climate consequent upon too extensive and promiscuous jungle clearances, will succeed on the Andamans. I saw some young trees flourishing.

"If the British Government would establish a reformatory for convicts on these islands, they would soon become valuable, and cost nothing. When I inspected the jails and establishments in November last, 509 native convicts entirely supported themselves from the produce of their gardens and farms, and were thus no charge to Government."

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# XVIII.—*On the Physical and Mental Characteristics of the Negro.* By JOHN CRAWFURD, Esq., F.R.S.

## I.—THE AFRICAN OR OCCIDENTAL NEGRO.

[*Read April* 11*th*, 1865.]

I PROPOSE in this paper to give a brief account of the physical characteristics of the Negro races of Africa, and to endeavour to estimate their intellectual capacity, compared with that of other races of man.

By the term Negro—in so far, at least, as it is applicable to Africa—we understand a human being with the hair of the head and other parts of the body always black, and more or less of the texture of wool, with a black skin of various shades; dark eyes, a flat face, depressed nose, jutting jaws, thick lips and large mouth, with oblique incisor teeth. To this is to be added a peculiar odour of the skin, offensive to and unknown in the other races of man. The form of the skull, in so far as it is the brain-case, cannot, I think, be insisted on as a criterion of the African Negro, for I do not believe it has any characters by which it can certainly be distinguished from the skulls of nearly-allied races, such as those of the Abyssinians and of the Oriental Negros. The true African Negro is of the average stature of Europeans, and perhaps even of their average physical strength; and in this last quality is the only race of man that is so.

The word Negro is obviously a corruption of the Latin adjective for "black," and in its present sense was probably first employed by the Portuguese to designate the race of man, to them new, which they found on the western coast of Africa in the prosecution of their discoveries in the fifteenth century. To the people of Europe, both of antiquity and the middle ages, the Negro was as little known as the Hindu or the Chinese; but he was immemorially known to the Egyptians, the Jews, the Arabs, and the Persians, most probably always as a slave.

The continent of Africa, reckoning on its western side from the southern limits of the Great Desert to the tropic of Capricorn, and on the eastern from the equator to the 33rd degree of south latitude, is inhabited by the Negro race. To the south of these limits, we exclude the squab-yellow Hottentots, although with woolly hair; and to the north, the Abyssinians, the Samauli, and the Galla, who have crisped long hair and elevated features, albeit of dusky or black complexions.

Although all African Negroes partake of the general character I have now ascribed to them, there is still much diversity, consisting chiefly in the greater or less predominance of the typical features above enumerated. Thus the protuberant jaws, the flat nose, the thick lips, and black colour, appear in their most exaggerated form in the Negro of the Guinea coast, but in a greatly mitigated one in the Kaffirs of the eastern.

Travellers who have seen both the Negroes of the eastern and the western coast, as well as those of the interior, are in accord respecting the general characters of the race, and probably the varieties are not greater than those which exist in the races of Europe or of India, or in the red man of America.

Quitting the continent of Africa, the first considerable deviation from the general Negro characters is found in Madagascar, an island about three times the extent of Britain. The native of Madagascar, still a Negro, is slenderer in person than the continental Negro. He has usually woolly hair, but not unfrequently hair that is long and crisp. The people of Madagascar are divided into two classes—the ordinary Malagasi, and the Ova or Hova, that which has immemorially governed. The latter are the fairest, or rather the least black, and it is with them that the crisp long hair is chiefly to be seen. This division has given rise to the hypothesis that the Ovas are partly derived from a foreign race—a pedigree which would seem to receive some countenance from the well-attested fact, that the language of Madagascar contains a few useful but not indispensable words of a Malayan language. But the same superiority in the governing class has been equally noticed in brown races of the islands of the Pacific. The fact seems to me of easy explanation, without having recourse to the hypothesis of an admixture of foreign blood, not likely to have taken place to the extent of changing the physical character of a long line of descendants. The chiefs, in the exercise of a despotic power, instead of breeding in-and-in, which would soon reduce the aristocracy to the level of the common people, if not below it, select the handsomest women for the continuance of their order. In Madagascar the fairer and longer-haired are preferred to the black-complexioned and woolly-haired, and thus the distinction between the ruling and the governed class is easily accounted for.

After this brief account of the distribution and of the physical form of the African Negro, I shall endeavour to sketch his intellectual character, by comparing it with that of the other races of man. As we know nothing to the contrary, we must assume that all the races of man are of equal antiquity, or that, in so far as mere time is concerned, every race has had the same length of time for making advancement in civilisation. The great diversity of social conditions in which we now find them must therefore de-

pend either on quality of race or on difference of opportunity. The Negroes of Africa are unquestionably the most advanced of all the woolly-headed races. They have been, immemorially, in almost exclusive possession of the greater part of a vast continent, most of it within the tropics, but a considerable part also in a temperate climate. The region they inhabit is certainly not, compared to some other parts of the globe, peculiarly fitted to foster an early civilisation; for it is too unbroken a mass, having a broad desert to the north, and a wild, unsheltered coast, far from civilised man, to the south. Yet it is not without its advantages. In the interior it has some great navigable lakes, and on its western side, although not on its eastern, it has several good navigable rivers, although these indeed be, in magnitude and length of course, far from equalling those of Asia, of America, or even of Europe.

Many parts of Africa are of adequate fertility, readily yielding the usual products of the tropics, with some which are peculiar to itself, as the coffee-plant and the oil-giving palm, while the experience of European colonists has shown that its extra-tropical parts, at least, are well adapted to pastoral, and in some degree even to tillage-husbandry. Nor can any part of the continent, in so far at least as concerns its native inhabitants, be deemed insalubrious, seeing that it produces physically one of the most robust races of man, and that not only does population not decline, but that it can afford to part yearly, even at the present day, as it has been doing for three centuries, with thousands of involuntary emigrants.

The Negroes of Africa, ever since they have been known to civilised man, have been in possession of the ox, the sheep, the goat, the horse, the camel, the hog, and the dog. As long as we have known them they have cultivated millets, pulses, and rice, and, since the discovery of America, maize, while the cotton-plant is either indigenous to their country, or time out of mind was introduced from India. Wherever they have been seen by Europeans, they have been found in possession, however rudely exercised, of the art of fabricating malleable iron, and gold is the product of several parts of their country. On the western coast, the Negros have been in communication with the civilised nations of Europe for four hundred years; on the eastern, with the Arabs and Hindus immemorially.

The Negroes of Africa, then, had nearly all the appliances that contribute to social progress in a far higher degree than the more advanced nations of native America, who had but a single corn, a single beast of burden, and that small, inefficient, and limited to a narrow locality, while they were wholly ignorant of iron. In a far greater degree the African Negro was better off than the fairer race of the isles of the Pacific, who had no corn, no beast of

burden, and not only no iron, but even no metal whatsoever, not even gold. For this race there was no bronze or iron age; they got never beyond fish-bones and stone; and yet, in some favourable cases, their civilisation was of a higher type than that of many tribes of African Negroes with far greater advantages.

Let us note, then, the kind of civilisation which has grown up with the African Negro under conditions far more advantageous than with many other races. It would be needless to compare the civilisation of the African Negro with that of the races of Europe. They have not even reached the civilisation of the other races of their own continent. They have not only not reached that even of the second-rate nations of Asia, but they are far below that of the third-rate civilisation of that continent and even of its islands. Their agriculture is rudimental and unskilful to the last degree, and their arts are confined to the manufacture of a coarse pottery by the hand, to the weaving of a very coarse textile fabric from cotton, and to the fabrication of malleable iron.

One remarkable example of the obtuseness of the African Negro, although referred to on a former occasion, deserves to be repeated. The elephant is more abundant in the country of the Negroes than in any other part of the world; yet they hunt it only for its flesh and its tusks, and have never tamed and reduced it to servitude, as have done all the nations of Asia in whose country the elephant is indigenous. The African elephant is, indeed, a distinct species from the Indian, but equally amenable to domestication, as sufficiently attested by the well-ascertained fact of the African being the elephant domesticated by the Carthaginians, a people of Asiatic origin, whose example the African Negros have not had the capacity even to imitate, for at the present day a Negro has no more idea of the possibility of taming an elephant than of an alligator.

Negro literature is an absolute blank. No Negro people has ever invented letters, symbolic or phonetic, and rarely have Negroes adopted the writing of other races. The achievement of inventing an alphabet has been acomplished by other races on their own continent, as in the examples of the Abyssinians and ancient Mauritanians; and it has been performed in Asia and its islands by nations of the second and even third-rate civilisation, as in the case of the Javanese, Sumatrans, and Luconians; but never by a Negro people. "There is," says Consul Burton, speaking of Ashantee, "the usual African want of invention; a plough, a saw, or an alphabet are equally beyond the limits of their organisation."

Architecture, in any scientific sense, is equally a blank with letters. The dwellings of the Negroes, and even the palaces of

Negro kings, are ever of poor temporary perishable materials. The art of making bricks, or hewing stone, seems to be unknown to all the purely Negro nations of Africa. From one extremity of the land of the Negroes to the other, there exists no monument of enduring materials, no temple, no tomb, no bridge. The single exception consists in mosques, with walls of mud and roofs of thatch, and these only in very few localities, where the Negroes have intermixed with Arabs, and adopted the religion of the latter.

The religion of the Negroes would be better named witchcraft, having wizards for its priests. It has no doctrine, no ritual, no temples,—hardly even graven images. No prophet has ever arisen among them to bestow upon them a systematic and coherent belief. Incantations, with human sacrifice, accompanied by libations of foreign "fire-water," must be reckoned as included in the religion of the Negroes.

What was thought by our forefathers of the African Negroes, is to be gathered from the description given of them by one John Lok, who, tempted by its gold and ivory, visited the western coast of Africa about the middle of the sixteenth century. He pronounced them to be "a people of beastly living, without God, law, or religion, or commonwealth;" and, says Mr. Froude, from whom I quote, "he gave them an opportunity of a rise in creation, by carrying off five of them as slaves." Even the Mahomedan religion, despite its bigotry and intolerance, has proved a boon to the Negro, for wherever it has penetrated, it has humanised him, human sacrifices and cannibalism disappearing on its adoption.

The wars of the Negroes are but the incursions of savages, their chief object being plunder, and the main booty—man, to be sold into slavery, or offered up as a sacrifice to some demon. On the western side of the continent, firearms are the usual weapons, furnished by European nations; but on the eastern, the bow and arrow are more frequent. The art of war is somewhat more skilful where the Arabs have intermixed with the natives, and here alone we find a cavalry.

Government among the Negroes is in the rudest form of a despotism the most absolute and unrestrained. Among no people is human life held so cheap. This is evinced by the slavery both of the western and eastern coasts, and by the human sacrifices of Ashantee and Dahomy. No Negro people has even had the capacity to build up an empire or a monarchy of any extent and durability, such as Egyptians, Numidians, and even Nubians have erected in their own quarter of the globe; such as have always existed in most parts of Asia, and of which we have at least two examples even in native America.

This picture of Negro government, drawn chiefly from the people of the western side of Africa, is shown by recent travellers to be equally applicable to those of the eastern and central parts of the continent. Describing the kingdom of Uganda, Captain Speke observes: "Should one of the king's wives commit any trifling indiscretion, either by word or deed, she is condemned to execution on the spot, seized by the pages, and dragged out to execution. When a new king ascends the throne, all his brothers, with the exception of one or two to secure the royal line, are put to death, and the manner of execution is by burning." By the same writer the administration of justice is thus described: "As to the minor business transacted at court, culprits are brought in bound by officers and reported. At once sentence is passed, perhaps awarding the most torturous lingering death, probably without trial or investigation, and, for all the king knows to the contrary, at the instigation of some one influenced by wicked spite. If the accused plead his defence, his voice is at once drowned, and the miserable creature dragged off to execution in the roughest manner."

As to the court etiquette of Uganda, here is Captain Speke's account of it: "An officer observed to salute 'informally' is ordered at once for execution, when everybody near him rises in an instant; the drums beat drowning his cries, and the victim of carelessness is dragged off in cords and by a dozen men at once. Another man, perhaps, exposes an inch of naked leg whilst squatting, or has his mbugu-stick contrary to regulations, and he is condemned to the same fate." "Notwithstanding the stringent laws for the preservation of decorum by all male attendants, stark-naked full-grown women are the valets" (of the king.) For human nature's sake it could be hoped that there was some exaggeration in these statements, but the narrator is one whose fidelity is beyond all suspicion.

The Negroes of Africa are eminently a home-keeping unadventurous race. Neither war, commerce, nor colonisation has ever tempted them to transgress their native bounds. To say nothing of the nations of Europe, Persians and Arabs have made foreign conquests, and even Chinese and Hindus have migrated to foreign and distant lands in the spirit of adventure; but the native African Negro is never seen abroad except as the result of slavery.

The Negroes of Africa, unambitious and unenterprising, have, notwithstanding, become involuntary colonists on a great scale. In America and its islands, which before knew no indigenous Negro race, there now exist probably not fewer than twelve millions of African Negroes, a considerable number of whom are free, but the majority still in the same state of slavery in which they were when first imported. We have here, then, a tolerably

fair opportunity of observing them in a state of servitude under stranger masters, in freedom under the same description of masters, and in a state of political independence their own masters. The comparison of the conditions of slavery and freedom does by no means yield results as favourable as we could have hoped. Increase of population is certainly no test of social advancement or happiness, but it is at least a proof that material wants are adequately provided for. The Negroes in the United States of America—where the experiment is seen on the largest scale—were well fed, clothed, and housed, while even the intercourse of the sexes was kept under some wholesome restraint. They were looked after, in fact, very much as a prudent and intelligent farmer looks after his working and breeding cattle. The increase of numbers with them kept pace very nearly with that of the free white population, although the latter only be aided by a large immigration.

The emancipated Negroes living among Europeans, still pursued by the proscription of race, are under political and social disabilities, and looked upon as outcasts; in fact, as a nuisance, of which the commonwealth ought to get rid. In our own colonies, the antipathy of race is as strong as in America; but social and political proscription are not carried to the same length, and the freedman is more his own master. Notwithstanding their emancipation, however, the Africans of our colonies, instead of increasing rapidly like the bondsmen of America, increase very little, if at all. Their numbers are, in fact, understood to be kept down, not from want of the means of subsistence, but by a promiscuous intercourse of the sexes, by infanticide, with corresponding vices, and the neglect of children.

In 1833, the period of slave emancipation in our colonies, the total number of the slaves of our principal colony, Jamaica, was 310,000; and by census taken in 1844 the free Negro population had fallen to 196,000, a decline of 37 per cent. A contrast to this is the rapid increase of the slave population of the United States of America. In 1850 its total amount was 3,200,000, and by the last decennial census it was in round numbers 4,000,000, an increase of 25 per cent.

In one of the greatest and perhaps the very finest island of the Antilles, the African Negros have been their own masters for half a century. They have inherited from their former masters one of the most highly cultivated languages of civilised Europe, in substitution of their own many barbarous tongues, and they inherited from them also several useful arts, and some beneficial institutions unknown to their forefathers in their native country. Notwithstanding these advantages and a free and independent intercourse with the civilised nations of Europe, the success of the

experiment has not been remarkable. In the comparatively short period which has elapsed, Hayti has had many revolutions, the government oscillating between a republic and an empire, in humble mimicry of the great nation whose yoke they threw off. The same sensual vices would seem to prevail in Hayti as among the emanpated Negroes of the British colonies, and the result is that increase of population has been stayed as in these. A census of the population of Hayti in 1821, seven years after the people had become their own entire masters, gave a population of 935,000, and the present number, by estimates is thought not to exceed 950,000, a miserable increase, in forty long years, of no more than between 1 and 2 per cent.

The facility with which the African Negroes submit to slavery, even their contentedness, nay, their cheerfulness in servitude, seems far to exceed that of any other race of man. This temper is evinced not only in their own country, and abroad under foreign masters, but even under masters less civilised than themselves. Thus at present some of the tribes of the Red Indians, who have made some advance in the arts of civilised man, are found in possession of Negro slaves.

The Hindus have been ruled or domineered over by strangers for more than eight centuries, yet still consider themselves the first of mankind; and the Chinese can despise the Europeans, heedless of the defeats and humiliations they have inflicted on them. Not so the African Negro, who, after his emancipation, looks up to and humbly imitates the master that once held him in slavery. The mimicry of French institutions already mentioned is an example; but I shall give another from a very sensible and judicious work — Mr. Anthony Trollope's *Visit to the West Indies.* "The West Indian Negro," says he, "knows nothing of Africa, except that it is a term of reproach. If African immigrants are put to work on the same estate with him, he will not eat with them, or drink with them, or walk with them. He will hardly work beside them, and regards himself as a creature immeasureably superior to the new comer. But yet he has made no approach to the civilisation of his white fellow-creature, whom he imitates as a monkey does a man."

The African Negro has succeeded but once in throwing off the yoke of slavery cast upon him by other races. This was the instance of Hayti, already referred to; but here he was aided by division among his masters, by great superiority of numbers, and by a climate favourable to him and fatal to his opponents—even by the education which he had received from his masters, but had never succeeded in giving himself. In the late civil war in America, the government of the Union had, as a war measure, proclaimed his unconditional freedom; but he took no ad-

vantage of it, for he was inferior in numbers, in knowledge, and in means; while even climate did not favour him as it did in Hayti.

The free Negroes of America and its islands exhibit the same unenterprising unambitious and home-keeping character as those of the parent country. Barbadoes is greatly over-peopled, and Jamaica greatly under-peopled; but the higher wages of the latter do not tempt the people of the former to emigrate. The free Negroes of America are treated as outcasts; but Hayti and Liberia, ruled by men of their own race, do not tempt them to quit the place of their birth, notwithstanding its seemingly insupportable humiliations.

The people of Madagascar, although still Negroes, differ materially from those of the continent, and seem to have attained a higher social position than any other family of Negroes, probably in a good measure owing to that strict insular position which, protecting them from the invasions and even incursions of hostile strangers, gives them peace. Nearly the whole of the great island is ruled by one government; the same language, with dialectic differences only, is spoken throughout; the same laws, manners, and religion prevail over the whole island; the human sacrifices and cannibalism of the continent are unknown, and agriculture has made such progress that the people of Madagascar export both corn and cattle. This is unquestionable evidence of a civilisation superior to that of any Negro people of the continent, and the inhabitants of Madagascar form probably the most numerous and advanced nation of Negroes that has ever existed under a purely native government. Yet they are equally ignorant of letters, as are all other Negroes. They have neither invented them themselves nor adopted them from strangers. The same unadventurous character belongs to them which characterises elsewhere the family of man to which they belong. Until the efforts of European nations to settle on their coasts, after they had doubled the Cape of Good Hope, there is no evidence of their having held an intercourse with strangers, the remote Malays excepted; and for this there exists no other proof than the existence in their language of a considerable number of Malayan words, including the entire body of numerals and the names of some useful objects, which seem to have been introduced by Malayan immigrants.

The people of Madagascar, although superior in civilisation to all the Negroes of the continent, with the exception of the few who have intermixed with Arabs, and adopted the religion and manners of the Arabs, and to some extent even mingled their blood with them, rank far below the third-rate civilisations of Asia and its islands, as, for example, those of the more advanced nations of Sumatra and Java. These have been immemorially in

possession of phonetic alphabets, which, however, they did not carry with them to Madagascar, or carrying, they were not adopted by the people of that island.

Some writers have, in my opinion, very idly imagined that the African Negro made some approach to the anthropoid ape, forming, as it were, a link between man and monkey: a fancy as unfounded as it would be to insist that a Shetland pony was not a horse because it wanted the size and strength of a London dray-horse or the fleetness of a racer; or that a spaniel is not a dog, because it wants the courage of the bull-dog, the size and strength of the mastiff, and the swiftness of the greyhound.

Among the arguments relied on for the degradation of the Negro below the level of other men are some minute and assuredly fanciful differences between the internal anatomy of the Negro and European. These differences, when they are real, appear to me of no value whatever, because, for aught we know to the contrary, a superiority for the Negro might just as reasonably be argued from them as an inferiority. There is no ascertained difference in the internal anatomy of the horse, the ass, the zebra, and quagga; but we know them, notwithstanding, to be distinct species, having widely different attributes.

In order to support the hypothesis of the Negro being a distinct species from the European, some writers have assumed that the mixed offspring springing from their union—as is the case with hybrids between different species of the same genus of the lower animals—can have at best but a temporary existence, and must die out in a few generations. I am thoroughly satisfied that for this extravagant notion there is not a shadow of foundation. It is not entertained on the spot where the intermixture takes place, and where, if it existed, it ought to be best known. It certainly has no place with the other mixed races of man—such as those of Europe, of Asia, and of America—and I have not the least doubt but that the number of mulattoes is at present greater than it was fifty years ago, and greater then than it was one hundred years before. In physical form, vigour of constitution, and in mental endowments, the mulatto partakes equally of the quality of both parents. That, in intellectual power, they have some advantage over the Negro, is sufficiently proved by the experience of half a century in Hayti, where the majority of leading men have been mulattoes, although forming the minority of the population. I need not, however, enlarge on this subject, as I have already treated of it in another essay.

The Negro is a man with every attribute of one. He is one of many races, of very unequal qualities. He is equal, in strength and stature, to the European, but very far below him in mental endowment. He is superior in strength, but inferior in intellect,

to all the races of Asia that have had the same opportunities of development as himself. He is greatly superior in physical strength to the red man of America, but intellectually scarcely his equal, if we are to judge by the progress made by the Mexicans and Peruvians, labouring under disadvantages to which the Negro was not subject.

But the African Negro, although greatly inferior to many races, is far from being at the bottom of the scale. He surpasses the Hottentot and the Australian, and is far above all the races of Oriental Negroes.

The question has been much mooted, whether the African Negro be the species of a genus distinct from the European; or, to take a wider view of the subject, whether the different races of man constitute distinct species of a family. I am of opinion that the word "species"—by which we generally determine with sufficient accuracy the members of a genus of the lower animals—cannot be applied to man, a creature to whom there is no parallel in creation, whether in bodily form or in mental endowment. The word "race," in its sense of "a particular breed," has been used by ethnologists, and must continue to be so until we find a more suitable one.

In the view I have taken of the characteristics of the African Negro, I am confirmed by the opinion of a great physiologist and eloquent writer, Professor Huxley, who, in his recent lectures on the Mammalia, takes occasion thus to express himself:—"Although, in the lower races of man now on earth, the human characters vary a little in some particulars in a pithecoid direction, the extent of the variation is very slight indeed when compared to the whole difference which separates them—and it may be safely affirmed that there is, at present, no evidence of any traditional form or intermediate link between man and the next succeeding form in the vertebrate scale."

The African Negro possesses a combination of qualities which distinguish him from the rest of mankind. These consist of physical strength and capacity of enduring toil, with docility and submissiveness. It is this combination that has provoked and encouraged the more highly endowed races to reduce him to bondage in all known ages down to our own; for Negroes have always been, as they still are, slaves, to Egyptians, to Persians, to Turks, and to Arabs. The discovery of America, the paucity of its inhabitants, with their incapacity of toil, and the bad governments of Africa itself, created the European slave-trade, which has peopled the New World, greatly to its detriment, with a race of man wholly new to it. No other race of man is so amenable to bondage as the African Negro. The Red Indian pined and died in slavery; the Hindu and Chinese, subjected to the treatment

which the Negro has undergone in America, would sulk and commit suicide, and the Malay would certainly run-a-muck. Among the people now referred to, slavery no doubt exists; but the slaves and the masters are for the most part fellow-countrymen, of the same race, and speaking the same tongue. This is a kind of bondage very different from that of the Negro, whose master views him only in the light of a superior description of cattle.

It is not necessary that I should describe all the demerits of African slavery; but I shall briefly advert to a few of them. It degrades the slave and demoralises the master, who is obliged to look on human beings in the light of mere cattle; and I am satisfied that the master is, on the whole, the greater loser of the two. The mere presence in the same country of an inferior race of man, bearing in mind and body the broad stamp of inferiority—even if it consisted of freemen—would be a great evil. In a society consisting of these discordant elements, no substantial equality is possible; since, whether in a free or servile condition, the inferior race would be certain to be viewed by the superior as a degraded class, with whom it is impossible to amalgamate. The terrible revolution—so destructive to life and property, and so threatening to liberty—just terminated in America, was wholly due to the presence, chiefly in one section of that great country, of an African population, whose whole number did not exceed one-fifth part of the entire community. Could so great a catastrophe have been anticipated, assuredly we should have had no slave-trade or slave population in America.

Another objection readily presents itself. The introduction of African labourers to compete with European, is plainly throwing an obstacle in the way of legitimate colonisation, and hence obstructing the progress of society. On the same principle, I think the Anglo-Saxons of California and Australia justified in throwing difficulties, as they do, in the way of the settlement of the Chinese, who, although a race far superior to the African Negro, are yet incapable of amalgamating with Europeans, or, indeed, even sharing in a free government with them.

The inferiority of the African is pleaded as a reason for holding him in slavery; but I presume it will hardly be argued that any one race of man was expressly created to be slaves to another, as certain black ants have been created to be the servants and slaves of certain red ones. It is quite beside the question to plead that the material wants of the Negro are better provided for in slavery than in freedom; for his happiness and free-will are all that deserve consideration. The relation of the Negro to Europeans, as a slave, was assuredly not the design of nature, but the pure creature of accident.

The other objection to Negro slavery in a community of European masters, is quite obvious—the obstacle which the contrast of races opposes to emancipation. Had, for example, the millions of slaves in the Confederate States of America been of European race, it is certain that public opinion would long ago have caused their emancipation, and the freedmen would have been imperceptibly absorbed in the mass of the people, as has actually happened in all the civilised countries of Europe, and in a great measure even in some Asiatic countries, such as India and China. It is the reverse with the Negro slave. His bondage seems justified by his very complexion; and, even when emancipated, he continues a degraded outcast. Even density of population, which, by making it unprofitable to breed slaves, has been in Europe and in the more civilised parts of Asia the main cause of the extinction of slavery, would not improve the condition of the emancipated Negro; for he would still be a degraded being in the eyes of the majority. Transportation, even if a country could be found fit to receive the Negroes, would be impossible, from the vastness of their numbers; and their social inferiority on the American soil seems therefore destined to continue an irremediable evil—a just, but, perhaps, too severe a retribution on the descendants of those who gloried in the slave-trade.

A few freed Negroes in the colonies of European nations, but never in their own country, have occasionally acquired some distinction in art, science, and literature; and well-meaning persons have adduced such cases as evidence of high capacity. But the examples have been rare, and the attainments not above mediocrity. We wonder at them only because they appear in a Negro shape, much as the poet represents superior beings as wondering at the attainments of Newton.

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## II. ON THE ORIENTAL NEGRO.

[*Read Dec. 12th*, 1865.]

Having, in a preceding paper, endeavoured to give some account of the physical and psychical characters of the African Negroes, I now attempt to do the same with the Oriental Negroes.

Neither on the continent of Europe, of America, nor indeed of Asia, until we reach its ultimate southern extremity, is a native Negro race to be found. Not so with the Asiatic Islands, or what geographers have recently called the Oceanic region. Proceeding eastward, we first find a Negro race at the distance of 3,000 miles from the continent of Africa. This is in the Andamans, a group of islands extending in a narrow line from the 10th to the 14th degree of north latitude, and within the region

of monsoons and hurricanes. The sole inhabitants of these forest-clad islands are pigmy Negroes. In so far as their physical form is concerned, they have been well described by Dr. Mouat and Professor Owen. One living and two dead male subjects were examined by Dr. Mouat, and found to be of the height of four feet nine inches and a half. As these, however, were warriors and rowers, and probably, therefore, above the average stature, we may probably take the usual height of the male adults at four feet nine inches. Taking the average stature of the African Negro to be the same as that of the European, it will follow that the Andaman Negro is by eight inches short of the African standard, and at least four inches short of the average stature of European women. The person, for so diminutive a people, is strong and well-built. The features of the face are not particularly described, but have the African type, and, to judge by the photograph sketch in the work of Dr. Mouat, are very ugly. The precise texture of the hair of the head is not described, but it is palpably woolly. The colour of the skin is described as a shining black. I remember seeing, many years ago, two natives of the Andamans who had been captured as children, and were at the time full-grown men. In colour and stature they agreed with the account given by Dr. Mouat: the hair of the head was short and woolly, and the features were somewhat more prominent than with the African Negro.

This strange race of man is found at a distance of little more than 1,000 miles from the Hindus of Bengal, little more than half that distance from the Hindu-Chinese of Pegu, and but 70 miles from a pure Malayan race in the Nicobar Islands.

The next example we have of a Negro race is in the northern part of the Malay Peninsula, but in that part of it only, distant about 500 miles from the Andamans, and there along with tribes of a Malayan race. A full-grown individual male, brought from the mountains of the Principality of Queda to Penang, was measured by the late General Macinnes, and found to be four feet nine inches high, of brown complexion, and with black woolly hair. Two children of this race were sent to myself by the Malay Prince of Tringanu, a state which lies opposite to Queda. They were of a brown and not black complexion, with hair of a woolly texture, and the African Negro features, although in a mitigated form. This race, known under the name of Sâmang, are confined to the forests and mountain recesses, and, it may be said, are everywhere hemmed in by Malays, without any communication with the sea-coast.

The next race of Negroes which we find, proceeding eastward, is in the Philippine Islands, at least 1,500 miles distant from the Malay Peninsula. These also are diminutive beings, and called

by the Spaniards Negrillos or Negritos, signifying little Negroes. The average stature of the adult male does not, it is stated, exceed four feet six inches; but the measurement here given being French, the actual stature is probably about the same as that of the pigmies of the Andamans and Malay Peninsula. According to Spanish writers, the hair of the head is woolly, the skin not black but of a very dark brown, which they compare to the colour of over-roasted coffee-berries. This people, known to the other natives of the Philippines by the term 'Aita,' are found only in mountain recesses, being everywhere encompassed by the brown-complexioned Malays and without access to the sea-coast. They exist only in five out of the almost countless islands of the Philippine Archipelago—namely, Luçon, Panay, Mindoro, Negros (which takes its name from them), and Mindanao—and their total number is estimated not to exceed 25,000, out of a population of the Malayan race which probably does not at present fall short of 6,000,000.

There are no Negroes in any of the numerous islands of the proper Malay Archipelago. Finding them in the Malay Peninsula, which is properly a part of that Archipelago, we should expect to meet with them in such an island as Borneo, so near to the Peninsula, and so much resembling it in animal and vegetable products. Although containing many Malayan tribes, nearly as wild as the Negroes of the Peninsula, no Negro race now exists in it, nor is there any record, or even tradition, of their ever having existed. Proceeding in a southerly direction, we first encounter a Negro people in the great island of New Guinea and the islets on its coast, at the distance of 500 miles from the nearest and 1,200 miles from the most remote of the Philippines, and full 2,000 miles distant from the Negroes of the Malay Peninsula. New Guinea is nearly double the size of the British Islands, and is wholly peopled by Negroes; but these are no longer pigmies, but men of about the same stature as the Malays, which will give them an average height of five feet three inches, making them by half a foot taller than the pigmy Negroes whom I have above described. With the New Guinea Negro the complexion varies from a deep brown to a black; the nose is more or less flat, having wide nostrils, and drooping at the extremity. The mouth is large, the lips thick, the teeth good and not, as in the African, obliquely set in front. The hair of the head is of woolly texture, and grows in spiral separate tufts to the length of from nine inches to a foot. Left uncut, it can be dressed so as to form a bush or mop round the head, from which it was that Dampier gave this people the name of 'mop-headed Indians.' It is the quality of the hair (growing in detached tufts and capable of elongation) and the shorter stature which chiefly distinguishes the Negro of New

Guinea from the typical one of Africa, whose hair is short and covers uniformly the whole scalp, while his stature is equal to that of the European.

It was the striking resemblance of the inhabitants of this great island to those of Africa that led to its present name, which was bestowed upon it by the Portuguese, its first discoverers, in the beginning of the sixteenth century. I have myself seen in Java several of the Negroes of New Guinea as slaves, and, until better informed, believed them to be Africans—so striking, at first view, is the resemblance between the two races. With respect to the name of Papua, which Europeans have sometimes given to New Guinea, the word is simply the Malay adjective for 'frizzly,' or woolly, and is equally applicable to any object having this quality, whether the hair of a Negro or the fleece of a sheep.

From the western extremity of New Guinea, in 130 deg. east longitude, to the remotest of the Fijis in 180 deg., and from the equator to within a degree of the southern tropic—that is, over 50 degrees of longitude and 22 of latitude—the native inhabitants of all the islands of the Pacific are Negroes, without an exception; while to the north of the equator, and east of the 180th degree of longitude, no race of Negroes is found. The limits of what may be called Oriental Negroland are very well defined. To the north the Negroes are bounded by a race of yellowish-brown complexion, with lank hair, who, although not Malays, a good deal resemble them. The island of Waygeo and the Aru Islands, but 60 miles from New Guinea, are peopled by Negroes; but Ceram, about 90 miles from its south-west coast, is inhabited by a totally different race, lately called by European geographers Negro-Malayan, from their partaking of the character of the Negro and the Malay, although assuredly not a cross of the two, but a pure aboriginal race. To the south, the Negroes of New Guinea have the Australians, a very different race—the sea that divides them at one point not exceeding 80 miles in breadth. To the east the Negroes have the Polynesian race to within 250 miles of them, and extending over 70 deg. of longitude and at least 60 deg. of latitude.

But although the people within the limits I have above described be all Negroes, there exists a great diversity among them, and probably the people of the different islands or groups of islands will be found independent and aboriginal races. We possess authentic information respecting a small number of them only, and of these I shall give some examples. Captain Cook thus describes the inhabitants of Mallicollo, one of the New Hebrides or Great Cyclades: "Had we made a longer stay, we might have soon been on good terms with this ape-like nation: for, in general, they are the most ugly ill-proportioned

people I ever saw, and in every respect different from anything we had met with in this sea. They are a very dark-coloured and rather a diminutive race, with long heads and flat faces, and monkey countenances. Their hair, mostly black or brown, is short and curly, but not quite so short and woolly as that of a Negro. Their beards are very strong, crisp, and bushy, and generally black and short."

On the same high authority we have a description of the inhabitants of Erramango, another island of the same group. "These islanders," says Captain Cook, "seemed a different race from those of Mallicollo, and spoke a different language. They are of the middle size, have a good shape, and tolerable features. Their colour is very dark. Their hair is very curly and crisp, and somewhat woolly."

Of Tanna, one of the New Hebrides, Cook's account is the following: "At first we thought the people of this island, as well as those of Erramango, were a race between the natives of the Friendly Islands (Polynesians) and those of Mallicollo; but a little acquaintance with them convinced us that they had little or no affinity to either, except it be in their hair, which is much like what the people of the latter island have. The general colours of it are black and brown, growing to a tolerable length, and very crisp and curly. These people are of the middle size, rather slender than otherwise. Many are little, but few tall or stout. Most of them have good features and agreeable countenances."

Of the Negroes of New Caledonia, Forster, the naturalist and companion of Cook, gives the following account: "The people were different from any we had seen. They were very stout, tall, and in general well-proportioned; their features mild, their beards and hair black and strongly frizzled, so as to be almost woolly in some individuals. Their general colour was swarthy or a dark chestnut-brown, nearly the same with that of the people of Tanna."

Admiral Erskine, a worthy follower of the greatest of our navigators, confirms, at an interval of eighty years, Captain Cook's account of the islanders of Tanna, while he adds some traits of his own. "We at once recognised," says he, "Captain Cook's description of the people as identical with their appearance at the present day. They are generally of short stature, but muscular and athletic. The colour of their skins is a shiny black, and their bodies are covered with hair or a kind of down. Some had black or brown crisp hair, but that of the greater number was twisted into a number of thin cords. The nose was generally rather flat, and the eyes of a chocolate colour."

In the island of Vanicoro, celebrated for the wreck of La Pérouse, we have an example of another Negro people, different

from all the others of the Pacific Islands. M. D'Urville, in the *Voyage of the Astrolabe*, describes them as small and very black, with hair crisp but not bushy, and altogether approaching nearer to the African type than any of the other Negroes of the Pacific. They cultivate the taro, the yam, the batata, and the banana, but are in other respects naked savages.

Admiral Erskine's account of the Fijians, at the extreme eastern limit of Oriental Negroland, is the following: "It is impossible," says he, "not to perceive, on arriving at these islands, that one has come among a distinct race of man. The standard of height among the Fijians is about the same as that of their neighbours (the Polynesians), but their more muscular and less rounded limbs, their crisp hair—even when, as among the common people, it has undergone no process of dressing—their somewhat flatter faces, and the dark colour of their skins, to which the quantity of hair on their bodies gives a bluish-black tinge, offer a strong contrast to the many Tongans (Polynesians) whom one has generally an opportunity of comparing with them on the spot." In Admiral Erskine's work, the *Narrative of a Voyage in the Western Pacific*, there is a characteristic portrait of a Fijian in the person of Thaukiambau, chieftain of Viti, in which we find the unexaggerated Negro with a beard, whiskers, and mustachios that a Persian would not be ashamed of, and this, not under a cotton turban, but one made of the paper-mulberry.

Without reckoning the pigmies of the Andamans, of the Malay Peninsula, and of the Philippines, we have, in what I have called Oriental Negroland, several different varieties. Thus we have the people of New Guinea of the average stature of Malays, which is known to be four inches short of the European standard; while the Fijians are stated to be of the same stature with their neighbours the Tongans, that is, of the Polynesian race, which is ascertained, by the fair trials of Mr. Thomson made in New Zealand, to be nearly the same with that of the European. This makes the Negro of New Guinea four inches shorter than the Negro of the Fijis. The ape-like people of Mallicollo, besides differing in features from both these, would appear to be even shorter in stature than the people of New Guinea, while the people of Vanicoro are yet shorter than those of Mallicollo.

The nearest accord in the tribes of Oriental Negroland is in the complexion—always a black of more or less intensity—and in the hair of the head, which, instead of being short, woolly, and covering uniformly the whole scalp, as is the case with every race of the African Negro, grows in distinct tufts, is crisp and woolly, running to the length of from nine to twelve inches, and capable of being either dressed into a bush or mop, or converted into ringlets of the form of whipcord. There is a slight mistake

made both by Captain Cook and Admiral Erskine respecting the hair of the Austral Negroes. They represent it as being sometimes of a brown colour. The hair, however, which they represent as brown, is probably nothing but the dead hair not combed off the living, and deprived of most of its colouring matter by exposure to the sun.

The reflection of Forster, the naturalist of Cook's second voyage, respecting the races of the Pacific, on the first view of New Caledonia, of which the great navigator was the discoverer, is worth quoting. "The whole land," says he, "appearing to be very extensive, we honoured it with the appellation of New Caledonia. We would not wait the moment which would bring us acquainted with the inhabitants of this land, but formed several conjectures relative to them. As we found the inhabitants of the New Hebrides not only different from the New Zealanders, but also differing from themselves, the new country offered itself to our eyes very opportunely, in order to account for the population of New Zealand; but the sequel convinced us that our ideas were very premature on this subject, and that the history of the human species cannot be unravelled with any degree of precision."

Independent of the varieties of African Negro, I have here endeavoured to describe no fewer than seven Oriental ones, and, I am satisfied, without exhausting the number. Whatever similarity may seem to exist among Negroes, there is assuredly no evidence to show that they are all of a single origin, or, in fact, other than separate and independent aboriginal creations. The evidence of language—so often referred to, and sometimes successfully, on questions of the affinity and history of nations—leads, in this instance, to no other conclusion. Thus, on the continent of Africa, there are computed to be several hundred separate and independent tongues, without any other connection than a few words in common, such as are known to prevail in other parts of the world between nations or tribes within practical reach of each other.

The language of Madagascar, although that island lies so near to the continent, is stated to be entirely unlike any continental Negro tongue in words, in sound, and in structure. It is highly probable that even the Negroes of the Andaman Islands, few as their numbers are, will be found to speak not one but several independent languages. Dr. Mouat and his companions had been furnished with a short vocabulary of an Andaman language compiled by his predecessors, who had visited these islands sixty years before his own visit, not a word of which was understood by the native whom his party had captured and carried with them to Calcutta. A separation into different tribes, speaking different languages, may, indeed, in some measure be inferred

from the physical geography of this little archipelago, divided as it is into several islands, and so forest-clad as to be almost impenetrable, leaving nothing for habitation by savage fishermen save the narrow sea-coast. Difference of language may here, I think, be even inferred from the eminently pugnacious character of the people and their skilful use of arms, which they could habitually use only against a native enemy, since the assault of an external foe would be a contingency against which preparation would hardly be thought of.

The Sâmang or pigmy Negroes of the Malay Peninsula, the only Negro people on the continent of Asia, are confined to that portion of the country which lies between the fourth and sixth degrees of north latitude, for they are not found beyond these narrow limits. I possess myself only a vocabulary of the language of the Negroes of the principality of Queda, and therefore I want the means of instituting a comparison; but the Malays assert that the tongues spoken by the Negroes of that principality, and those of the other states within which the race is found—namely, Perak, Patani, Kalantan, and Tringanu, are wholly different from it and from each other.

There is every ground for believing that the same diversity of languages prevails over the great island of New Guinea and its satellites, and that, in fact, there exist here as many tongues, proportioned to extent, as in Africa or America. This is to be implied, indeed, from the very scanty specimens of the languages of that island which we possess, not exceeding half a dozen, and in which no two native words for the same idea are found to agree, save when all borrow from the one Malayan source. It is, indeed, in a good measure proved by the fact that the Dutch navigators of 1828 and 1835, sailing only along the northern coast of the island, and starting from Dory, where the Malay language was understood, were obliged to employ new interpreters at almost every new day's sail. The savages of New Guinea, indeed, would differ from men in the same state of society in other parts of the world, if a great diversity of languages did not obtain among them.

The testimony of all the navigators who have visited the islands inhabited by Negroes east and south of New Guinea goes to prove that each island, or at least each group of islets, has its own peculiar tongue; there being nothing in common between them except a few words of Malay or, now and then, of the Polynesian language—that of the fairer and more advanced race of the Pacific Islands.

I shall now endeavour to describe the social condition of the diverse races of Oriental Negroes, beginning with those of New Guinea and of some islands on its coasts. The inhabitants of the

coasts of the "Great Bay," or Bay of Geelvink, on its northern side, which so deeply indents the island as to make New Guinea to consist of two peninsulas of unequal size, have attained a certain measure of civilisation, in consequence of their long connection with, and indeed subjugation by, a Malayan people. They have large dwellings, which accommodate several families; are decently clothed, but with foreign materials, for they have no textile fabrics of their own; have large rowing and sailing vessels, a knowledge of making malleable iron, and a rude acquaintance with agriculture —cultivating a little rice, the sago and coco-palms, and the yam. They are in possession of two domesticated animals, the hog and the dog. Their chief food consists of sago and fish. According to the testimony of the Dutch navigators of 1849, they are gentle to timidity, and strictly honest.

That they owe the degree of civilisation they have attained to the Malayan race is to be inferred from the existence, in such of their languages as have been examined, of a considerable number of Malayan words—as, for example, the names for nearly all the objects above enumerated, and all terms connected with trade, including the numerals.

The superiority of the brown lank-haired race over the dark and woolly-haired one is strikingly exemplified in the instance before us. The inhabitants of the coasts of the "Great Bay," but more especially of Dory at its western angle, have been immemorially subject to the little and remote Malayan island of Tidore (correctly Tidori), one of the small group of the Molucca or Clove Islands. Tidore is at least 700 miles distant from the "Great Bay." What makes this conquest the more remarkable is, that the little island which effected it was itself possessed neither of letters nor of a calendar, and owed its power to the demand which the western nations of the world had for its cloves—a product peculiar to it, and the little group to which it belongs.

The rest of the inhabitants of New Guinea, of the same race as those now described, are in a very different state of society—in fact rude, naked, and inhospitable savages, without knowledge of agriculture or arts. The only advantage they display over the Australians is in the possession of boats; but they are very far below the rude inhabitants of the interior of Borneo, a Malayan people, who have made some progress in the arts—cultivating corn, fabricating iron, and rearing the dog, the hog, and the common fowl. They are, as already stated, divided into innumerable petty tribes, speaking different languages, engaged in frequent wars, the object of which is to make prisoners for sale or ransom—in this respect a counterpart of Africa on a small scale. There are, however, no authentic accounts of the existence among them of cannibalism, or of human sacrifices. The last practice, indeed, would suppose

an amount of arbitrary power in the chiefs which is never attained among such little tribes as prevail in New Guinea.

Of the state of society among the Negroes of the Pacific, the most full and authentic accounts we possess regard that of the Fiji or, more correctly, Viti group. This consists of not fewer than 230 islands and islets, one-half of which only is inhabited. Two of the islands alone are of considerable size, having each a circumference of 250 miles—large ones for the Pacific. The group lies in the southern hemisphere, in a latitude corresponding with that of Jamaica in the northern; and, of course, the climate is tropical. To the south-east of the Fijis lie the Friendly Islands, or Tonga group, and to the north-east the Samoan group, both about 250 miles distant, and both inhabited by the fairer race of lank hair, or the Polynesian.

The most authentic and impartial account of the Fijis has been given by Colonel Smythe, who, as a government commissioner, was in 1861 deputed to report on their capabilities as a British colony, for which they were recommended by certain missionaries, owners of land in the Fijis. He describes the inhabitants as amounting to about 200,000, speaking one language, with dialectic variations. This language differs wholly from that of their fairer neighbours the Polynesians, which, over a vast area, is essentially the same. The Fijian language, however, contains a few words of this last tongue, as it does also of Malay. There is no ground for believing that the Fijian language has any essential agreement with any of the other Negro tongues of the Pacific. There is, however, one character in which all these Negro tongues agree, although it is not an essential one: this consists in their uniformly containing a greater proportion of consonants and a smaller of vowels and liquids than the language of the fairer race. Captain Cook early noticed this difference, from finding that the Negro races pronounced English words correctly, which was impossible by the fairer race; and he has been confirmed in this observation by several of his successors.

The Fijians are possessed of the two principal domesticated animals, the hog and the dog, found among the fairer races when first seen by Europeans, but in no instance is the common fowl possessed as by the Polynesians. All the cultivated plants possessed by the latter are also known to them. The following is Colonel Smythe's judicious account of the state of society among the Fijians: "The men are generally above the middle height, robust and well-built. Their principal occupation is the cultivation of their yam and taro plants (which afford periodical but easy employment), sailing in their canoes, fishing, and frequently fighting. The chief articles of food are yams, taro, fish, and cocoa-nuts, bread-fruits, bananas, and other fruits, the spon-

taneous products of the soil. Their clothing is extremely scanty, consisting of a narrow strip of cloth, or rather paper, prepared from the bark of the paper-mulberry. Their houses are constructed of reeds and grass on a framework of poles. The floor is the natural soil, covered with fan-leaves and mats. In the middle is a sunken hearth, the smoke from which escapes through the walls and roof. Apertures, for light other than the doorways, are very rare. The houses are never isolated, but are crowded together in towns or "koros," which are frequently surrounded by a ditch and an earthen mound. The natives have raised no permanent structures. Although the coral reefs present an inexhaustible supply of lime, and they have discovered the art of burning it, they make no use of it except as paint, and to plaster their hair with. There are no beasts of burden or draught, and consequently no roads. The usual mode of moving about and of carriage is by canoes."

Of the state of government Colonel Smythe gives this account: "There are in the group probably not less than forty independent tribes, twelve of which, from their superior influence, may be considered to govern it. . . . . The rule of the chiefs is absolutely despotic; the lives and goods, and to some extent the lands, of the people are at their mercy." He afterwards adds: "The general habits and sentiments of the Fijians are opposed to the acquisition of property by individuals. The chief seizes anything belonging to his people that takes his fancy, and as readily gives it away; and the people are equally ready to beg and to give." Further on he observes: "Of the native population of Fiji, less than one-third profess the Christian religion. Among the remainder, cannibalism, strangulation of widows, infanticide, and other enormities prevail to a frightful extent."

The enormities thus briefly referred to by Colonel Smythe are stated in more detail by Admiral Erskine. On the subject of cannibalism, after referring to the ocular evidence which the officers of the American expedition of Admiral Wilkes had of it, he observes: "Although direct proofs such as the above may be necessary to convince some humane sceptics of the existence of this abominable practice, a visitor to the Fiji Islands must at once feel all doubt dispelled which he may have entertained on the subject, as the ordinary details of everyday life abound with examples which, if not spoken of by the white residents without disgust, excite at least no surprise. So habituated has the dead body become for food, that the missionaries assert that the Fijian language contains no word for a simple corpse; but the term used, "bakola," conveys the idea of eating; and a term which, when translated, we first considered a jest ("puaka balava," or long pig), is employed in serious parlance to express the difference between

the human body and that of a hog, to which the epithet "dina," or true, is in distinction applied. The supply of human flesh was formerly in all parts of the Fijis, and is still in the districts to which the influence of the missionaries has not extended, furnished from different sources, the luxury being in general demand, but denied to women and slaves. All enemies killed in battle are, as a matter of course, eaten by the victors, the bodies being previously presented to "The Spirit." This source of supply, to which it is now believed all the Negroes of the Pacific have recourse, as well as the bodies of shipwrecked persons, is by no means sufficient for the Fiji demand, whose customs require that, on occasions of ceremony, when strangers of consequence are entertained, the magnificence of the chief should be exhibited by a feast of human victims. The method of furnishing these is by kidnapping neighbours, generally females."

Other customs of the Negroes of the Fijis are not less atrocious. They put the very aged to death, the chiefs at least, by burying them alive. The widows of the chiefs are strangled: and as every small town has one chief and the larger two, while every chief has several wives, the number of women strangled must be considerable. "This strange and unnatural custom, which," says Admiral Erskine, "is so common that an aged or decrepit person is rarely seen among the Fijians, is excused under various pretences, and offers a strong contrast to the customs of the Tongans (the fairer lank-haired race), who esteem the care of the old as one of their principal religious duties."

In several of the islands of the Pacific inhabited by Negroes, there have been found a few individuals of the fairer race, easily distinguished by voyagers; while in the islands peopled by the fairer race no Negroes have been seen—sure evidence of the greater enterprise of the former. It is evident that the strangers would not be found among man-eaters unless they considered themselves safe, and that their presence conferred some favours, real or supposed, on the natives. Cook found the fairer race residing in the New Hebrides, but the cause which brings them is most authentically determined in the Fiji group. Colonel Smythe gives the following account of the reason which brings them to the Fijis, and their employment when there:—"The number of Tonguese in Fiji fluctuates considerably, but may be taken at an average from 300 to 400. Of late years they have taken an active part in Fijian wars, sometimes helping one chief, sometimes another, and invariably with success. They are distinguished by daring coupled with unity and discipline, in which the Fijians are most wretchedly deficient. They possess strong feelings of nationality, and own ready obedience to their chief Maafu, a near relative to the King of Tonga. Native agency is largely em-

ployed by the missionaries in Fiji, and many of the most efficient teachers are Tonguese. In cases where Tonguese teachers have been illtreated by the heathen natives, Maafu has interposed as the protector of his countrymen. In this manner, while extending his own influence, he has rendered safer the position of the native teachers." . . . . "The population of the Tonga group (the Friendly Islands) does not exceed a tenth of that of Fiji; yet from the mental and physical superiority of the Tonguese, their courage and discipline, and the dread of them established among the Fijians, there is little doubt that they could make themselves masters of Fiji—an enterprise which King George of Tonga has been said to meditate."

It will appear from all this, that the superiority of the fair over the black race in the islands of the Pacific is hardly less than that of the Arabs over the Negroes of Africa. In the islands of the Pacific the Negro and the fairer race are found under conditions equally favourable to progress. The climate is the same, the land alike fertile, and the products which minister to man's wants are also the same. It is man himself only that differs, and we come, therefore, to the unavoidable conclusion that the superiority of the fair over the Negro race is here almost as conspicuous as in the Western World.

But, perhaps, the most decisive evidence of the intrinsic superiority of the fairer over the darker race of the Pacific is seen in the extensive migrations of the first, and the total absence of all migration on the part of the last. The same fair race, attested to be so by the same physical form and the same language, is found in the Sandwich Islands under the Tropic of Cancer, and in New Zealand twenty deg. beyond the Tropic of Capricorn. So extensive a migration implies both cultivation and enterprise: the absence of migration, on the contrary, is clear evidence of their absence on the part of the Negroes; and this absence is proved by each island, or at least by each group of islands, peopled by them differing in physical form and language.

The only Negro races of whose state of society it remains to give some account, are the pigmy Negritos of the Andaman Islands, of the Malay Peninsula, and of the Philippine Archipelago. The Andaman Islanders are bold, brave, and inhospitable to ferocity. Their position for progress is as unfavourable as can well be conceived. They are cut off from the rest of the world; while their rainy country, covered with a tropical forest unconquerable by the feeble efforts of utter savages, contains no animal fit for food save a small species of hog, difficult of capture. There exists, indeed, not even a monkey or a lemur, which afford a supply of food to the rude inhabitants of some other tropical regions. This state of things makes them, of necessity, almost exclusively

fishermen, confining them to the mere coasts of their islands, and even there forcing them to the necessity of making frequent migrations in search of food. In the arts their progress, as might well be expected, is wonderfully small. Their dwellings consist of rude temporary huts, and all the clothing they have is a coat of mud to protect them from the mosquitos, both sexes being in all other respects as nude through life as at their birth. No metal whatever was known to them until ships came to be wrecked on their coasts, from which they obtained iron, their implements before being of bone and stone. The greatest effort of their skill is directed, as might be looked for, to the art of fishing. They fish with the hook, the net, and the spear, are bold swimmers and skilful divers, and they have canoes made, as usual by savages, from the hollowed trunks of trees, and these they paddle with dexterity; but they are unacquainted with the sail. Their chief weapon is the bow with the shield, and they appear, from the report of Dr. Mouat, to be skilful in fabricating them and expert in their use. Their chief animal food is fish, including shellfish and the tortoise. Their sole vegetable food consists of a coarse wild bean, and of the large, abundant, but hard, woody, and unpalatable fruit of the mangrove, long soaked in water—an article of diet which I have never heard that any other people had been driven to the hard necessity of having recourse to. According to the information of a runaway convict sepoy, who lived among them for a year, the women before marriage are common to all the males of their tribe, but after it become the property of the husband. There is no evidence of cannibalism among these poor people, and here their superiority over the Negroes of the Pacific Islands is striking and remarkable. They show their superiority over the Australians by the possession of boats; and although their condition be one of great privation, yet one even worse can be conceived. That of the red man of Tierra-del-Fuego, according to the authentic and graphic account of Charles Darwin, is certainly so. By his climate the Andaman Islander can, to a certain extent, dispense with clothing, while he seems to have food in tolerable abundance, however coarse the quality. The inhabitant of Tierra-del-Fuego, on the contrary, has to struggle against a very rude climate, cold, wet, and boisterous, with hardly any clothing at all, while his food—fish, like that of the Andaman Islander—is far more difficult to obtain.

Of the social condition of the small Negroes of the Malay Peninsula and the Philippine Islands we know too little to enable us to give any authentic details. Both are inhabitants of the mountain recesses of the interior, and are, from the necessities of their position, hunters instead of fishermen, like the Negroes of the Andamans. Excluded from the sea, and having no navigable

rivers, they possess no boats. Like the Andaman Islanders, they are ignorant of agriculture, and subsist on the produce of the chase and on wild honey, receiving their vegetable food from the more civilised races in exchange for beeswax, gums, and other spontaneous forest products. The blowpipe is the chief weapon of the Negroes of the Peninsula, but the more effectual bow and arrow that of those of the Philippine Islanders. Both in the Peninsula and the Philippines the Negroes are surrounded by rude tribes of the Malayan race, not converted to either the Christian or Mohammedan religions. These have some knowledge of agriculture and fixed abodes, and in both cases are far superior to the Negroes.

From what has been stated in the course of this paper, it will appear that the Oriental Negroes consist of several, indeed of many distinct races, differing from each other in physical form and in language, and often placed geographically at such distances from each other, that such communication between as would lead us to believe in their common origin is, to say the least, highly improbable if not, indeed, absolutely impossible. In short, it may be safely asserted that there is nothing common to them but a black skin, a certain crispiness or woolliness of hair, thick lips, and flat features.

By some writers, these Negroes have been considered the only aboriginal inhabitants of the countries in which we now find them, and the fairer lank-haired races as strangers and intruders. This is a theory without a shadow of evidence to support it—indeed, a mere figment of the imagination. The late learned and laborious Dr. Prichard indulged in this very wild hypothesis: "We must go back in imagination," says he, "to a time when the Malayo-Polynesian race had not yet entered the Indian Archipelago, or at least not spread themselves far beyond the limits of one or two of the principal islands." As neither in the neighbouring countries, nor indeed in any part of the world, does there now exist, or has there ever been known to have existed, such people as the imaginary intrusive race here alluded to, it was incumbent on Dr. Prichard to have told us from whence they came, how they travelled, and what cause induced them to invade the country of the Negroes; but he makes no attempt to meet this insuperable difficulty.

Even the very name which Dr. Prichard has invented for his supposititious invaders, and which has since been adopted by others writers misled by him, involves an error. This is Malayo-Polynesian, a term by which he would have us to understand that there is a connection of race between the Malays and the fair lank-haired people of the Southern Pacific. The two races are, as is now well known, essentially different, the Polynesian even

in stature exceeding the Malay by at least four inches. Even their languages, the apparent source of the mistaken designation, are wholly different in vocabulary, in structure, and in pronunciation; all that is common to them being a small number of Malayan words, useful but not essential, which have found their way into the languages of the Polynesians, but which exist also, although in smaller number, in the languages of the Negroes. Indeed, it may be added that the same Malayan words are to be found in the many tongues of the islanders of the Northern Pacific, although these tongues have nothing else in common with the languages of the Negro or Polynesian people of the Southern Pacific.

Except by disregarding patent facts, and drawing without stint on the imagination, it is impossible to show that any of the races of man within the Malay and Philippine Archipelagos and the islands of the Pacific Ocean are other than the aborigines of the lands in which we now find them. There is no evidence to show that any of them were stranger-invaders. In the few instances in which foreigners have intruded themselves, their presence is traceable, sometimes historically, but more frequently and even more satisfactorily through the evidence of language, as in the cases of the Hindus and Arabs in the Malayan Archipelago, of the Malays in the islands of the Pacific and in Madagascar, of the Spaniards in the Philippines, and even of the English in the islands of the Pacific.

From the facts stated in this and the previous paper on the Occidental Negro, the conclusion seems to me inevitable that the Negro races, of whatever kind and wherever found, are inferior to all the other races of man in juxtaposition to them. In Africa they are inferior to the Mauritanian, the Egyptian, the Nubian, the Arab, and the Hindu settler. In the Malay Peninsula, in the Philippines, and in New Guinea they are far below the Malay, and in the isles of the Pacific invariably below the brown straight-haired Polynesians. It is his mental inferiority that makes the Negro everywhere liable to be domineered over or enslaved. On this account the Papuan is enslaved by the Malay, as the African Negro is by the Arab or the European.

## XIX.—*On a Discovery of Flint Arrowheads and other Stone Implements at Little Salisbury Hill, near Bath.* By JOHN EVANS, Esq., F.R.S., F.S.A.

[*Read Dec. 27th*, 1864.]

ON the occasion of the late meeting of the British Association at Bath, my attention was called to a paragraph in the "list of objects of interest in and around Bath" published in the *Bath Chronicle.* It ran as follows: "Little Solsbury Hill over Batheaston. Ancient earthworks not assignable to any precise date. Camden supposes the Saxons to have besieged Bath from this hill; numbers of flint arrows have been found here." I may observe, by the way, that this reference to Camden is not strictly correct, though the additions to the *Britannia* in Gough's edition, vol. i. p. 120, ed. 1806, contain the following passage derived from Collinson's *History of Somerset*, vol. i, p. 99. "On the north-west side of the village (Batheaston) rises Salisbury Hill, near 600 feet from the river, with an entrenchment of an almost circular shape, supposed to have been thrown up by the Saxons when they besieged Bath A.D. 577." Regardless, however, of the authority on which the camp on Salisbury Hill was considered to be Saxon, Mr. Lubbock, Mr. Galton and I were induced by the combined attractions of earthworks and flint arrows to pay it a visit.

We found it to be an isolated hill of Inferior Oolite and the Fuller's earth beds, capped with the great or Bath Oolite, which formed a horizontal plateau, some few acres in extent at the top, from whence a magnificent view over the city of Bath, the valley of the Avon and the surrounding country was obtained. The vallum which at one time would appear to have surrounded the plateau has in great part disappeared, and but slight traces of it remain. Immediately, however, on our arrival at the summit of the hill, we caught sight of a seam of black mould at the top of the cliff of a small quarry which had been worked in the side of the hill, and containing numerous mammalian bones and teeth, among which we recognised those of horse, ox and pig. There were also several pieces of rude pottery, some of them of ordinary red clay-ware, and others of more imperfectly burnt clay, containing numerous particles of calcareous matter—probably pounded shells, either recent or fossil—and similar in character to the ware of which was formed the urn found a few years ago at Nunney near Frome, containing ancient British coins of the first century of our era.

The plateau at the top of the hill appears to have been under cultivation for many years, and as some parts of it were fallow, we commenced a search for arrowheads or other objects in flint, which, as the natural soil contains no stones except Oolitic débris, would be sure to be readily found if present. Our search was rewarded by our finding a very large number of flint chippings and flakes of various sizes and different degrees of perfection, but mostly small and rude. We also found several cores or nuclei, and several short "thumb flints" or "scrapers," chipped at one end into a semicircular form, and one of them presenting an almost circular outline, about an inch and a quarter in diameter, Another flake worked to a rounded point at each end seems to have been used as a borer or "rimer." Another has a ground or polished surface on one side, showing that it has been chipped from off a polished celt. We also found the broken end of a polished flint celt about three quarters of an inch wide, with the edge rounded off and purposely made blunt. Of arrowheads in flint we found seven or eight specimens, two or three of them perfect, the others in a more or less broken condition. None of them appear to have been barbed, but they are all of the leaf-shape, though some of them are much more elongated than others. Some are chipped to an equally convex shape on each face, others are worked upon one of the faces only.

Besides the worked flints we found several other implements of stone which are worthy of being noticed. Of these, the most remarkable is a rounded pebble of hæmatitic iron ore, which was found by Mr. Lubbock, and which has several deep scorings upon it, as if it had been used for smoothing over a roughly chipped edge rather than for sharpening it. Similar scorings might however have been perhaps produced by grinding weapons whether of stone or metal to a point. At a late meeting of the Archæological Institute, the Hon. W. O. Stanley gave an account of a remarkable block of stone in one of the mountain passes of Caernarvonshire, which is known as the "Carreg-y-Saelhan," or "the stone of the arrows." It is a flat stone, nearly circular in form and about six feet over, with a number of straight scorings upon it from a quarter to half-an-inch deep; and these, according to tradition, were produced by the arrows and other weapons of the chieftains, who, on the commencement of war, were accustomed to sharpen them upon this rock. There is much probability of there being some truth in this tradition, and if so, the stone from Salisbury Hill, though so much smaller in size, may have been used for an analogous purpose. We also found a piece of green stone, which, as part of its surface appears to have been ground, may originally have formed part of a stone celt. The last purpose, however, to which it has been applied, is that of

a hammer, as both ends are considerably battered. A pebble of altered schist, which has split up through use, has also been employed in the same manner. Besides these, we found two stone implements of quartzite, presenting a rather singular character. They appear to have been formed originally from rounded pebbles which have been broken in the direction of their longest diameter into rudely-shaped quadrangular prisms with one end flattened and the other left with the original contour of the pebble. This rounded end of the prism has been subsequently worn or ground away in such a manner that a ridge, or very blunt edge, is left along its centre, and running nearly parallel to two sides of the prism. From the similarity of the two specimens, it is evident that there was some design in their being thus formed, but the purpose for which they were intended it is difficult to conjecture. They may *possibly* have been used in the manufacture of flint arrowheads and weapons, or even as corn-crushers.

The only other objects of interest which were found were a few small quartz pebbles, some of them broken, concerning which I am tempted to say a few words. In making flint flakes at the present day, for the purpose of the manufacture of gun-flints, the flint-knapper employs a hammer with a comparatively sharp, though rounded, point, so as to concentrate his blow upon a single spot, which forms the apex of the cone of percussion, the extension of which, through the block of flint, causes the separation of the flake from the matrix. But it has always been a question in my mind how, with no other resource than a rounded pebble for a hammer, flakes of moderate size could be struck off from a block of flint with any approach to certainty in their form. Theoretically, the impact of a spheroidal stone on a flat surface of flint, would be confined to a single point; but practically, a blow from a stone of sufficient weight to fracture the flint would be spread over a considerable surface, and flakes struck off by such means usually show a large and considerably truncated cone of percussion. There is moreover very great difficulty in directing the successive blows which are requisite for the formation of a single flake to the right spots. It had occurred to me, that in ancient times it was possible that some small and hard pebble had been applied as a "set" or punch to the proper place on the surface of the flint, and then have been struck with a stone or wooden hammer. By this means the blow could always be directed to the right spot, and the force of the impact concentrated in a small space. I have lately made trial of this process, and though not very successful, I find that by using a small quartz pebble as a set, the difficulty of producing flint flakes with only a stone or wooden hammer is materially

lessened. Of course the quartz pebbles get broken from time to time, and the ends get shattered, but this is precisely the appearance presented by some of those from Little Salisbury Hill. Whether they were originally used for such a purpose as that I have now suggested I will not attempt to determine, but the method I have described of making flint flakes is certainly one which *may* have been followed.

Neither will I attempt to assign any definite age for the objects we discovered, though we should probably be justified in referring them to the pre-Roman period, and may certainly claim for the first occupation of Little Salisbury Hill a date far earlier than those Saxon times to which Collinson has ascribed the encampment.

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## XX.—*Stonehenge; an attempt to explain the above Monument.* By Professor S. NILSSON, etc., etc.

[*Read June 13th*, 1865.]

DURING a visit to England last autumn for the purpose of attending the meeting of the British Association for the Advancement of Science at Bath, I had an opportunity of inspecting a monument, which for many reasons may be considered one of the most remarkable in Europe, viz., the celebrated Stonehenge, in Wiltshire.

As the monument in question must be referred to the same period of culture which I have lately treated in my work, *The Bronze Age*, and at the same time affords new and powerful evidence as to the correctness of the views which I have there advanced, I have considered myself bound to attempt an explanation of it, as connected with my recent publication, particularly as it would appear that in Sweden we have also formerly possessed a monument of a somewhat similar description.

Stonehenge is thirty-four miles distant from Bath, if we take the road which passes through the little town of Warminster. The aspect of the country, which at first appeared fertile and well wooded, became gradually more sterile, and we entered eventually upon a large deserted heath, Salisbury Plain, where no habitations were visible in the neighbourhood. The ground appeared broken in by considerable hollows and eminences. Having ascended one of the latter, Stonehenge was visible far off, above the horizon, and its dark grey gigantic masses became taller as we approached. No description is capable of imparting the impression experienced, when first standing alongside and beneath these colossal remains. Although evidently bearing the impress of the hand of man, their grotesque shape appears so extraordinary, that it is difficult to comprehend their signification. It is easily perceived, however, that they do not accord with the present condition of mankind, but must be referred to generations that have long ago vanished from the earth. Some of these mighty pillars of stone are still standing with their imposts upon them; some are in an inclined position, having been supported in their fall by smaller blocks; others are lying flat on the ground, the whole forming a mass of confused ruins, in which, at first inspection, no order or regularity is visible. There is something mystical

and solemn in these remains of the earliest ages—their origin and purpose have been variously accounted for, but none of these explanations have been generally deemed satisfactory.

Stonehenge was long attributed to the magic arts of Merlin, in the same manner as the cathedral of Lund in Sweden was supposed to be erected by Finn, the giant. This popular tradition expresses the wonder with which this gigantic monument was regarded. Inigo Jones supposes it to be a Roman temple; Dr. Charlton, physician to Charles II, is of opinion that it was erected by Alfred the Great; Dr. Gibson regards it as a British monument; John Aubrey and Dr. Stukeley in 1743 assume it to be a Druidical temple, in which latter opinion Dr. Smith and Mr. King in 1799 concur. Wansey, in 1796, supposes that it was erected in order to perpetuate the treachery of Hengist, who assassinated the British nobles near the spot about the year 450. It has also been considered as a monument raised by the Britons in memory of Boadicea; as a Danish monument, etc., etc. Mr. Browne, who has published a little work on Stonehenge, entitled *An Illustration of Stonehenge and Abury,* the seventh edition of which appeared in 1864, endeavours to refute the opinions of all his predecessors, and positively maintains that Stonehenge is an antediluvian work. Mr. Browne has also brought forward several arguments against the supposition of its being a Druidical temple, some of which are undoubtedly correct. He is also opposed to the opinion entertained by some, that Stonehenge is a work of the Phœnicians, because that people, according to his belief, never settled sufficiently long in the country to enable them to effect such an amazing work; and to prove that the Phœnicians never made any permanent settlement in England, he adduces that they have left behind "no remains whatever of a civil or domestic kind." It is, however, these two assertions, that we shall endeavour to investigate.

After so many and various endeavours to explain the monument in question, it may reasonably be considered as a rash and futile undertaking to engage upon a similar attempt, and to entertain the hope that upon mature and careful consideration it may in due course of time be found correct. I shall however proceed to make this attempt, but must previously express my conviction, that neither Stonehenge nor any other contemporary monument in Europe can be satisfactorily explained by means of their own remains. The thread of history is broken off, and offers us no guide; other sources of information must be sought out; monuments possessing in one or more respects similar peculiarities must be discovered and compared with each other, by which means they will serve to elucidate each other, and eventually spread a light over the whole. Whilst treating of Stone-

henge, I shall endeavour to employ the comparative method of investigation, with the view of ascertaining to what results it will lead us. I will in the first instance adduce indisputable *facts*, and derive from them, as far as I am able, logical deductions. Whatever has merely the appearance of *probability* will be offered as such, for the reader's decision, as to the value of the evidence it may contain.

Although the remains, as before mentioned, when first inspected, present an irregular assemblage of stones, the nature of the original structure becomes evident when closely examined. The older engravings which we possess are also of material assistance in forming a comprehensive view of the whole. Those which occur in the works of Inigo Jones, Camden, etc., show that the monument was then in a less ruinous condition than at present. With the assistance of these engravings, several more recent authors have inscribed in their works a representation of Stonehenge in its supposed original state.

It has been unanimously agreed, and cannot be questioned, that the structure in its original and complete condition formed a circular temple. The outer circle was composed of thirty upright stones about fourteen feet in height, varying with a breadth of from four to eight feet, and thickness from two and a half to six feet. They were all connected by means of horizontal imposts, each resting upon two of the supports, and united with them by a system of mortise and tenon joints. The extremities of the imposts present a somewhat zigzag outline, by which means they were able to retain a firmer hold of each other. This peculiar arrangement, and the very weight of the stones, would seem to guarantee them against destruction for thousands of years; but time, the all-destroyer, as the poet calls the power which crumbles the Pyramids to dust, has already partially demolished the gigantic Stonehenge. Even the hard sand-stone of which it is composed must gradually crumble when exposed to the variations of the seasons, and the supports in consequence eventually give way.

Although it is highly probable that some designs were originally carved upon the surface of the stones, all these would entirely have disappeared, for the same reason, viz., the action of the temperature. The figures carved upon the stones of the monuments at Newgrange and Dowth in Ireland, are still easily discernible, since, from their position, they are protected from the weather. The designs upon the stones of the monument at Kivik in Sweden were also plainly visible down to the year 1750, at which period the covering stones were removed. By inspecting the original drawings of the latter monument, it is easily perceived how indistinct these designs have become during

the last century, and had they stood exposed another hundred years to the action of the atmosphere, every trace of the carvings would undoubtedly have disappeared. At Stonehenge, therefore, we find no tracings of carvings upon the stones as upon the other monuments we have mentioned, which might serve as a guide to our investigation. We must consequently derive our explanation from other sources.

Within the outer circle of large stones, but outside the triliths, stands a portion of another circle of stones, some of which are entirely unhewn, of rude form, and from five to six feet in height. The next, and principal part of the structure, is composed of five triliths, each consisting of two upright stones, on which rested a third, united by two mortises on its under surface, with a corresponding tenon on the upper edge of each of its supporters. The first pair of triliths, next the entrance, was about sixteen feet high; the next pair about seventeen feet high, and the great trilith, facing the entrance, is about twenty-two feet high, without including the impost. The two uprights last mentioned are more carefully wrought, and present a more even surface than the others. This trilith, however, has fallen many years ago; it is one of its uprights, that in its fall has stood supported by one of the lower stones. Within the triliths is a row of smaller stones, of chiefly a rude obeliscal form, and within this row, rests upon the ground, a stone about sixteen feet in length by four in breadth; this has been called "the altar-stone," and it has been surmised that the ceremonies connected with the service of the temple were here performed.*

This temple was consequently of a circular form, and completely open towards the heavens. These are considered characteristic of structures connected with solar worship; the circular form representing the disc of the sun, and the open space above, enabling the priests daily to behold and celebrate the god whom they worshipped.

That Stonehenge was a temple devoted to solar worship, is also confirmed by the observation made upon the spot by Dr. Thurnam. At Midsummer, 1858, he had watched the rising of the sun from "the altar-stone" where he stood, when it was seen to rise precisely over the top of the isolated stone, which is ten feet high, and about 200 feet distant from the entrance to the temple, "apparently intended to direct the observation, at the summer solstice, to the point of the rising of the sun."

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* I am bound to mention that, in this description, I have chiefly followed the statements of Dr. Thurnam, who has published a short but excellent account of this monument, entitled "Stonehenge", being the report of a brief lecture on the spot.

But additional evidence may be adduced to favour the supposition that this temple was devoted to solar worship. I have enumerated several proofs in my work on *The Bronze Age*, that wherever traces of *solar worship* are discovered, they are found in connection with traces of *bronze culture.* For instance, upon the monument at Kivik in Sweden, we may observe upon the stones, the carved representations of bronze axes, as well as the symbolical image of the sun, in the shape of a cone or pyramid; in the barrow at Willfara in Sweden, in addition to bronze articles ornamented with spiral designs, was also found a sacrificial altar, evidently employed for solar worship. The numerous emblems carved upon the stones in the grottoes at Newgrange and Dowth in Ireland, equally attest the connection of solar worship with the bronze age, and I may finally observe, that the concentric markings upon the gravestones found in Northumberland, and described in the *Illustrated London News* of the 19th March, 1864, were by me, in *The Bronze Age*, at once attributed to sun-worshippers, and I was subsequently informed by Dr. Bruce of Newcastle, that articles of bronze, as well as flint, were found upon the spot. I would not wish it to be understood, on this account, that concentric designs are invariably associated with the *bronze age,* since they are frequently found upon articles belonging to the iron age; I would merely infer that they have originated during the bronze age, and been employed to symbolise the sun. They were subsequently merely ornamental, without any inner signification. Since all traces of solar worship in Scandinavia have invariably been found to be connected with the bronze age, it cannot fail to be of interest to scientific inquiry to examine whether Stonehenge is also to be referred to the same age. The remains of Stonehenge are situated not on the summit, but on the declivity of a hill, and surrounded with numerous barrows, to the amount of two or three hundred, so that the temple formed the centre of a great necropolis (Thurnam, p. 6). *In these tumuli, a large number of which have been opened, articles of bronze have invariably been exhumed,* in connection with articles of flint, but never of iron. We may therefore conclude that Stonehenge belongs to that period when bronze was employed for the weapons and implements in Western Europe, which conclusion affords additional proof that the temple was erected by sun-worshippers, and also attests the extreme antiquity of the structure,

It is highly probable that the monument was erected anterior to any burials that were performed in its neighbourhood; but if, as Dr. Thurnam conjectures, people of distinction alone were brought here to be interred, centuries must have elapsed before the graves could have increased to the present number—the most

recent of which, however, must be classed as belonging to the bronze age. But as it can scarcely be entertained, that the bronze age in England extended later than a few centuries before the Christian era, it follows that Stonehenge must be referred to a remote period of the age in question. This necropolis belonging to the bronze age, would therefore seem to me to prove, that the temple in its centre must undoubtedly have been erected long before the period of 100 B.C. which has been attributed to it.

Having, as I presume, established the conviction that Stonehenge was erected and employed by sun-worshippers, it remains to investigate in what manner their worship was performed. Stonehenge is generally supposed to be a monument from the time of the Druids, and connected with their religion. This is also Dr. Thurnam's opinion. The first question naturally arises, were the Druids sun-worshippers in the oldest and original sense of the word?

I must, in the first instance, be permitted to make a remark, which is not only applicable to Stonehenge, but to all monuments of extreme antiquity in Britain as well as Gaul, viz., that in those countries which the Romans conquered, where Roman civilisation was introduced, and the language of the natives became more or less mixed up with that of the conquerors, the greater part of traditions and customs, which even then were of ancient date, have been forgotten, since nothing was considered worthy of interest or handed down in writing to posterity by the Romans, except that which still was extant during the period of their dominion, when the Celtic races inhabited the country, and the religion was Druidical. Cannot we trace the reason for this, from the circumstance that whatever was of pre-Roman origin and profane description, was called Celtic; and whatever was connected with religion, Druidical, as if no earlier race or religion had existed prior to the Celts and Druidism? Such a supposition would evidently be absurd. If we wish to obtain the true interpretation of the most ancient monuments in Europe, we must, in my opinion, search for it in those countries, into which the Roman legions never penetrated, and where the old religious traditions are still extant among the people, for instance, in Ireland and Scandinavia. These countries were never visited by the Romans, and many of their primitive customs and traditions, as well as their language, have been preserved unchanged amongst the people. For this reason, I am of opinion, that if we wish to solve the dark problem of Stonehenge, the clue must be sought in corresponding monuments in Ireland, and perhaps in Scandinavia as well.

After these remarks, we shall proceed to inquire, whether a solar temple like Stonehenge could have been devoted to Druid-

ism, and whether, in fact, the Druids possessed any temples, properly so called. In order to pursue this inquiry, it will be necessary briefly to investigate the religious tenets of the Druids. Amongst the authors who have written upon this subject, and who were living at the period when Druidism was still an extant religion, are Julius Cæsar, Diodorus Siculus, the elder Pliny, and Pomponius Mela. We shall, in the first instance, consult Cæsar, who has written most fully upon the subject, and had the best opportunities of becoming acquainted with the doctrines of the Druids. In *Bell. Gall.*, l. vi, c. 13-18, it is stated that they impart instruction concerning the stars and their movements, the nature of things, the size of the world, and the power and influence of the immortal deities. Their chief doctrine is the immortality of the soul. The Druids possess a despotic power over the people, and they alone are permitted to perform all public and private sacrifices, where human victims are frequently offered up in order to appease the deities. *Mercury** is the god they chiefly worship; next to him they reverence Apollo, Mars, Juno, and Minerva. Apollo† is worshipped on account of his power in dispelling diseases.

The Druids assembled yearly, upon a stated time and consecrated spot in Gaul, situated, according to Cæsar, "in finibus Carnutum." This is referred by Dezobry and Barchelet, *Diction. de Biogr. et d'Hist.*, Paris, 1857, p. 838, to the neighbourhood of Chartres, to the south-west of Paris; by other authors, to Dreux, a little to the north of Chartres. It is probable that human sacrifices were here performed, but no other public feasts are mentioned. Generally speaking, the rites of the Druids appear to have been of a gloomy and mysterious description, performed in dark woods or caves; their priests were despotic and austere, but no mention is made of their possessing any temple devoted to the worship of the sun.

Diodorus Siculus, lib. v, c. 31, describes the Druids as the philosophers and priests of the Gauls, and says that they sacrificed human victims, but makes no mention of any Druidical temple.

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* The Druids are supposed to have called their supreme deity, the creator of all, *Esus;* vide "Hist. de France", par Bordier et Charlton, i, p. 6A. According to these authors, Apollo was considered a subordinate deity by the Druids.

† It is here to be observed, that the sun-god, Apollo, has descended to a lower class of deities. He is no longer here, as amongst the worshippers of Baal, the Lord of all. The retention of his name, however, bears testimony to the earlier existence of a more complete form of solar worship. When the worship of Baal was succeeded by Druidism, several traces of the old religion were retained in the new. This is always the case wherever an ancient faith has been subverted; and, in Scandinavia, traces of the worship of Baal may be still observed.

Pliny, lib. xvi, c. 95, describes the veneration in which they held the mistletoe and the oak on which it grows, and says they performed their religious rites in groves of oak, whence their name of Druids was derived. But Pliny makes no allusion to their temples, nor to their worship of the sun.

Pomponius Mela, lib. iii, c. 2, relates that they imparted their doctrines to their disciples in a cave or in remote forests, but nowhere is any mention made of temples, or solar worship.

We cannot prove upon the authority of those authors who were contemporary with Druidism, and acquainted with its tenets, that the Druids were sun-worshippers, or had temples dedicated to the sun; on the contrary, we find that they performed their religious rites in groves, and imparted the doctrines of their faith in secret grottoes. It follows that the once magnificent temple, now called Stonehenge, and which undoubtedly was devoted to solar worship, was not erected by the Druids, nor connected with their religion; besides which, the Britons in the time of the Druids were not sufficiently advanced in the arts of civilisation to erect so splendid an edifice, in the structure of which, if I am not mistaken, traces of oriental origin may be discerned. Vid. "The Ruins of Persepolis," in Niebuhr's *Reisebeschr.*, ii, p. 122, pl. xix, where several triliths occur, resembling those at Stonehenge; and which is the less surprising, when, as in the sequel we shall show, that the religious ceremonies were equally there celebrated in the oriental manner.

Since the sun temple at Stonehenge cannot have been a Druidical temple, we shall proceed to inquire, if sun-worshippers actually have existed here, and if traces of temples devoted to this worship are anywhere to be found. To guard against possible mistakes, we will commence our investigations in Syria, the oldest and most celebrated home for solar worship.

Herodian relates, l. v, c. 3, that in the town of Emesa in Phœnicia, was a temple dedicated to the sun. He mentions, that the sun, which in the Phœnician language, according to his authority, was called *Helœagabalus*, was chiefly worshipped by the natives, but also by the neighbouring satraps and kings. This temple is described as large and splendid, and valuable presents flowed annually into its treasury. Herodian particularly remarks that there was no image of the god made after the manner of the Greeks or Romans, but in its stead a large stone in the form of a cone. It was of a black colour, and was supposed to have fallen down from heaven; "they declare," he goes on to state, "that it is the image of the sun, and that it has not been formed by human hands."

Upon the once Phœnician island of Gozo, near Malta, there are also to be found the remains of a temple devoted to the wor-

ship of the sun, now called the giant's tower (torre tal giganti).* Like all the temples of the sun, it is situated on an eminence, surrounded by a circular wall formed of enormous blocks of stone piled up without any mortar; the diameter of the circle is about 125 feet, or rather more than the diameter of Stonehenge. It is most remarkable, that in this temple, there is also a conical or obeliscal stone, two feet and a half high and one foot in diameter, and evidently intended, like the stone in the temple of Emesa, as a symbol of the sun. A similar image is also carved upon one of the stones of the monument at Kivik in Sweden. The ancient sun-worshippers invariably represented their deity, whose rays spread life and fertility over the earth, under the shape of a cone or pyramid.

But we must not omit to mention another remarkable peculiarity in the giant's tower, in an apartment of which is a shallow circular concavity, imbedded in the floor, with a raised rim, resembling those which are met with in the catacombs of Citta Vecchia. Mr. Badger goes on to state, p. 300: "On the floor are two circular blocks, about four feet in diameter, with a low edge round the circumference." The author describes in the next page another grotto in Citta Vecchia where an exactly similar stone was found. As these stones, which are evidently fashioned by art, are invariably found in all temples connected with the worship of Baal, it cannot be doubted that they were used for some express purpose. The author states, that the remains of the temple at Gozo are of great antiquity, and attributed to the Phœnicians, the earliest settlers upon the island. This temple was also without a roof, like all the temples of the sun.

It cannot fail to impress us with astonishment, that in the extraordinary grottoes of Newgrange and Dowth, we shall meet with exactly similar circular blocks of stone upon the floors, with a low edge round the circumference, as in the catacombs of Malta; even the shallow concavity upon the floor of the giant's tower is also observable at Dowth. As these peculiar stones occur in Ireland as well, we must conclude that they have been used in the performance of the same religious rites as in Gozo—the rites of Baal. A conical stone, resembling those in the Phœnician temples of Emesa and Gozo, has also been found in the grottoes of Ireland. Sir William Wilde states, in *The Beauties of the Boyne*, p. 202: "a slender quarry-stone, five or six feet long, shaped like a pyramid," lay once upon the floor, but it has now disappeared.

We have consequently already discovered important affinities

* "Description of Malta and Gozo", by G. P. Badger, second edition, Valetta, 1851, p. 363.

existing between the temples of Emesa and Gozo and the caves in Ireland. The conical or obeliscal form of stone was particularly held in great veneration, and was never absent from temples devoted to solar worship. In the temple of Stonehenge these stones of a conical or obeliscal shape are also visible; they form an entire row within the triliths, and surround the altar, undoubtedly the most holy spot in the temple. There is, besides, a remarkable similarity in the construction of Stonehenge and Newgrange. Sir William Wilde remarks, p. 203: "Were we to strip the chamber and passage at Newgrange of the surrounding mould, to remove the domed portion of the cave, we should have presented to us a monument not unlike Stonehenge."

When in the year 1860 I visited Newgrange, I had not yet seen Stonehenge, but I remember that there were horizontal imposts upon the lofty, upright blocks of stone. It would prove of material interest to scientific inquiry, if any eminent English antiquary would investigate the structure of the remains at Newgrange as compared with those of Stonehenge.

Having traced the above affinities which exist in all solar temples, whether in Emesa or England, by which it appears they were connected with identical pagan rites, we shall endeavour to investigate whether these rites were actually performed in all, in the same manner.

We shall begin with a description of the religious ceremonies performed in the temple of Emesa, since we shall thus be enabled to form a tolerably complete idea of the manner in which the worship of Baal was celebrated in the country from which the faith was derived. Herodian relates, *Hist.*, l. v, c. 3, that when Heliogabalus (whom he denominates Helæagabalus) was priest of the temple of Baal at Emesa, he celebrated the festival of the sun-god according to the Phœnician manner, and conducted the singing and dancing troop to the music of flutes and various instruments, round the altar.

Heliogabalus, having attained the Imperial dignity, erected a splendid temple in Rome, sacred to his god, Baal (Herodian, l. v, c. 5), where he practised the religious rites in the same manner as at Emesa; and to the sound of music, with Phœnician women, beating drums and cymbals with their hands, led the dance round the altar. These ceremonies are characteristic of the worship of Baal, but the rites of the Druids were never performed in this manner.

The same author, Herodian, also relates, that Heliogabalus also erected a splendid temple in the suburbs of Rome, to which the emperor conducted in person the representation of the god, the conical stone. The festival of the god was celebrated in the same manner, in addition to which the emperor diverted the people

with theatrical representations and chariot races (ludi curiales et scenici); which latter circumstance the reader will be pleased to remember.

Our next endeavour will be to investigate in what manner the religious ceremonies were performed at Stonehenge, which structure we have already shown was a temple connected with solar worship. Stonehenge, as before stated, was of a circular form, and measuring from the outside of the arcade 100 feet in diameter, it was placed within a larger circle formed by a bank of earth, with a ditch outside, the remains of which are still visible. This outer circle undoubtedly formed the sacred precincts of the temple, and was probably planted with trees, forming the holy grove (τέμενος), which was usually an appendage to the temples.

The Greek author, Hecatæus, who lived in the fourth century B.C., describes one of these solar temples. He relates: "That in the ocean, opposite Celtica (Gaul), there is an island, not smaller than Sicily, and inhabited by the Hyperboreans; the soil is excellent, and the climate temperate. There is a beautiful grove sacred to Apollo (the sun-god Baal), and a splendid temple, of a circular form, and ornamented with many offerings." He states that these Hyperboreans were, from olden times, much devoted to the Greeks, particularly the Athenians and Delians. We are here reminded that the sun-god, Apollo, possessed a temple at Delos, where his oracle was held in great estimation. Hecatæus further relates, that some Greeks (from Delos) had visited the Hyperboreans, and presented valuable gifts to the temple; and that the Hyperborean, whom he calls Abaris, had travelled to Greece and renewed the old friendship and attachment with the Delians. I must here be permitted to make a slight pause. In the description of this island, Hecatæus undoubtedly designates England. It cannot therefore be disputed that it is in England we must search for the circular temple with the sacred grove dedicated to the worship of the sun.

It is supposed that Stonehenge or Abury are here alluded to. I have not inspected the latter, but have read a description and seen the plates of it in Mr. Long's *Abury Illustrated,* and I very much doubt that the double circular rows of stones which there occur, according to plates iv and v, could be entitled Ναὸς, by a Greek author; on the other hand, Stonehenge has undoubtedly been a real temple (Ναὸς), as well as a *ναὸς αξιόλογος*, a remarkable temple, as Hecatæus terms it. We must therefore either assume that the temple in question is Stonehenge, or that the entire description is a fable. But it is hardly to be presumed that the fable should so strongly coincide with the reality. Besides which, Herodotus, l. iv, c. 33, had mentioned, more than a hundred years before the time of Hecatæus, the friendship which

existed between the Hyperboreans and the Delians, and he speaks as well of the Hyperboreans, by the name of Abaris, who had come to Greece. But it is evident that Herodotus did not know where the country of the Hyperboreans was situated. The knowledge of Herodotus respecting the amber and tin trade, and in fact all that concerned the west of Europe, was equally vague and indistinct. Before we proceed further, I trust that the reader's conviction will lead him to infer, that the island alluded to by Hecatæus is England, and the circular temple Stonehenge.

We shall now proceed to investigate the religious ceremonies which were here observed, and which are also described by the same author. He states that they who chiefly celebrate the praise of the god daily are called the priests of Apollo, and that they sing his praises to the music of lutes. The priests undoubtedly danced round the altar stone, within the circle of the obeliscal stones, singing their hymns, and playing upon their lutes, although we find no mention of the dance in the fragments of Hecatæus which are extant. The priests of Baal—Apollo—invariably performed their religious rites with song, music, and dance; the songs and music are expressly named—but these were not the characteristics of the dark and awful rites of the Druids. The latter had certainly their bards, who sung the praises of the warriors, inciting them to acts of bravery, and commemorating the deeds of those fallen in battle, but I can nowhere discover that singing or dancing entered into their religious ceremonies.

Hence we must come to the conclusion, that 500 B.C. there existed a circular temple in Britain, in which the sun-god was worshipped in the same manner as Baal in the East, viz., with music and song, and that this temple was Stonehenge. It cannot fail to strike us with surprise, when we further discover, that the manner in which the festivals in honour of Baal were celebrated by Heliogabalus in Rome coincided in other respects with those performed at Stonehenge. We have seen that theatrical representations and *chariot races* were established at the temple of Baal in Rome for the diversion of the people. In the neighbourhood of Stonehenge there are evident vestiges of a spot marked out for similar purposes. The temple, according to the statement of Dr. Thurnam, who has also given a ground plan of the locality, "was approached on the north-east by an avenue, which bifurcated at a distance of about half a mile, one branch of it terminating near a very remarkable cursus or hippodrome, about a mile and three quarters in length. It is conjectured that within this cursus, horse and chariot races took place, and that it was devoted to the games of the people who erected Stonehenge;" or more probably, of those who assembled there for the purposes of religion. Hence, we observe that, in addition to the singing, music, and dancing

*within* the temple, the worshippers of Baal were provided with chariot races outside its precincts; at Stonehenge as well as in Rome, and probably at Emesa.

The worship of Baal in Canaan was performed in a similar manner, from the days of Moses and Joshua, with dance and song. In the First Book of Kings, c. 18, v. 22-40, it is stated, that the prophets of Baal leaped* upon the altar, and cried aloud (invoked) the name of their God, which, in accordance with their usual practice, signified that they sang hymns to his honour, and invoked his aid.

The feast of Baal was celebrated in the same manner in Ireland. On midsummer eve, bonfires were lighted on the hills, and dancing was kept up around them all the night. In the language of the country, these fires were called "Balsteni." Consequently the Canaanites and Irish equally denominated the sun-god Baal, and lighted fires on the hills, round which they danced, and through which they carried their children.

It is not to be conceived that a solar worship, so intimately agreeing in various details, could arise spontaneously of itself in so widely distant countries—it must have been imported from one country to another. If we turn to Scandinavia, we shall find that the same festival is celebrated there at the same period of the year; the god is, however, called Balder† instead of Baal, but the form of worship is exactly identical. There is every reason to believe that this festival was once generally celebrated in the whole of western Europe, but that it gradually disappeared in those countries where Druidism was in the ascendant, and where Roman civilisation obliterated the more ancient traditions. In Scandinavia, Druids or Druidism are unknown to the people; the rites of Baal-Balder are, on the contrary, not forgotten, they are even occasionally performed. We must therefore come to the conclusion that the worship of Baal, in Ireland as well as Scandinavia, must be derived from the east, since the striking affinities sufficiently prove its oriental origin.

Now it can hardly be questioned, that the remote dissemination of this religion must have been due to the trade which, in distant ages, was carried on between the east and the shores and islands of western Europe.

Dr. George Smith, in his excellent work, *The Cassiterides*, has demonstrated (p. 56) that the Phœnician tin-trade with England

* Professor Melin of Lund, has kindly communicated to me the following explanation of this passage. The word here rendered "leaped", literally signifies an undulating motion to and fro, during the dance. It follows that the prophets danced round the altar.

† The sun-god was denominated amongst various nations Baal, Balder, Bel, Belis, Belenus.

commenced *at least* 1200 B.C., and continued for upwards of a thousand years. The same author has also proved, that the Cassiterides of the ancients must be referred to Cornwall. This conclusion coincides with an article which we have lately read, on the mines of England, in which it is affirmed that the mines in Cornwall have been worked for upwards of three thousand years. These mining operations were unquestionably performed by the Phœnicians. Strabo, lib. iii, relates that, in ancient times, the Phœnicians were the only people who traded with the Cassiterides; that they pursued their journey by way of Gadeira (Cadiz), but kept secret their commercial intercourse. This trade was consequently carried on by sea, even from the earliest times, long before Gadeira became the emporium for the trade of the Mediterranean and the Western Ocean. It was pursued in the same manner, at all events, until the termination of the second Punic war, 200 B.C., when Spain was ceded to the Romans. Marseilles was founded 600 B.C., and appears to have commenced trading with the tin-country at an early date.*

It is, however, unquestionable that the Phœnicians, from the earliest period of their trading expeditions, not only reached Cornwall, but penetrated much further towards the north, as far as Denmark and the southern part of Sweden, from which sources they obtained their amber. It has generally been supposed, up to the present date, that they obtained their amber from the coasts of Prussia: but this supposition has been founded upon two mistakes. In the first place, Weilauff's admirable work on the amber trade of the north has not been sufficiently known, and the public has consequently ignored how great was the supply of this valuable article of trade on the Danish coasts, particularly in former days; secondly, the statement of Pliny has been passed unheeded, that it was not until the reign of Nero that amber was obtained from the Prussian shores. I have treated this subject at greater length in the *Bronze Age*, p. 118-121.

I have already mentioned that Dr. Smith, in *The Cassiterides*, has proved that the Phœnicians traded with England for tin for upwards of a thousand years; yet the same author, p. 2, has affirmed, "that these very Phœnicians have not left behind them a single literary or monumental vestige of their presence in England." Several authors have entertained the same opinion. Amongst others, my friend John Evans has stated, in his masterly work *The Coins of the Ancient Britons*, "that the Phœnician trade with Britain seems entirely to have been confined to

* Bochart asserts, in his "Geographia Sacra", p. 220, that it was first called Baret-anac, the tin or lead country, by the Phœnicians, which by degrees became converted into Brettanikus.

barter, since no traces of their presence in the country have as yet been discovered." Another author affirms, that their stay in the country was not long enough to enable them to erect so stupendous a temple as that of Stonehenge.

These authors consequently maintain, that the Phœnician trade with England was confined to barter, which was carried on during occasional voyages. These conclusions merit a closer investigation, because, if the Phœnicians merely visited England as travellers, it follows that they also pursued the same system of barter in the various localities on the Western Ocean which they visited.

Such a commercial system is, however, in direct variance with the manner in which we know from history that they pursued their trade, as long as it was confined to the Mediterranean. For there they gradually took possession of extensive tracts of country and entire islands, and founded colonies in such places as were found suitable for their trade or mining operations. It is difficult to suppose that they would adopt an entirely different system for their commercial enterprise on the Western Ocean. It may also be questioned, whether it was possible for them to carry on their trade from Tyre with so widely distant places as England and Scandinavia, without the assistance of numerous settlements. We must also bear in mind that every state which has attained wealth and power by means of navigation and commerce, has always been indebted to colonies for this preeminence. There cannot, therefore, be any reason for supposing that the Phœnicians pursued a totally different system in their trading operations with the west of Europe. "But," it is affirmed "they have not left behind them a single trace of their presence in this country."

This appears to be the knotty point, which we shall endeavour to investigate—and resolve. We must first inquire, what kind of vestiges we may expect to discover from distant ages, extending back from 2000 to 3500 years, supposing the Phœnicians to have been settled in the country for any length of time. We cannot expect to discover any traces of their habitations. These were probably made of wood, or other perishable materials. Stone houses were first erected at a much later period. We cannot expect to discover Semitic words in the language of the country, since, according to Ernest Renan, *Hist. des langues Semitiques,* p. 196, all traces of the Phœnician language have disappeared in Phœnicia itself, nor can any traces of it be discovered in the Maltese language. Local names which have reference to their religion are however still extant; they are numerous in Ireland, some occur still in Scandinavia, and I presume they are to be found in England.

It has further been said that, supposing the Phœnicians had a settlement in England, we should discover some literary vestiges of their presence. This objection is perfectly unfounded. In Massilia, where they built temples to Baal and Diana, no Phœnician inscription was discovered until a recent period; and a Phœnician inscription has only very recently been found in Sardinia, although this island was so long in their possession. No inscription has hitherto been found in Malta. On the other hand, two have already been found in England; one in Aberdeenshire, deciphered by Dr. Mill, *The Report of the British Association for the Advancement of Science,* Cambridge, 1862, p. 147;* the other, an oval chalcedony (or cornelian) was found at Dundrum near Dublin, and is now preserved in the British Museum; it has been deciphered by Mr. Coxe. The remains, that we may reasonably expect to meet with in those countries, where the Phœnicians made a protracted stay, are naturally those of an enduring nature, calculated to resist the ravages of time, and connected with their religion, such as, 1. *Religious monuments;* 2. *Religious traditions among the people;* and 3. *Ancient graves, with the weapons and ornaments which they contain.* We shall proceed to inquire, whether any such remains of Phœnician origin can be discovered. We must therefore direct our investigations to other monuments which occur.

They are composed of upright stones in various positions, but generally forming a circle. They are of frequent occurrence in Britain and Gaul, and are there supposed to have been Druidical temples, or connected with the religious rites of Druidism. Monuments of another description are formed by three or five upright stones, placed closer together, and supporting a larger block of stone; these are called Druidical altars, and are supposed to have been erected by the Celts. If we open a work with plates of the pre-Roman antiquities in Britain and Gaul, we shall invariably find them denominated "Celtic monuments,—monuments Celtiques," and the same term is indiscriminately applied, alike to the remains from the stone, or the bronze age. We must endeavour to inquire whether this appellation has been correctly applied. Exactly similar circles formed of upright stones, which in England are invariably supposed to be connected with Druidism, are found in many countries where Druidism has never existed, and where the name of Druids is unknown; for instance, in the whole of Scandinavia. We possess also

[* Prof. Nilsson appears to be unaware that the pretended Phœnician inscription brought forward at Cambridge was shown to be a Latin inscription of the post-Roman period. The chalcedony said to have been found at Dundrum is probably no more to the purpose.—ED.]

specimens of that form of monument, called in England Druidical altars — they are called Dös or Dyss; and they occur as well in widely remote countries. Since the above was written, my friend Dr. Thurnam has referred me to what he has further imparted upon this subject, in the fourth and fifth decades of the *Crania Britannica,* under the title of "Historical Ethnology of Britain;" but I regret to say, that the result of my investigations of the above work does not permit me to come to the same conclusions as my esteemed friend.

Dr. Thurnam remarks, p. 122, that circles of large stones, like those which we find in England, were employed as places of assembly and for religious purposes from the earliest period, prior to the erection of temples. He refers to several passages where they are mentioned in the Old Testament, and mentions in a note, that the vale of Bethel is even now covered with stones and rocks, some of which are in an upright position, like the Druidical monuments called cromlechs. Dr. Thurnam states, that the altars, pillars, and groves of the Canaanites and neighbouring heathen nations, which the Jews were commanded to destroy, most likely resembled those which existed in their own holy places. Avenues of unhewn stones, compared by De Saulcy with Celtic dolmens, are still visible upon the hills of Moab.* *Dead Sea,* 1835, p. 546.

Mr. Stanley, *Sinai and Palestine,* p. 272, describes a circle of unhewn stones a few miles to the north of Tyre, to which the people had ascribed the same legend often met with here, that they were human beings transformed for their impiety to stone. Similar stone circles are also referred to in ancient Greece; for instance, at Hermione, where stood a temple dedicated to Ceres, and where within a circle of huge stones the mysterious rites of Demeter were celebrated. In the description of the shield of Achilles, *Iliad,* xviii, 504, it is stated how the old men sat down to judgment within a circle of hewn stones.

Having now ascertained that monuments of an exactly identical description with those which are called Celtic or Druidical in England, occur in countries where neither Celts nor Druids ever existed, it surely is palpable, that these English monuments *may* be attributed to a people and a religion unconnected with the Celts and Druidism. Will it not be admitted, that it at least is *probable,* that these ancient monuments, which more from *habit* than any sufficient reason, have been denominated Celtic or Druidical, may upon closer investigation be found to be Phœ-

* These monuments were erected in honour of Chemosh, the god of the Moabites, supposed to be identical with Baal-Peor or Moloch, but in either case bearing a close affinity to the Phœnician Baal.

nician, and connected with the rites of Baal, like their congeners at Tyre and in the valley of Bethel? This would seem the more probable, as Dr. Thurnam asserts that several of these monuments evidently bear an impress of their oriental origin. He states, that the avenues formed by parallel rows of stones, near many of these sacred circles, must be compared with the dromes of Sphinxes near the Egyptian temples, or the avenues of pillars and other viæ sacræ, which formed the approach to some of the temples in Greece and Syria. Dr. Thurnam mentions the viæ sacræ at Eleusis and Paphos, and the avenues conducting to the temple of the Syrian sun-god in Gerasa, Palmyra. Besides these remains from the East, Dr. Thurnam also quotes the statement of Artemidorus in Strabo, iv, c. 4, that there was an island near Britain were the sacred rites of Demeter and Proserpine were celebrated in the same manner as in Samothrace. These were performed by the Cabiri, and were of Semitic origin. The ceremony which was there observed of putting out all the fires, and not allowing any on the island to be lighted until the purified light was distributed by the priests, was also observed in Ireland. Several other customs—for instance, the orgies of the Bacchantes, even in a British island, bear evidence of a Semitic origin; and since many of these religious ceremonies have been so deeply implanted amongst the people of the west of Europe, that even now, after the lapse of thousands of years, they have not been completely eradicated, it must be admitted that they could not have been introduced by mere travellers, but by a Semitic people domiciled in the country. That many of these rites, which were characteristic of the worship of Baal—for instance, the bronze sickle, the mistletoe, etc.—became implanted upon Druidism, forms a proof that the more ancient worship of Baal was spread over the whole of Western Europe, and that Druidism is a younger form of that religion.*

I am inclined to believe, that Cæsar's information, which no doubt he derived from the Druids themselves, is correct; that their tenets (disciplina) were derived from Britain, and from thence propagated to Gaul. Rothe, in his work, *Om Druiderne, deres væsen och lære*, expressly states, that "*Druidism is peculiar to the British Islands and Gaul;* at all events, it is exclusively in these countries that these priests have borne the name of Druids, and that the name of Druid is unknown to the east of the Rhine."

It is difficult to decide *when* Druidism arose. As far as I am

* The names Baalsemen, the lord of heaven, and Belisama, the queen of heaven, have been found upon an inscription in the south of France. These names are certainly not Druidical.

aware, it is not alluded to by any ancient authors prior to the first century before Christ, and it is probable that it did not originate before the cessation of the intercourse between the East and the West, *i. e.*, two or three hundred years before Christ. I have inferred, that the younger form of religion, Druidism, is of European origin, and have endeavoured to prove that it is not of oriental, and certainly not of Semitic derivation. The Phœnicians and Hebrews, both of Semitic race, had many customs and ceremonies in common. They both equally abstained from the use of pork as food, for Herodian expressly states, l. v, c. 6, "Exceptis suibus, quibus ipse, ut mos est Phœnicibus, abstinebat," and the Hebrews were forbidden its use by the law of Moses. A lamb was considered equally by the Hebrews and Phœnicians as the proper victim for expiatory sacrifices,—hence the paschal lamb. Livy relates, l. xxi, c. 45, that when Hannibal had pitched his camp near Victumuli, he promised a reward to the soldiers, and in order that they should believe in his promise, he swore by the gods and sacrificed a lamb.

These ceremonies amongst the Romans and the Celts were very different. Previous to the battle between the Albans and the Romans, a preparatory sacrifice was made, when a hog was offered up by the priest. *Livy*, l. i, c. 5.

The Gauls, whose religion was Druidical, held the hog in great veneration, and bore an image of the wild boar upon their standards in battle. The Œstyi also wore upon their persons images of the wild boar, as connected with their religious worship. Hence, we perceive that a striking difference existed, not only in the nationality, but in the religion, of the worshippers of Baal and the Druids.

I am convinced that if we confine Druidism within its proper bounds, it will become evident to every unbiassed investigator that traces of a more ancient oriental form of worship, and monuments of an older date, than those connected with Druidism, must exist in England as well as in the other parts of Western Europe; or, in other words, *that there are many vestiges which prove that the Phœnicians had been long domiciled in the country.*

As yet we have merely discussed the question from one side, embracing the religious monuments and traditions amongst the people; the subject will become much clearer if we, in connection with these monuments at Stonehenge, Abury, Newgrange, etc., proceed to examine those articles of bronze which are *contemporary* with them. This bronze is neither of British nor Gallic origin—it is not even European. It is undoubtedly derived from the east, to which, from its ornamental designs, we can trace it back. I have treated this subject at length in *The Bronze Age,*

and will merely state that the most beautiful ornaments with their spiral designs, and the most beautiful swords with short hilts, are of the oldest date, and were consequently those which were first introduced amongst the people of the west of Europe, who were certainly not in a condition to admit the possibility of their fabricating these splendid articles. I cannot omit mentioning that, in Bateman's *Antiquities of Derbyshire*, it is stated, p. 10, that the natives of the country were supplied by the Phœnicians in the way of trade with weapons of bronze, which they subsequently were taught to fabricate. This statement is perfectly unfounded. The bronze-people never parted with their arms to the semi-savage natives, since these weapons are never found in their graves. There is a material difference between the graves of the bronze-people and those of the stone-people. Mr. Bateman has been led into this error from the circumstance of articles of stone having been found in the graves of the bronze-people; but as the bronze was very valuable, flint was employed by the bronze-people as well for arrow-heads, javelins, and other projectiles. The graves of the natives can at a glance be distinguished from those of the settlers.

I will, in conclusion, observe that Mr. Brown has very justly remarked that it would be absurd to attribute the erection of so magnificent a structure as Stonehenge to the semi-savage nomadic Britons; and that even an architect of the present day would hesitate in placing the monstrous transverse stone, weighing perhaps about seventeen tons, on the top of the two uprights of the great trilith.

The etymology of Stonehenge has been generally referred to the Anglo-Saxon. Dr. Thurnam admits that "there can be no doubt that the opinion of Dr. Guest, and of the late Mr. Kemble, the eminent Anglo-Saxon scholar, is the true one; namely, that the proper signification of the word was *the stone hanging places*, from their resemblance to a *gallows*." "This ignominious epithet," says Dr. Thurnam, "is a proof that the temple was not erected by the Saxons;" and it may perhaps be added that, at the period of their arrival in England, it was already of so remote antiquity, that all tradition as to its destination had been long forgotten. "These triliths, as well as their denomination *stone-gallows*, are, in an ethnological point of view, particularly interesting for us in Sweden, since we also possess an ancient monument called stone-gallows, namely, *Haborg's gallows*, on Osige plain, in the province of Halland, where may be seen the remains of two triliths."

## XXI.—*The Darien Indians.* By Dr. Cullen.

[*Read November 7th*, 1865.]

The Isthmus of Darien, which is separated from the Isthmus of Panama by a line drawn from Cape San Blas to the mouth of Chepo river, is covered throughout with dense forest, and is traversed by the Cordillera, which runs parallel to the Atlantic coast, at from three to six miles distance from it. The Atlantic coast of Darien extends from Boca Tarena, the most western mouth of the Atrato, to Cape San Blas, a distance of 157 miles. This coast, the islets and bays off it, and the country for about twenty miles towards the Pacific, are inhabited by an independent tribe called the Darien, San Blas, or Mandinga Indians. They call themselves Tule, a word signifying "people." Their small settlements, which are scattered at immense distances from each other, are situated on the sea-shore, on the banks of the rivers which fall into the Atlantic, and on the upper branches of those which run into the Pacific. They have always maintained their independence, and do not permit any official or citizen of the Republic of New Granada (now styled the United States of Colombia) to land on their territory; and they neither go themselves to the Pacific side of the isthmus, nor allow any of the natives of the Granadian villages on that side to cross over to the Atlantic. In 1850, they killed four negroes whom they caught fishing up Chiman river; and in 1852, they killed five negroes who had strayed too far towards the Atlantic on a hunting excursion. In 1854, they killed four sailors of H.M.. steamer *Virago*, who accompanied Commander Prevôst in his attempt to cross the isthmus; but, soon afterwards, the old men in council passed a law that, in future, they should kill no white man. I do not believe the whole Indian population exceeds 3,000 souls. In 1747, Governor Joaquin Valcarcel de Miranda calculated that there were 5,000 families; so that there has been a great falling off in the last hundred years.

The only inhabitants in the south of Darien are 1,300 Granadians, who are negroes and coloured people, and speak Spanish. Thus, strange to say, there are only 4,300 inhabitants, most of whom are savages, in a country 157 miles in length, with an average breadth of 60 miles, having a soil of amazing fertility, capable of yielding the most valuable products, and occupying the most commanding position for commerce, situated as it is

between the Atlantic and Pacific, with magnificent harbours on each, and at only eight days' distance by steam from New York, and eighteen from England. It seems still more strange when we reflect that the narrowest neck of land between the two oceans is there, and that there, also, the first settlement was made after the discovery of America—Santa Maria la Antigua del Darien having been the first town built on the American continent. Nevertheless, there is now neither path, track, trail, nor any way of transit across the Isthmus of Darien. Across the Isthmus of Panama there is a railroad, but except by that, there is no way of crossing from sea to sea.

The Darien Indians are a handsome race, of low stature, but stoutly built, with the copper-coloured skin, straight, coarse, black hair, and other characteristics of Red Indians. They live very peaceably together; are honest, cleanly, and industrious; occupying themselves in fishing, hunting, and cultivating plantains, cassava, cocoa (*theobroma cacao*), and a little sugar, cotton, and tobacco. They hunt deer, peccaris and sahinos, two species of wild hogs, wild turkeys, and monkeys, which they barbecue or dry over smoke. They are very expert at throwing the harpoon, and striking fish, manati, and turtle. They are good sailors, and some of them occasionally make voyages to Jamaica and the United States. They are accustomed to the use of fire-arms, but their principal weapons are spears and arrows. They have the woorali or curare poison which they get from the Indians of Chocó, and call *inà* and *corovà*. The arrows, which are very slender, and only a foot in length, have one end smeared with woorali, which has the appearance of extract of opium. When about to be used, a little silk cotton is wrapped round the other end, and the dart, which is of ebony-wood, is blown through a long tube, called borokēra; the deadly effect of a mere scratch is almost instantaneous. They never tell their names, and when one is asked "iki pe nookka" (what's your name?) he replies, "nookka chuli" (I have no name). They are, however, very fond of adopting English or Spanish names, and their principal traders have assumed the names of Shephard, Robinson, William, Denis, Jack Bragg, John Bull, Tom Dadd, Paterson, etc.

They place great faith in the divining powers of their leles or priests, who advise them in all important matters, and pretend to foretell events. Before delivering their oracles, these priests have their powwows, in which, like the pieiimans of the Caribesce and Arrowauks of Guiana, and the Sookias of the Mosquito territory, they howl, mutter invocations, and invoke all sorts of terrible animals, real and fabulous. They have a great dread of the small-pox, which is one of their reasons for not allowing foreigners to enter their country; but their principal reason is the idea that God made the country for them alone.

It is not unusual to meet with Albinos among them. At Perdon Island, off Cape San Blas, I saw three children, by the same father and mother, two of whom were Albinos, with very white skins, white hair and eyelashes, and the weakness of vision under which Albinos labour, owing to the absence of the uvea and consequent deficiency of the pigment of the iris. A moment's exposure to the sun was sufficient to redden their skins and make them smart so much as to oblige them to run back to the hut.

Their government is purely patriarchal; the oldest and most experienced man in each settlement being accounted chief by general consent, and universally looked up to and obeyed as such. The last chief of all the Indians was Calogwa, of Carti, in San Blas Bay, who was upwards of 100 years of age when he died a few years ago. An Indian named Robinson, who was twelve years in Washington, where he was educated by the late Daniel Webster, styled himself his Secretary of State.

They are very friendly to the English and Americans, but nevertheless will not permit them to land on the coast. When a vessel anchors, it is boarded by the Indians, who bring off their produce and do not allow the captain or crew to land. They carry on a considerable trade in cocoa-nuts, cocoa-nut oil, cocoa, carey or turtle-shell, cotton and grass hammocks, vegetable ivory, and canoes of calli-calli, a timber which stands wear and tear better than cedar or mahogany. They receive in exchange coloured calicoes, shirts, calico trowsers, looking-glasses, beads, cutlasses for cutting bush, hatchets, culinary utensils, guns, powder and shot, tobacco, rum, and brandy. A very profitable trade might be carried on with them in timbers, dye-woods, various gums and resins, and a very fine grass which they use for hemp and flax, and of which they make a beautiful and most durable kind of hammock. They will take no money in exchange for any of their commodities, nor will they sell gold dust, the Indians of the interior being strictly forbidden to bring down any to the coast. The trade is carried on by some schooners and sloops from Jamaica, Curaçoa, and Carthagena. Occasionally the *Abingdon*, or some other clipper from Baltimore, finds her way to the coast. The principal foreign traders are the brothers Abraham of Kingston, Jamaica, and Portobello; Captains Ramon Iglesias of Carthagena, and Richard Ellis of Curaçoa. Juan Seva of Carthagena, a native of Malaga, who traded with the Indians for twenty-six years and never once landed on the coast, died a few years ago; as also Zephyrino, Richard Marks, and Capt. Latham. The old Indians speak very highly of the late Capt. Shephard of San Juan de Nicaragua, who used to trade with them many years ago in his schooner, the *Mandeville*. There is a half Indian son of his at the mouth of the Tavena, a river a little east of the Tavena

mouth of the Atrato; his name is Zapatha, which is the Indian way of pronouncing Shephard.

Their language is very euphonious, as the following examples will show: How do you do?—Pe nuguetigua? Whence did your friends come?—Pe ayamala piya kartanigi? The tide is falling. —Ti mureti arreogali. When will the canoe come from down the river?—Ulo chana ulnonigi diba ti yalakari? My brother is in the bush hunting.—Angmechari wirchanati. Loose the sail. —Wur mola parmite. West wind.—Chagri puruaga.

The women wear gold nose-rings so large that they hang down below their mouths and must be raised up when they eat. They are diamond-shaped, cut at one of the angles to admit of their being put in and taken out, and weigh about a quarter of an ounce, being very thick. They drag down the septum of the nose considerably. Their necks, wrists, ankles, knees, and hips are adorned with glass beads, strings of coral, gold trinkets, tigers', sharks', and alligators' teeth, pieces of money, and a variety of miscellaneous articles. They sometimes bind their legs in two or three places with strips of cloth or withes of liana so tightly that the flesh is swelled out between the ligatures in an unsightly manner. On grand occasions they put on a cotton dress, and the men attire themselves in shirts and trowsers, but generally the entire dress of either sex consists of a narrow ayuca or lap, called *paneguiri*, round the loins.

In all my intercourse with this interesting tribe, I was invariably treated with the greatest kindness and hospitality, although the old men were strongly opposed to my project for cutting a canal across the Isthmus, notwithstanding that I represented to them that the line I proposed would not interfere with any of their settlements, as it would traverse a district entirely uninhabited.

As it is probable that, ere long, the survey of the Darien Canal line, from Caledonia Harbour to the Gulf of San Miguel, will be commenced, I take this opportunity of stating that any attempt to land on the coast without the permission of the Indians may be resented in a hostile manner, and that the Indians, if politely requested to give their consent, will not refuse. It must be understood that the independence of the Darien Indians has been recognised by the Republic of New Granada, whose claim to the Atlantic side of Darien is only nominal.

In conclusion, I beg to urge the justice of dealing with this fine race in all future transactions in a spirit of conciliation and friendship, and with the strictest integrity and honour. If they are treated with in a frank and sincere manner, they will offer no opposition to the construction of the canal.

## XXII.—*Notes on the Manners and Customs of the People about Little Popo, Bight of Benin.* By Captain LEVESON WILDMAN, R.N.

[*Read November 7th*, 1865.]

HAVING been obliged to remain on shore at Little Popo (an African town on the Bight of Benin) for some time, with peculiar facilities, from the nature of my duty, of observing and obtaining a knowledge of the laws, customs, etc., of the place, I made notes of what I thought would interest people in England.

The town, from its position on the shore of the sea to the south, and on the banks of a large and long lagoon on the north, ought to be, next to Lagos, the most important trading town between Cape St. Paul's and Cape Formosa; though, owing to wars, continued for years, but little trade has been carried on.

The people are the most cleanly I have seen in any part of the world, every man, woman, and child washing all over with native soap twice every day. Those who are rich do this at home, the poorer people at wells dug near the lagoon; the women and girls at wells kept for their use, and the men at others, or in the lagoon.

The women, when young, have beautiful figures, and, from carrying weights on their heads, are very upright. Until a girl is married, her dress is not extensive, as they merely wear one, two, or three rows of beads round their waists, above the hips, and a narrow strip of cloth, brought from the centre of the row of beads in front to the centre of the same behind. When married, they wear a cloth folded round the waist, reaching to the knees, and another cloth folded closely round the body under the arms, above the breast. The men, with the exception of the richer people, have a cloth wrapped round their waist, reaching to the knees, and another over and under the shoulders. This last cloth is always thrown off one shoulder when they meet a superior, as a mark of respect. They are all very much afraid of the Fetish charms and the Fetish priests, and are most superstitious.

The houses in the town are built on both sides of the lagoon, and are thatched two or three feet thick with dry grass and reeds, the thatching on the different houses nearly joining throughout the town. The sun dries this thatch like tinder, consequently fires are greatly feared. The following is a description of a very good specimen of a native gentleman's house: "In the centre is a large court, the ground being made hard with mud and sand

mixed; a long Fetish pole stands in the centre, and a small Fetish hut carefully thatched over. The court is formed by the house proper on one side, and opposite and parallel to this house is one of the same size; on the left side of the court is a small low cottage nearly joining both big houses, only leaving space enough between itself and the big houses to allow of doorways; on the right is a wall shutting the court out from the street; the principal entrance is in this wall."

The larger houses are one-storied, built of mud and sand, the walls very thick and whitewashed. The ground floor is invariably used as the family burying ground for the head of the house. A balcony runs round the first floor towards the court; the thatch projects eight or nine feet beyond the pillars, which on this side are carried up until they meet the thatch; this keeps the sun and rain out. On the other side there is no covering to the balcony. The rooms inside are three in number; one good sitting-room, with doors and windows opening on to both balconies, and two good bedrooms opening off the sitting-room; outside on the balcony is a smaller bedroom. In the sitting-room are two large French looking-glasses in black frames; the walls are quite smooth and whitewashed, ornamented with blue and black cornice and mouldings; the windows are closed by simple wooden shutters; the furniture consists of a sofa, some common chairs, a rocking-chair, and French dining-table. The bedrooms are whitewashed and decorated in the same way as the sitting-room; the beds, good, roomy, old fashioned four-posters, with neither top nor curtain (except musquito-curtains, if necessary).

This is, of course, a very favourable specimen of the native merchant's house; but all try to have them built separately round a court. When a man has only two houses, and two walls round his court, he lives in one, and his wives and their women in the other. When there are three or four houses round the court, he lives in one, his wives in another, and the other or others he gives to his unmarried sisters and brothers.

The head of the house is always buried in the ground floor; a grave is dug inside the large room which occupies all the lower part of the house. The head man's wife is also buried in the same place. The ceremony of burial is this, as the natives tell you: "big fellow" dies, his body is "dressed fine"; it is then put in a chair in his room; his feet put into a large brass pan. Two of his sons and two of his daughters, his eldest sister, and his nephew by her, are now told quietly to come. The native general of the district is also called. They all come to the house and see the body. Having examined it and seen that the "big fellow" has not been poisoned, they say, "Put him into the box." The box is made the length of the body, about three feet broad,

four feet high, with a round top fitted with hinges. The body is now put into the box. The sons and daughters give about ten dollars each; the nephew about eight dollars; the sister about twenty dollars; the native general sixteen dollars. This is all put into the box with the body. A decanter full of rum, a tumbler, a decanter of water, silk cloths, a round English hat, a long pipe filled with tobacco, a bottle of English lavender-water, a small looking-glass and comb, two or three silk handkerchiefs, two plates, a knife, fork, and spoon, are also put into the box. Each of the sons, daughters, his sister, and nephew, give silk cloths to cover the body.

A grave is dug in the lower room, and plastered round inside; half way up the grave bars are placed across. The box (or coffin) is rested on these bars, and covered over with a concrete of mud and sand. The room is cleared and cleaned, the windows shut, candles being kept lighted for about a week.

The following prayer is then said in the native language by the eldest sister, when the coffin is put into the ground: "Dear brother, well! to-day you have turned back from us, we cannot see you any more; you may go straight to God, you can know yourself whether you have done any bad against God. He will judge. I lived in the world with you, and do not think that you 'make any bad'; but if so, God will know it. If God take you, lay down quiet, it is all well; if any one poisoned you, send your spirit to take the man who did it away."

The sons and daughters all speak also much to the same effect. The nephew asks the dead man's spirit to intercede with God to keep all his family, of which he was the head when alive, from all bad ways.

The death is kept quiet for about four months, and is then made public, and "the customs" held. They are as follows: First day. Fire guns, drink rum. Second day. Early in the morning fire guns, relations dance and beat drum, calling out "drink plenty rum!" Third day. They rest. Fourth day. Fire gun, dance, beat drum, "drink plenty rum!" give away cloth. This continues for fifteen days. Sixteenth day. All the deceased's children wash and "dress fine", and carry the dead man's chair into the bush. All the people in the town are given powder, to be ready to fire muskets when the chair is brought back from the bush. One of the sons of the dead man is "dressed fine" and put into the chair, which is now brought into the house. All the people fire muskets and big cannon. Three tables are now laid for dinner; a bullock killed, goats, fowls, ducks, etc. The head men of the town are called. The head men take one table; the women, the second table; the dead man's sons, the third table. When they have all finished eating, they fill a tumbler half full of rum,

stand up, and cry aloud "Hip, hip, hurrah!"* "Who say?" (the dead man's name) "say!" Big guns are fired outside. They then sit down. Rum is now given away to every and any one.

An awning and room of silk cloth is made, with two men inside to watch, having with them rum; this they give to any one who comes. The awning remains up for two weeks.

When a "big man" dies, the brothers of "small men" who have died within about three years previous, all contribute to "the custom" of the "big man," powder, beasts, fowls, or whatever they can afford, and dress fine; their dead relations' children claiming "the custom" as for their brother as well as the "big man."

The criminal law is very simple, being very much like the old Hebrew law of "an eye for an eye, a tooth for a tooth." The head men of the town judge all cases of murder, whether by violence or poison; the latter is the most common. If a man or woman is found guilty of murder, he or she is killed by the same means as were employed in the murder; that is to say, if a knife or stick has been used, the culprit is so killed; if poison, he or she is poisoned. If the culprit runs away and cannot be found, his brother is executed instead. If a slave man runs away, having killed any one, his master is fined about one hundred dollars, or more if he is rich. If a free man steals, he is imprisoned. If a slave steals, he is flogged with a fish tail, the fish tail being about four feet long and four inches in diameter at the thick end, tapering at the other end, and covered with small and large excrescences like teeth, which cut the flesh to pieces; he gets about four dozen blows, when he becomes quite insensible, and his flesh without feeling; they then cut the flesh with small knives until the blood comes. Red and green peppers are now ground up with salt and well rubbed into the part previously operated upon with the fish tail. He is then sent to the plantations to work, and is not again allowed in the house. They told me that the thief when he has undergone this punishment, "feels um too much; pepper not a joke. He no steal again, master!"

Slaves are punished by their master without reference to the head men, and the masters are not responsible to any one concerning the punishment of their slaves. I doubt if the Cuban slaves who steal get such "pepper" as the African slave does from his own countrymen.

Wives who are unfaithful to their husbands are driven away

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* This is said in English. The reason they give for so doing is, that they hear that when "big fellow" in England have dinner, when it is finished, the guests all stand up and drink the host's health, saying, "Hip, hip, hurrah!"

from the house, if they are found out twice, and the sweetheart is fined. The first time the wife is tied up and then flogged with a small bamboo on the shoulders; the husband tells her mother that her daughter has been naughty, and been flogged, and that if she does it again she will be driven from the house after being well flogged. The second time, after the wife has been flogged and driven away, the "co-respondent" is taken to the head man, who acts as judge in Sir Cresswell Cresswell's court, and fined according to his means. If the naughty girl is a slave wife she is well flogged and put into prison, and her lover fined heavily.

When a man owes a large sum of money and cannot pay, all his family are pawned until the amount is paid. If he has no family, he is taken to the king (nominally over many towns) with twelve dollars. The king orders him to be buried in the ground in the bush with the earth stamped down all round him, just leaving his head out; a pot is put over his head at night. At daybreak it is removed and left off until the evening, when it is again put on. This is done until he is dead, which happens generally in four days if the sun is very hot, five or six days if cool. The turkey buzzards soon find out a man so buried, and circle round him for a little time, and then settle and devour the flesh from his head, first picking out his eyes. When a man is so punished, the creditor has no further claim on his family for the debt. If the debtor runs away, his family are seized by the creditor and kept until the debt is paid. In this case, the man's brother generally pawns his family (or slaves if he has any) and redeems them when he can get enough money to pay the debt. In the case of a slave who is held in pawn for a debt, dying, he or she is not buried, but placed on the top of a platform (two of which there are at the end of each town) made for the purpose; the body is left there, and the bones on the ground where they tumble to pieces, to allow the debtor to take "what belongs to him, if he should pay his debt." Fathers pawn children, husbands wives, and masters slaves; and if the debt is small, pawn themselves until it is paid. The burying alive, like all native laws and customs, is rigidly enforced. At Quitta it is a punishment for murder as well as for debt.

*Marriage.*—When a man wishes to get any girl as his wife, he sends a "dash" of two gallons of rum and a piece of cloth to the girl's family. If the girl is very young, she is left with her father and mother until old enough to be married. Every year cowries and cloths are given to the parents for the child. When she is old enough, the affianced husband buys different sorts of cloth and beads, according to his means, and two demi-johns of rum—these are given to the girl's mother. Also plenty of cloths of silk if he be rich, of cotton if he be poor, for the girl, who also

receives from her husband two bottles of lavender water, a comb, pomatum, and a sum of money, varying from eight dollars to twenty, according as the man is rich or poor. All the man's family give him presents, some a dollar, some many dollars; others a shilling, but all must by custom give something; his father gives eight or ten dollars. When these presents have been given, a "good day" (Saturday) is waited for. The girl is then in the evening taken to her husband, she is dressed in her finest silk cloths and scented in the most powerful manner with lavender; her mother and father accompany her to the husband's house.

In the morning (Sunday), very early, after the girl's father and mother have spoken to the new husband and wife, the girl is taken by her mother to her father's house to be washed and dressed. Guns are fired, and the man's family come to his house and drink his health in rum and palm wine, and then have breakfast, the girl returning to his house fresh dressed, washed, and scented. After breakfast, she is taken back to her mother's house, with a spirit case of rum; in the afternoon she returns, and all dance and sing. Rum is given away freely about four o'clock. The girl goes back to her mother to be well washed all over and scented; in the evening she is brought back to her husband's house, plenty of women coming with her; rum and cloth are given to these women, and they sing songs appropriate to the occasion. The girl is brought into her husband's room every night by a number of women for three days; then six women bring her for eight days; and the custom is then finished by the newly-made wife killing a goat and giving her husband a good dish of it. This is the end.

A man may have as many wives as he can afford to keep; a very rich man generally has about forty, a poor man about two or four; but directly any man gets money and fancies any girl, he marries her, no matter how many wives he may have at the time. A Portuguese named De Souza, who lived near Little Popo, had more than a hundred wives. When the first child (of all the wives) is four months old, it is taken to show to the man's relations, and they "dash" the child.

There are some very curious beads found in the bush near Little Popo, which are very much valued all over the West Coast of Africa. They are dug from the ground, and no one knows their real history. The natives believe that they "walk like snake; directly they see one, kill him, he break to pieces." When the hole is found where they live, the bush men dig in the ground and find plenty, dead and alive; they break up and sell them. There are two kinds, one yellow, one blue, the yellow one has different patterns. There is the large river snake with two

horns in his head; the natives say, "he have 'em in body." This is all my informant could tell me; he and all the people of Popo thoroughly believe this. The "coast people" in general deceive the "bush people," but with the Popo beads the case is reversed.

These beads are very curious. I can only think that they are old beads and have been buried for centuries; imitations have been tried in England and Germany, but they may be discovered at a glance even by an inexperienced white man who has only seen the real Little Popo bead a few times. The value of these beads is very great, being actually worth their weight in gold—but they are light.

## XXIII.—*Report on the Indian Tribes inhabiting the country in the vicinity of the 49th Parallel of North Latitude.* By CAPT. WILSON.

[*Read June 27th*, 1865.]

THE Indian tribes with which the Boundary Commission was chiefly brought into contact during the course of its operations on the 49th Parallel, may be classed under the three great heads of Cowitchan, Selish, and Kootenay; the Cowitchans being on the west of the Cascade Mountains, the Selish between the Cascade and Rocky Mountains, and the Kootenay on the western slope of the Rocky Mountains.

The Selish and Kootenay, or Indians of the interior, assimilate very much in manner and habit, and it may be as well before entering on a more detailed account of each to point out some of the more striking peculiarities which distinguish them from the Cowitchans or Indians of the coast. Many of these peculiarities, no doubt, arise from the nature of the country in which they live, but some would seem to point to an origin from a different race. The Coast Indians, including the various tribes from Sitka and Queen Charlotte's Island down to the Columbia River, appear to have come from Asia, and spread along the coast to the southward, not attempting to force their way over the more rugged passes of the Cascades, which present a far more effectual barrier to the spread of emigration from the west, than the Rocky Mountains, with their long even slope towards the Atlantic, do from the east. During the present century, and in the memory of many of the older officers of the Hudson's Bay Company, a Japanese vessel was wrecked on the coast of Washington territory, and as late as 1858 a Japanese vessel was found waterlogged some 200 miles off the coast of Vancouver Island and the crew brought into Esquimalt, proving the possibility of its being peopled in that way; besides which, there is the long chain of the Aleutian Islands connecting Asia with America. With regard to the Selish and Kootenay, or interior Indians, all their traditions, legends, and habits lead to the belief that they are the same race as the great tribes of Crees, Blackfeet, Crows, Sioux, etc., and a gradual westerly movement of the Indian tribes would naturally take place as the advance of the whites drove them from the sea-board. The range of the Cascade Mountains forms as marked a division of the native tribes of the far west, as it does of the fauna and climate. Besides difference of feature,

there are many customs amongst the coast tribes peculiar to themselves; such as the flattening of the head amongst the Cowitchans; the mode of burial of the dead in boxes or canoes, with the grotesquely carved tombs; and amongst the more northern Indians the not unfrequent burning of the dead body; the cannibalism of the Sabasses, etc.

One of the most difficult questions in the government of the new colonies, and one which has not yet received sufficient attention, is, "What is to be done with the Indians?" The American system of marking out reserves of ground for each tribe seems to be the best if it could be properly carried out; a certain sum of money is allowed for each reserve, and an agent appointed to regulate the expenditure, buy food, and instruct the Indians in the use of agricultural implements, etc.; but the Indian receives very little benefit from the large sums granted yearly by the central government at Washington, which in most cases find their way into the pockets of unscrupulous agents and contractors, an honest Indian agent being almost unknown in the western state of Oregon and Washington territory. In Vancouver Island and British Columbia, little has yet been done for the Indian; there are certainly a few regulations against the sale of spirits, but except in the neighbourhood of some of the larger towns they are a dead letter, and the small trader moves about with his poisonous compositions almost unheeded; many of the whites look with a sort of grim satisfaction for an easy solution of the question in the disappearance of the Indian, which is surely and rapidly taking place, hastened latterly by the ravages of that frightful scourge, the small-pox, of which Lieut. Palmer, R.E., in speaking of the Bella Coolas, at the date of his visit (July 1862) says:—"During my stay there, this disease (small-pox), which had only just broken out when I arrived, spread so rapidly, that in a week nearly all the healthy had scattered from the lodges and gone to encamp by families in the woods, only, it is to be feared, to carry away the seeds of infection and death in the blankets and other articles which they took with them. Numbers were dying each day; sick men and women were taken out into the woods and left with a blanket and two or three salmon to die by themselves and rot unburied; sick children were tied to trees, and naked, grey-haired medicine-men, hideously painted, howled and gesticulated night and day in front of the lodges in mad efforts to stay the progress of the disease."

Until 1860 little was done by the Protestant missionaries, amongst whom there seems to have been a want of energy, with the single exception of Mr. Duncan, whose noble exertions at Fort Simpson have been crowned with that success which they so well deserve; but during the last few years, schools have been estab-

lished at Victoria and elsewhere, under the auspices of Bishop Hills, who takes the greatest interest in the welfare of his native flock, and has infused a new spirit into the mission. The Roman Catholics have a well organised mission, long established in the country, and their priests have penetrated to the remotest tribes. Victoria is the head-quarters of the coast mission, and Cœur d'Alêne of the interior. One cannot but admire the constancy and devotedness of men who have given up the civilised world to spend twenty or thirty years buried in the wilds of Oregon and British Columbia, and regret that the result has not been greater; several of the priests at Cœur d'Alêne, who have spent nearly their whole lives amongst the Selish, speak the language with perfect fluency, and have had far more success in their noble efforts than their brethren on the coast, but still no such visible result has been obtained as that of the schools and model town of Mr. Duncan, at Met-lah-kah, near Fort Simpson.

Nothing strikes the traveller on the western coast of North America more than the wonderful diversity of language amongst the Indians; on Vancouver Island alone, there are no less than five distinct languages, besides dialects innumerable, and it is the same on the coast line. To obviate the inconvenience of this, the 'Chinook jargon' is usually spoken by the whites in all transactions with the natives, and it is not unfrequently used by the Indians of different tribes as a ready means of intercommunication. This jargon, consisting of words derived from the English, French Canadian, and Chinook proper, originated with the early traders at Astoria, and Vancouver, on the Columbia, but, gradually spreading over the whole country, and receiving new words from each tribe, it has now come into universal use, and may almost lay claim to the dignity of a separate language. A vocabulary of words, and a few sentences to show the usual style of composition are given, with a note of the language from which each word is derived, where traceable.

Small parties from many other tribes were occasionally met with during the progress of the commission. Whilst in winter quarters at Esquimalt, Vancouver Island, during the winters of 1858-59 and 1859-60, the Indians from the north visited Victoria in large numbers, but, though many interesting particulars were learnt about them from the officers of the Hudson's Bay Company, there was no opportunity of studying their character and habits; the highly interesting letters of Mr. Duncan to the Church Missionary Society give, however, a very vivid and faithful description of the strange customs of these tribes, and are well worthy of perusal. Chinooks, Walla Wallas, Sahaptins, Shoshones, or Snakes, Nez Percés, and Yakimas were met with on the journey to Colville *viâ* the Columbia River, but they were mostly in detached parties, and little could be learnt of their manners and customs.

## I.—COWITCHAN RACE.

The Cowitchans inhabit a portion of the east and south-east coasts of Vancouver Island, and the country in the vicinity of the forty-ninth parallel of north latitude from the sea to the Cascade Mountains. Of the numerous tribes into which they are divided the 'Cowitchan,' or parent stock, living on the Cowitchan River some distance to the north of Victoria, are the most powerful, their numbers being estimated at over 2,000; the other branches living on the island are the 'Sanetch' (600), on the Sanetch arm to the north of Victoria, the 'Tsaumas' (400) at Victoria, and the 'Clallams' and 'Sokes', together about 120, between Victoria and Soke harbour.* On the mainland are the Indians of Semiahmoo, a few miserable families, the 'Squohāmish' (200), at the mouth of Fraser River, the 'Quāltl,' or Fort Langley Indians (150), the 'Sumass' (100) on the Sumass River, the 'Chilukweyuk,' or 'Squahalitch' (200), on the Chilukweyuk River, and the Indians of 'Tskaus' (Fort Hope), and 'Hochalalp' (Fort Yale), making a rough total of 4,000.

*Personal Appearance.*—The Cowitchan tribes resemble each other greatly in appearance and habits, such differences as exist being principally due to locality and the means by which they obtain their living, especially noticeable in the Indians of Chilukweyuk, who hunt a great deal on foot, and, from constant exercise, are much more robust in appearance, and more manly and open-hearted in manner, than their brethren of Vancouver Island. The custom of flattening the head prevails amongst the tribes on the Island, and as far up the Fraser River as Fort Langley, but above this I do not remember seeing an Indian with a flattened skull, or an infant undergoing the process, a common sight in the neighbourhood of Esquimalt and Victoria.

The stature of the Cowitchans is diminutive, ranging from 5 ft. to 5 ft. 6 in., and occasionally to 5 ft. 7 in., or 5 ft. 8 in. amongst the more inland tribes; the women are from 5 in. to 6 in. shorter. The hair is either black or very dark brown, coarse, straight, and allowed to grow to its full length, either falling in one large mass over the neck and shoulders, or plaited and done up in tresses round the head. The faces of both sexes are generally broad, the forehead low, the eyes black, bright, and piercing, though generally small, and set in the head obliquely like the Tartar or Chinese, the nose broad and thick with large nostrils, the cheek-bones high and prominent, the mouth large and wide, with thick lips, especially the under one, and the teeth large and of a pearly white when

* This estimate was made in 1858-59, since which time the native population has greatly decreased.

young, but soon discoloured and worn down by the hard service they have to go through, masticating the tough dry salmon, which constitutes their principal food; indeed, so much is this the case, that most of the old women met with had their teeth worn down to a level with the gum. The Vancouver Island tribes have broad shoulders and good chests, but the lower part of their bodies is much deformed, the legs being small, crooked, and weak, with thick ancles, arising from their spending the greater part of their lives squatting on their calves in a canoe, which is the favourite and indeed almost the only means of locomotion made use of by these Indians; the women increase this deformity by binding tight bandages round the lower part of the leg. The Chiluweyuks are, however, an exception to this, having straight well formed legs, the result of their more active life, and excursions into the mountains in search of the bear and mountain goat. Usually, with the exception of the hair on the head, both sexes carefully eradicate every trace of hair from the body; but men are occasionally met with who encourage the growth of a small tuft or imperial on the chin. The complexion, when washed, is a dark olive, the colour of the face being deepened by exposure to a dark brown. It is very difficult to form a correct opinion on the age of an Indian from his appearance, as from the constant toil and drudgery of their lives they age very rapidly, the women especially, soon losing any pretentions they may have had to good looks; but I should say that few, if any of them, reach the age of sixty. The health of the young seems to be good, but as they grow older, they are much troubled with rheumatism and pulmonary complaints. The small-pox has commenced its ravages this year (1862), and the venereal disease, always prevalent amongst these Indians, has of late years increased to a frightful extent, threatening them with an end as rapid and complete as that of the large tribes who, thirty years ago, inhabited the district of the lower Columbia.

The intellect of the Cowitchans is of a low order, but they show great ingenuity in the manufacture of their nets, canoes, etc. Whether from fear or inclination, they were always honest in their dealings with the members of the commission, and though scattered in small parties over a large tract of country, presenting every opportunity for it, no case of theft by an Indian occurred during the eighteen months spent amongst them.

*Process of Flattening the Head.*—Amongst those Indians who flatten the head, the infant immediately after birth is placed in its cradle, which is an oblong trough of cedar, lined inside with moss or cedar-bark, well cleaned and pounded, so as to be as soft as wool. The child is placed flat on its back, the head slightly elevated by a small pillow, and the body covered with

moss, soft cloth, or skins; a padding of wool or feathers is then placed on the forehead, and over this a piece of cedar-bark, which, having one end fastened to the end of the trough, and being firmly secured by strings tied to its sides and passing through holes in the side of the cradle, causes the padding to press on the forehead. The child is then bound into the cradle so that it cannot move hand or foot, and for about a year is only taken out for the necessaries of washing and exercise, the head being ever after completely flattened. In consequence of the pressure from the padding being so gradual, the process is supposed, and said by the Indians themselves, to be almost painless, though the appearance of the child, with its little eyes almost starting from the sockets, is so disgusting and indicative of pain, that it is difficult to believe in the absence of suffering. The flattening of the head is esteemed a mark of great beauty and also of being free born, slaves not being allowed to flatten the heads of their children unless adopted into the tribe.

*Education, or Life from Childhood to Manhood.*—The important process just described being successfully completed, the Indian infant, until it can walk, passes its life tightly bound up in a cradle of bark, which the mother carries about on her back in all her expeditions; when she is employed gathering roots or berries in the woods, the cradle is hung to the lower branches of some lofty pine or cedar; when busy in the lodge with awl or needle, a stout wand, firmly fixed into the ground, takes the place of the cedar branch; the cradle is suspended from the upper end, and a connecting string passes under the foot of the mother, with which she gives a rocking motion to the child, soothing it to sleep with some low monotonous chaunt. Now comes the brief but happy childhood, when the little boy and girl, unconscious of the years of toil and drudgery before them, trot along by the side of their mother into the woods for berries, or, ignorant of clothing, roll about in the mud and shallow water, whilst the careful parent fills her basket with clams and shell-fish for the evening meal; soon the boy breaks away from maternal control, and prowling among the bushes with piercing eye and cat-like step, his tiny bow and arrow in hand, wages war against the small birds which frequent the precincts of the camp; growing older and strong enough to wield the spear and paddle, he comes under his father's care, who instructs him in their use, and initiates him into the mysteries of hunting, fishing, and the manufacture of the various implements with which he is to obtain the necessaries of life. In this school the boy passes his years until that eventful period, when, at the age of seventeen or eighteen, he retires to the forest to fast and meditate before taking his place amongst the men of his tribe. Meanwhile the girl is receiving her education; she, too, learns how to use the paddle, and in after life gives her hus-

band valuable assistance on his canoe journeys; besides which, her mother teaches her how to use the needle and awl, weave mats and blankets, dress skins, cut up and dry salmon, cook, cut firewood, etc., and accustoms her gradually to the heavy loads she will have to carry on her back when mated to one of the indolent lords of creation. In these duties the girl is employed till the age of fourteen or sixteen, when she arrives at her period of fasting and purification.

*Fasting Ceremony, etc.*—The fasting ceremony on entering manhood is one of the most interesting customs prevailing among the Cowitchans, and one on which it is very difficult to obtain correct information. The young man retires to the hills and fixes upon some spot convenient to water, in which to undergo the ordeal, and remains there as long as hunger will allow him, generally from three to five days. During this time frequent ablutions are performed, a fire is kept up, and no sleep allowed, which gradually weakens the nerves until he sees visions, in which his 'Tomanoas' (guardian spirit or medicine) appears to him, usually in the shape of some beast, fish, or bird, and predicts the course of his future life. This 'Tomanoas' is supposed to accompany the Indian in after life, guiding his actions for good or evil, and to it they address themselves in secret, never mentioning the name even to their nearest relations and friends. Returning to his village, half wild with the cravings of hunger, he seizes a knife, with which he rushes up and down, wounding all who come in his way, until, working himself into a state of frenzy, he sinks down exhausted, and is appropriated by the 'Tomanoas' or medicine-man of his tribe, who, with dismal howls and a chorus of sticks and paddles, proclaims him a man and a warrior. The young women do not seem to retire into the woods, but sit apart in the lodge, bathing frequently, fasting, and undergoing a general purification.

*Marriage.* There seems to be little marriage ceremony; the young man makes his choice, and, if approved of by the parents, a certain quantity of goods is paid down, on which the bride is led away by her future husband, whose absolute property she becomes. Once married, the man spends his time in hunting and fishing, or more frequently lying lazily in the sun gambling away wife and property, whilst the woman performs all the drudgery, dressing skins, cutting wood, cooking, erecting the summer lodges, and tending to the wants of her children.

*Polygamy.* Polygamy is not only allowed, but considered a mark of distinction; it is, however, only the wealthy chiefs who are able to purchase and support more than one wife, the poorer portion of the community seldom keeping more than one, who becomes their constant companion in all excursions. The number of wives seems to be altogether regulated by the wealth of the chiefs, and, though all inhabiting the same hut, there seems to be

little jealousy or fighting amongst the dusky inmates of the harem. It is probably owing to the prevalence of polygamy that these Indians seldom have more than two or three children, whilst the half-breeds are very prolific. Chastity may be almost said to be an unknown word amongst the Cowitchans, and abortion is said to be frequently procured, though with what truth I cannot say. The missionaries have the same trouble with polygamy here that they have in Southern Africa, and have effected little change for the better in this respect; for, on the few occasions on which Indians have been induced to put away their superfluous wives, they have abandoned the old and faithful companions of their lives, who are left to gain a living in the best way they can.

*Food, and the Means of procuring it.*—A great proportion of the food of these Indians consists of certain roots, which grow abundantly in most localities. The most noticeable of these are, the stalks of the wild parsnip and celery, eaten raw; the leaves of the dock and root of skunk weed, which are boiled; the young sprouts of the wild raspberry, which, when the outer skin is peeled off, have a very pleasant flavour; the cammas, ground and pressed into cakes for winter use; the roots of fern; the root of a species of rush or reed; and angelica. Of berries there are a great variety, the salmon berry, raspberry, blackberry, strawberry, cranberry, currant, gooseberry, red and black whortle or huckleberries, Oregon grape, sallad berry dried and pressed into cakes, and the berry of the Uva ursi, or 'kini kinik', which, though very dry and unpalatable, is roasted and eaten. Everything in the shape of animal food that can be procured is readily eaten, from bear or deer to eagle or magpie; but it is to the salmon and other fish that the Indian principally looks for his subsistence, and in catching these the greatest ingenuity is displayed.

Before leaving the subject of food, it may not be out of place to describe some of the means of procuring it. For hunting, the Hudson's Bay Company's common trade musket with flint lock has almost entirely superseded the bow and arrow, though nearly every Indian still has his bow of yew, about five feet long, and arrows tipped with bone or iron, in the use of which he is very expert. In shooting, the bow is held horizontally across the body. Pitfalls are occasionally used by the Chilukweyuks for catching bears, and the beaver-trap is in universal use for beavers, wolves, etc. Castor, kept in wooden phials, is much used in setting the bait, its pungent smell attracting the beaver. Across the entrance of small streams, or 'slues,' to which wild fowl resort, long poles are erected at certain intervals, between which nets are spread; at night, fires are lighted at the foot of the poles, which frightens the wild fowl, who, flying towards the light, come in contact with the nets and fall down to the ground, where

they fall an easy prey to the expectant Indian. When approaching wild fowl in a canoe, branches are placed in the bows, through which the Indian peers with his gun, seldom failing to approach within shot. On the coast of Vancouver Island the salmon appear in the greatest numbers during the months of August and September, and are caught with hook, spear, and net. Formerly a curious shaped hook was made out of wood, but the European one has now entirely superseded it. The lines are sometimes made of Fraser river hemp, but oftener of sea-weed, which is very strong, and grows to an immense length; when paddling in his canoe, the line is attached to the Indian's wrist, which gives a spinning motion to the bait as it passes through the water. The spears used are of two kinds; one consists of a long stick, with a fork at the bottom, having an iron spike in the centre; the other has a tip of iron or fish bone loosely bound on to a stick, and attached to it by a string, so that, when a fish is struck, the tip becomes disengaged from the stick, and the string allows plenty of play to the struggling salmon. The nets are made of Fraser river hemp, or fibre from the roots of the cedar; they are loaded at the bottom with round stones, about one pound weight, notched to prevent slipping, and buoyed at the top with blocks of cedar. This net is placed in the run of the salmon, which, either becoming entangled in the meshes, are drawn up and killed by a blow on the head with a stick, or speared by the Indian from his canoe, whilst checked in their course by the net. In October and November, herrings and a species of anchovy appear in great numbers; they are taken with a rake, or long stick armed with nails, which, being drawn through the water, catches the fish on the spikes, and at the same time gives impetus and direction to the canoe. The Indian disengages the fish by giving the rake a tap on the gunwhale of the canoe behind him. Dog fish are caught in great numbers with the pronged spear; and whales are occasionally caught about the entrance to the Straits of Fuca, with darts to which bladders are attached. Clams are obtained in great numbers nearly everywhere on the coast, and are cooked and opened by being piled in a large heap over heated stones, and the whole mass covered with sea-weed, which confines the steam generated by the water of the clams running down on the hot stones; they are thus rapidly cooked, and the shells easily opened, when the fish are taken out, strung on long wooden skewers, and hung up in the smoke of the lodge to dry. Razor fish and barnacles are also eaten, but are not found in such profusion as the highly-prized clam. Salmon in the Fraser river are taken with the scoop net, which consists of a pole twenty to twenty-five feet long, with a framework at the end to which the net is attached, so as to slide on the frame and close its mouth when a fish is

caught; a string leading from the net to the fisherman's hand keeping everything in position till the fish strikes the net. At certain points of the river, where the salmon are obliged to keep close to the bank in ascending, rough scaffolding is erected, projecting over the river, and at the end of this a frail platform of boards is made, on which the Indian stands to use his net, which he does by throwing it up stream as far as he can reach, and bringing it down swiftly with the current to meet the salmon running up. In this manner from fifteen to twenty salmon are frequently caught in an hour, during the height of the season. This method is also employed by the Indians at the dalles and cascades on the Columbia river, where a run is made with large stones when the water is low. Another, and more favourite method, is for two canoes to paddle along parallel to each other, having a rectangular-shaped net with a small purse stretched between them, which is hauled up directly a fish is felt to strike the net. When the salmon commence running in the smaller streams, they are caught by spearing, at weirs, which are made to intercept them. The process of drying and preserving is left to the women, who cut the heads off, split the salmon down the back, take out the backbone and entrails, and then hang them up in the sun to dry. The head and backbone are generally eaten at once, the dried fish being put away for winter use. The Indians never lay up more than barely sufficient to sustain them through the winter, and in years when there is a bad run of salmon, suffer greatly from want of food, being almost entirely dependent on this precarious supply. Sturgeon are caught in great numbers in Fraser river, sometimes with a hook and line, but oftener with the spear. A large hook or spear-head is fastened to the end of a long line, about the size of a large cod line, and then loosely fitted on a pole some twenty-five or thirty feet long. The Indian drifts slowly along with the current in his canoe, having the pole down in the water feeling for the fish, and, directly he feels him, strikes, quickly hauling in the pole and paying out the line; for the sturgeon, when struck, starts off with great speed, dragging the canoe along in his wake, requiring the most dextrous management on the part of the paddler to prevent a capsize. Directly the line slackens, it is hauled taut, and the fish is thus played until he becomes so exhausted that his head can be brought to the surface of the water near the canoe, where he speedily receives his quietus from a stout wooden cudgel which is applied to his head. The side of the canoe is now brought to a level with the water, and the Indian contrives to get the head of the sturgeon on the gunwale, when with a single jerk, though weighing 300 lbs., he is landed safely in the bottom of the canoe without any apparent difficulty. The head and roe of the sturgeon are most

esteemed. During the sturgeon season, the Indians of Chilukweyuk and Samass eagerly search for a peculiar kind of moth, which, when eaten, is believed to give good luck to fishermen. Salmon are sometimes caught by the process of feeling; but, in this case, the string from the hook is fastened to the pole. So expert are the natives in this mode of fishing, that they seldom or never make a mistake and get hold of one of the numerous logs with which the bottom of the river must be covered, instead of the fish.

*Clothing, Manufactures, etc.*—European clothing is now in general use; coats, trousers, shirts, and cloth caps for the men, and a dress of some common Manchester print for the women, with the universal blanket for both sexes. The hair frequently forms the only covering for the head; but the mushroom-shaped hat, of native manufacture, made of grass or twisted cedar bark, is still seen. The European blanket has now almost superseded the native one, which was made either from the hair of white dogs, kept and sheared for the purpose, from the wool of the mountain goat, or from small slips of cedar bark plaited together. The wool was dyed and woven into various patterns by the women. The women are sometimes slightly tattooed on the face and arms, and are fond of wearing brass rings on their fingers, wrists, and ankles, and strings of beads or dentalium round their necks; those on Vancouver Island sometimes wear a triangular piece of haliotis-shell in their noses, the cartilage being pierced for the purpose. Both sexes are fond of painting the face; vermilion seems to be the favourite colour, and with this the women usually paint the parting of the hair.

*Gambling, etc.*—The Cowitchans are great gamblers, blankets, canoes, and all their worldly possessions being staked in the excitement of the moment. They have two favourite games: one of these is played with a kind of dice made from the teeth of the beaver, which have figures engraved upon them, and are thrown out on a mat round which the players are seated; each figure seems to have a certain value, and the reckoning is kept with small pieces of stick, which are passed from one to the other as they gain or lose; in the other game, one man takes a small stone or stick, which he passes from one hand to the other with surprising dexterity, and according as the opponent discovers in which hand the stone is or not, he wins or loses. During the whole time a dismal chaunting and howling, accompanied by a beating of sticks, is kept up, which is frequently prolonged to a late hour at night, much to the disturbance of any one residing in the neighbourhood of the encampment.

*Medical Treatment.* A decoction made from the bark of the young hemlock, or of raspberry sprouts, is extensively used for

diarrhœa. Boiled nettle roots are applied as a poultice to sore ankles or joints, and the root of the wild liquorice is made into a kind of tea. A healing salve is made from pine gum and grease. Pulmonary complaints, intermittents, and rheumatism, seem to be the most prevailing complaints, and for these fasting and steam-baths are much in vogue, but their great faith is in the mummeries of the native doctor. When a patient is ill, his family assemble round him, and laying him on his back, commence a series of howls and chaunts, keeping time with two sticks which they carry in their hands. The medicine man or doctor, fantastically arrayed, leads the chaunt, and commences pommeling the patient's chest, blowing on his hands, and rolling him about to drive the disease out. If the sick man is strong enough to bear this rough treatment he recovers; but I fancy that most of the cases that come under the native doctors' hands prove fatal.

*Burial, Tombs, etc.*—When dead, the remains are generally wrapped in a blanket and deposited in canoes or boxes, in the crouched up position occupied during life. Bows, arrows, and other valuables, are buried with the deceased, and food is occasionally placed on the tomb. The relations go into mourning by cutting their hair, and keep up a constant howling for a few days, when all is finished, and the dead man's name is never willingly mentioned afterwards. The burial places are usually but a short distance from the village, the boxes containing the body being placed on the ground or supported by rough wooden legs. The tombs are decorated with strange wooden figures. The 'Tomanoas', or guardian spirit in the shape of a bird, beaver, bighorn, fish, figures of men and children, etc., are most frequently met with. In the human figures, the broad Mongol caste of the Indian face is very noticeable, and some of them are evidently of ancient date.

*Dwelling-houses, fixed and temporary.*—The Cowitchans have fixed places of residence, which they occasionally leave for fishing, hunting, &c., being absent for weeks at a time, as the 'Tsaumass,' 'Cowitchans,' and 'Sanetch,' who go to the island of San Juan and the mouth of Fraser River for salmon fishing. The villages are composed of several substantial wooden houses, and are sometimes, as at Sumass and other places on the Fraser River, enclosed by a stout palisading of young firs, some fifteen feet high, fixed firmly into the ground, with sufficient space between them to point a musket through; this is for protection against the ravages of the Northern Indians (Hydas, Shimpsians, Stickelms, etc.), who are much feared. On Vancouver Island the houses are built in the following manner: stout posts, eighteen feet in height, and varying in number according to the proposed length of the house, are driven into the ground. and their tops roughly hollowed to receive a long round pole, which extends

the whole length of the building; a similar row of posts five feet high is then erected parallel to and about twenty feet on one side of the first row: after which smaller pieces of timber, reaching from the higher to the lower ridge pole, are firmly tied down by stout cords of cedar bark, and, across these, small poles, similarly secured, are placed, completing the framework of the building. The roof is covered either with split cedar boards, or bark kept in place by poles stretched above it, and tied down to the rafters; the sides and ends are closed with large slabs of split cedar, having one end sunk into the ground, and the other secured to the framework with cedar cords. A small space is left open in the roof to serve as a chimney, and an opening in the side, just large enough to admit the body, forms the door. The Indians of Chilukweyuk and Sumass build their houses much more substantially, the uprights and ridges being of solid timber, of great weight and size, roughly squared, and the sheeting of the ends and sides of thick planks of split cedar. With the slight means and rude implements possessed by the builders, the erection of one of these houses is a work of great labour and time. The houses vary greatly in size, some being as much as 60 to 70 feet long by 20 to 25 feet broad. The Indian villages are always placed close to water, on some harbour or river, where the inmates have only to walk a few yards to launch their canoes, which when not in use are carefully drawn up on the bank, and covered with bushes to protect them from the rays of the sun. The outside of a village is the very acme of filth, and scents rivalling those of Cologne greet the nostril of the passer by, for all the refuse is thrown just outside the house, soon forming a large accumulation, of clam shells, old mats, rags, and the putrid entrails of salmon—added to which the Indian never moves more than five or six yards from his door for the purposes of nature. Nor is the interior of any of the buildings more enticing, for here the head of the visitor is constantly coming in contact with strings of clams, or the head, roe, and bodies of salmon, hung from the roof to dry and smoke, whilst the floor is littered with mats, blankets, etc., of no great cleanliness. The interior of many of the larger buildings is divided by rush mats, which enables several families to occupy the same house, and in the centre of each compartment is the small fire used for cooking, the smoke from which is allowed to find its own way through the roof. Round the sides of the house there is generally a rough bench elevated some 2 feet 6 inches from the ground, which serves as a bunk for sleeping and a shelf on which to stow mats, blankets, clothes, etc., the more valuable articles being carefully packed away in a huge wooden box, generally painted red and fancifully decorated with a number of brass headed nails. The buildings at Langley and Chilukweyuk are the

only ones on which there is any attempt at ornament, the former being adorned with some curious pictographs, in which a bird something like a crow figures conspicuously; the latter with some grotesque carvings, apparently representing tortoises, large snakes, and some animal of the crocodile type.

When on fishing excursions, the Indians invariably carry about with them a number of rush mats, which, with the aid of a few poles, are soon formed into a tolerably warm and comfortable house, with its little fire of bark in the middle. These temporary houses are of all sizes and shapes, according to the number of mats and people to be accommodated; but they always have a pent roof, approximating to the form of the wooden buildings, and never to that of the conical lodges east of the Cascades.

*Native Manufactures.*—The houses, canoes, and implements for war or the chase, are made by the men, whilst the weaving of mats, blankets, baskets, etc., is left to the women. For houses and canoes, the axe, a chisel made out of an old file, and a stone hammer, are used, the axe being only of recent introduction. In felling trees, great labour must have been expended before the introduction of iron, the stumps of trees felled many years ago having somewhat the appearance of those gnawed through by the beaver, but not nearly so cleanly cut. The nets are made of wild hemp or cedar fibre, the twine used being 'layed up' by rolling the fibre between the palm of the hand and the bare leg, and put by in hanks ready for use. The bow is generally made of yew, the string of sinew, laid on loose so as not to suffer from the effects of damp, and the arrow and spear are tipped with iron or jagged fish-bone. Iron pots and kettles have now taken the place of the old wooden ones, for culinary purposes; spoons are made of ash or horn, which is boiled or steamed, and whilst soft moulded into the required form; these are sometimes quaintly carved. Mats are made from the bulrush, which is gathered in summer, dried in the sun, and stored away till winter, when the mats are made; the rushes are cut to an even length, and are taken two at a time, the large end of one being placed with the small end of the other; these are fastened by a cord twisted round the ends, and so on till the desired length is attained, and on this framework the body of the mat is sewn in with a wooden needle. When completed, they look very neat, and throw off the rain well. Hats and baskets are woven by the women from grass or cedar root, and made so strong and compact as to hold water; they are sometimes adorned with patterns or devices worked in with grasses coloured by some native dye—red, obtained from the bark of the alder, is principally used. Blankets are made from the hair of dogs, which were formerly kept and regularly sheared for the purpose, but are now rapidly dying off; the wool or hair of the mountain goat is

also used for this work. The framework or ground of the blanket is made of strands of hemp or cedar fibre, and on this the hair is woven by the women; a great deal of coloured blanket is worked in with the dog or goat hair, forming the pattern, which is generally very simple.

*Means of Progression, Canoes, etc.*—The Cowitchans have no horses, and their only means of locomotion are by foot, which they are not very fond of, and by canoe, which in a country like that of the lower Fraser, where the forests are almost impenetrable from the dense underbrush, is by far the most convenient. The canoes of the Cowitchans range from fifteen to fifty feet in length, cut out of a single tree of fir or cedar, the largest size being capable of holding some twenty people: the upper edge of the gunwale is made to fold slightly outwards, so as to form a kind of rim which prevents the water from beating into the canoe; the paddles are from four and a half to five feet long, and one and a half inches thick for about one-third the length, when it widens and is hollowed and thinned on each side of the centre. The canoes of Fraser River, being only intended for use in smooth water, are built of a slightly different shape from those that have to encounter the waves of the open sea. Men and women are equally expert in the use of the paddle, and of great endurance; when exerting themselves against a strong current, they generally raise a low chaunt, to which time is kept by bringing the handle of the paddle down on the gunwale of the canoe with a sharp blow—the effect of this is very enlivening when creeping slowly up stream by the dreary banks of the Fraser. In ascending rapids the canoe is pushed forward by the 'sokten' or pole, in the use of which the men are very expert, forcing the canoe onwards and at the same time keeping the bow exactly in the current, a work of great difficulty, as, on the least deviation from the right direction, the head is swept round and the canoe brought broadside to the current. In making canoes, a suitable tree, generally of cedar, is first chosen, as near the water as possible, and cut down; it is then barked, cut to the required length, and the top squared with an axe, or split off by wedges, till the log is reduced to the requisite height. The bow and stern are now roughly hewn into shape, and enough of the heart cleared out to give facility in turning, when the log is turned over and the bottom roughly shaped with an axe. In this state, if water is close at hand, the canoe is launched and carried off to the village to be finished at leisure. Arrived at the village, the canoe is placed on its keel and the inside either chopped out with an axe or burnt out by a smouldering fire constantly watched to prevent its going too deep, the Indian occasionally feeling the sides with his hands to guide the thickness. Both outside and inside are now carefully smoothed off with a

chisel made out of an old file, and a stone hammer, a most tedious operation, which it takes many days to finish, but, though all done by the eye, when completed every part is so justly proportioned that it would require a very experienced eye to discover any defect. The smoothing off completed, the canoe is ready for stretching, which is done by nearly filling the canoe with water, into which stones, heated at a fire near at hand, are thrown; this renders the wood so supple that the centre can be stretched from six inches to a foot. To keep the swelling in shape, round thwart pieces, about three inches in circumference, stretching from side to side, with their ends secured to the side of the canoe by cedar withes, are used. The outside is then painted black, and the canoe is ready for use. The swelling is said to be sometimes produced by a small fire placed underneath the canoe. When split or cracked by the sun, the canoes are mended in a very ingenious manner; a little tow of soft cedar bark is pressed into the crack, and a piece of wood placed over it, holes are then made on either side, through which cedar withes are passed and pegged so that any strain serves to tighten the opening. The whole is finished off with a coating of pine gum.

*Slavery.*—Prisoners of war, when not decapitated, become the property of the victor, and are held in a state of bondage. The slaves are harshly treated by their masters, and in time of scarcity fare but badly; their hair is cut short, and their children are not allowed to undergo the process of flattening the head, except when adopted into the tribe, which occasionally takes place. Some of the Indians make a good deal of money by sending their slaves to work for the whites, and appropriating their wages. A Chilukweyuk Indian, whose slave was employed for several months by the Commission, pocketed a large sum in this way; the money was of course paid to the slave, but his master was always near at hand on pay-day to look after the dollars. Slaves are bought and sold amongst the Indians, and not unfrequently form the stake of the gambler; those who are good hunters, or fishermen, are the most highly valued.

*Language.*—Two vocabularies are given, one of the Cowitchan proper, kindly supplied by Mr. McKay, of the Hudson's Bay Company—the other, of the Fraser River dialect, collected at Wumass and Chilukweyuk in the year 1859. They are placed on the same sheet for comparison; the system of writing and spelling followed is that given in the 'Admiralty Manual,' under the heading 'Ethnology.' The sound is unpleasant and guttural, and there are a variety of 'clicks,' which cannot well be represented on paper, and very rarely acquired by Europeans who are otherwise proficient in the language. No grammar or rules for the arrangement of words could be traced. The letters (l) and (n) are

synonymous; at Langley either is used indifferently, on Vancouver Island the (n) is chiefly used, at Chilukweyuk the letter (l).

*Religion.*—The religion of these Indians, and their ideas about it, are now so confused and mixed up with the Christian doctrines and traditions they have learnt from the Roman Catholic priests, that it is very difficult to find out anything reliable about it, if there ever was anything to find out, which I am inclined to doubt, and think their state before the missionaries appeared was somewhat the same as the fetish worship of the Negroes of Central Africa. They appear to have had some vague idea of a great spirit, represented on the tombs as a large bird having some fantastic resemblance to an eagle, to whom they made offerings, and who showed his displeasure by thunder storms and lightning; and also, that the good would go to some place where they would find plenty of game, and spend their days in comfort, whilst the bad would suffer from hunger and the chilling blasts of winter. They are firm believers in ghosts, spirits, omens, etc., and are fond of relating fables and stories. Each tribe has its 'Tomanoas,' doctor, priest, juggler, or whatever he may be, who is believed to have great powers, including that of rain making. The missionary labours seem to have had little real effect; nearly every Indian wears a little Roman Catholic token, and some of them meet every morning and evening for matins and vespers, which they perform very creditably. The priests, however, from the length of time they have lived amongst them, and their unwearied exertions, in praise of which too much cannot be said, have obtained great influence over the Indians, which is always beneficially used, and they are universally liked and respected.

*Various.*—Blankets are now the current coin amongst the Cowitchans;* formerly it was the 'haiqua,' a species of dentalium found at Clayoquot, V. I., which is still very highly prized and made into belts or necklaces for the women. When blood is shed, it is generally made up by a present of blankets, etc., to the relatives of the deceased; but sometimes blood alone will atone, when some luckless slave is handed over to the tender mercies of the dead man's friends. The division of time commences with night; a journey is said to be so many sleeps or nights, and the year is divided by moons. There is a very ingenious mode of procuring fire by the friction of two sticks; one is a simple piece of wood with a flat surface—the other, a round piece of hard wood, in shape like a ruler, with one end sharpened; the point is placed in contact with the flat surface, and made to revolve quickly with the hands, which with skilful management soon produces sparks.

* The American dollar is fast driving the blanket out of the field as currency.

A curious custom prevails of meeting at certain times for what may be called 'blanket feasts,' on which occasions a great amount of property is given away, the donors expecting to receive similar presents on a future occasion ; guns and blankets are the favourite gifts. Tribes come from a considerable distance to these festivities, which last a couple of days ; dancing and all kinds of amusements are the order of the day, and every one seems bent on enjoying himself to the utmost. There seems to be no hereditary chiefs, and the nominal ones have little influence, except that due to superior wealth or cunning.

### II. SELISH RACE.

The Selish race inhabit the country between the Cascade and Rocky Mountains, in the vicinity and to the north and south of the 49th parallel of north latitude, with the exception of that portion watered by the Kootenay river. The various tribes are evidently offshoots of one parent stock, the 'Selish' or 'Flathead,' living at the western base of the Rocky Mountains, on the Bitter Root River, and the great southern bend of the Pend'Oreille River, or as it is sometimes called, Clark's Fork of the Columbia. They are said to number about 1,000. The other branches of the race are 'Shushwass' (400), near Fort Kamloops, Thompson's River ; the 'Okinagan' and 'Shimilkameen' (300), on the rivers of that name ; the 'Sweielpa' (100), at Colville, on the Columbia River ; the 'Sinuitskistux' (150), on the Lakes and upper portion of the Columbia River ; 'San Poils' (50), below the mouth of the Spokan River ; 'Spokani' (350), near the Falls of the Spokan ; 'Sketsui' or 'Cœur d'Alêne' (100), on the Cœur d'Alêne River and upper part of the Spokan ; and the 'Kalispelms' or 'Pend-Oreilles' (200), on the lower part of the Pend'Oreille River ; making a rough total of 2,750.

*Personal Appearance.*—These tribes resemble each other greatly in appearance, manners, and customs. The 'Selish' and 'Kalispelms,' however, have the highest character for bravery and all the virtues of a savage life, probably owing to their annual visits to the vast plains to the east of the Rocky Mountains, for the purpose of hunting the buffalo, and their almost constant warfare with their old enemies the Blackfeet, Crows, etc. The average height of the men is about 5 ft. 6 ins. or 5 ft. 7 ins., few exceeding the latter height, and the women are about six inches shorter. The hair is black or dark brown, coarse, straight, and grows to an extraordinary length ; there are various modes of dressing it ; sometimes it is allowed to fall down to its full length ; at others, a lock on each side of the head is confined in a brass keeper, whilst the remainder is put up in one or two long queues, bound round with beads or ribbon, and otherwise ornamented ;

other modes are to have the hair braided and falling down in long plaits, or to cut it short in front, leaving a row of stiff bristles, which, standing up from the forehead, give a peculiarly wild and savage appearance to the face. From exposure to the weather, the hair often turns to a russet brown colour; but the absence of grey hair, even amongst the very old men, is especially remarkable, very few instances of greyness having come under notice. Both sexes pluck the hair from every part of the body, for which purpose a pair of pincers is generally carried. The back of the head is generally flattened in infancy from contact with the back board of the cradle, but no artificial means are used to produce deformity. The face is oval, forehead higher than amongst the coast tribes, eyes black and bright, nose frequently aquiline amongst the men, but broad and thick in the women, cheek bones high and prominent, mouth large with thick lips, and the teeth large and good. The women often tattoo the under lips with thin blue lines. The toes turn inwards, and from constantly being on horseback, the legs are usually bowed. The senses of sight and hearing are highly developed. They are well-made, active, and capable of great endurance. The complexion is rather lighter than that of the Cowitchan. The men change little with age, but the women age early and rapidly; there were several Indians in the neighbourhood of Colville, who remembered the establishment of the first post on the Spokan (in 1811 or 1812), at which time they said they were young men; this would make them between sixty and seventy years of age. Diseases of the eye are very common, and cases of total and partial blindness were met with, but the Indians are generally healthy, and suffer little from the rheumatic affections so prevalent in the Fraser River country. The venereal disease, formerly almost unknown, was introduced by the United States troops when the Colville post was established in the autumn of 1859; and that, and the frequent use of ardent spirits had, by the spring of 1862, when the commission left, produced a marked change for the worse amongst the 'Spokans,' 'Sinuitskistux,' and 'Sweielps.' The intellect, though of no very high order, is decidedly superior to that of the coast tribes; Garry, a Spokan chief, educated by the Hudson's Bay Company at Red River, speaks and writes English with tolerable proficiency; but, during his life in the settlements, he seems to have picked up more of the vices than the virtues of the white man; he is an inveterate gambler, and fond of drinking, which failings have much lessened his influence amongst the men of his tribe, and caused the failure of Sir George Simpson's well meant scheme for spreading useful knowledge amongst the natives. Several of the leading men showed decided evidence of latent ability.

*Character, etc.*—Like all other Indians, the Selish race are in-

veterate gamblers; they are, however, brave, honest, polite, unobtrusive, and dutiful to their parents. No difficulty or disturbance arose during the eighteen months the commission spent amongst them, and parties of two or three used to travel about with perfect safety; yet many of these were the same tribes which had given the Americans so much trouble in the years 1857-58. In the former year, they succeeded in driving back a party of dragoons under Colonel Steptoe, but in the latter year were defeated by Colonel—now General—Wright, who is said to have destroyed 20,000 of their horses during the campaign. Though at present apparently subdued, the feeling of hostility against the Americans is still very strong, and there was much excitement when the San Juan affair of 1859 became known. On several occasions, whilst the commission was at Colville, serious disturbances were on the point of breaking out, and were only repressed by the influence of Mr. McDonald, of the Hudson's Bay Company, and some of the leading chiefs. At present they have lost heart, from the destruction of their horses and the want of ammunition; but before many years have passed, there will certainly be a last and severe struggle for existence, which must end, as all others have done, in the defeat and rapid destruction of the native tribes. The principal difficulty is to get the tribes to act in concert, and this was only overcome in 1857 by the wonderful tact and influence of Kamiakan, a Yakima chief, the prime mover and leader of the Oregon war. The chiefs have great influence over their own people; they are frequently hereditary, but not necessarily so, and are often men of considerable intellect and sagacity. In time of war, a younger man, of known abilities and courage, is generally chosen to lead the warriors to battle, but on his return he subsides into his usual position in the tribe.

*Childbirth.*—After childbirth, the women have to live apart for about thirty days, frequently washing themselves, and, before joining the others, they have to wash all their clothes and undergo general purification. A small lodge is erected about ten or twelve paces from the large or family one, and in this the woman lives during the period of her seclusion, which is kept with great strictness, notwithstanding the close proximity of her friends and relations. When the time of childbirth is felt to be approaching, the woman goes out and plucks a sprig of the wild rose, which she places upright in the ground of the lodge and fixes her eyes upon it during the pangs of labour, which, it is believed, are alleviated by this ceremony. The rattles of the rattlesnake are also frequently used as a medicine to procure ease in the same cases. It is very rarely, however, that any difficulty occurs, the woman being generally able to do everything for herself without assistance. In proof of the ease of birth, a well authenticated story may be

cited, in which a woman was taken in labour whilst escaping on horseback from the Blackfeet; hastily dismounting, she removed behind a bush and gave birth to a female child, at which moment some of her pursuers came up, but filled with admiration at the courage of a woman who could attempt an escape under such circumstances, with unexpected gallantry they allowed her to pursue her way; and after several days solitary travelling, she reached the camp of her tribe, with the baby wrapped in a shawl at her back, neither of them the worse for the hardships they had undergone.

*Infancy, etc.*—When a child is born, it is first laid on a heap of very soft moss or weed, which grows on the stones in the shallows of the Columbia river; it is of a brown colour, and is well dried and 'teased' before use. In putting an infant up in the cradle, the head rests on the back board, and each leg is wrapped up separately with moss, rags, etc.; the half-breeds, however, frequently allow the heads of their babies to swing free, and wrap the legs up together, having merely a piece of rag between the heels to prevent chafing. The flatness of the back of a full-grown Indian's head, and the peculiar shape of his legs, are probably in some measure due to the native mode of cradling. The cradle is adorned with various ornaments and medicines, or charms, such as beads, the legs, heads, etc., of birds or small animals, and at the top is invariably fastened a portion of the umbilical cord, which is cut off at birth, sewn up in a piece of cloth, and tastefully ornamented with beads. In travelling on foot, the cradle is carried on the mother's back; on horseback, it is hung to the high pommel of the saddle, a position which, if not agreeable to the child, is very convenient to the mother. The children seem to have few amusements, the only thing of this kind noticed being some urchins who were performing the part of horses, whilst others were placing miniature packs on their backs; they spend most of their time sprawling on the floor of the lodge amongst the pots and pans, occasionally rolling into the fire, when dreadful is the clamour that rises. As the boy grows up, he learns how to use the bow and arrow, and becomes cunning in horseflesh, and, when he can scarcely walk, may be seen galloping about on bare-backed horses. At the age of seventeen or eighteen he becomes a young man, and his great ambition is to be the possessor of a rifle, that he may join the chase. The girl learns all the duties of a woman from her mother, and at the age of fifteen or sixteen arrives at the menstrual period; at this time she retires to the hills, and must not look on the face of a man until all is over, and she has purified herself by washing. During this seclusion the girl fasts to a certain extent, and amuses herself by making small circles of stones on the ground, the origin of which could not be

discovered. At each course before marriage, nearly the same ceremony is performed, but after marriage it seems sufficient for the woman to keep apart in the lodge. There is no fasting rite for the young men similar to that of the Cowitchans, but each Indian, on entering manhood, fixes on some bird or animal, whose skill or courage he admires, and makes friends with and protects it, that he may become imbued with its good qualities; this animal he calls his 'medicine' or charm.

*Marriage.*—Marriage is contracted by consent of the bride's parents, to whom presents are given by the bridegroom, who receives an equivalent from the parents on his wedding-day. A large muster of relations and friends, to smoke and wish the young couple joy, seems the only ceremony. Polygamy does not exist amongst the 'Selish,' and the wives, when not in the neighbourhood of a white settlement, are faithful to their husbands and affectionate mothers. Many of the Indians are now regularly married by the priests according to the Roman Catholic rite.

*Food and the means of procuring it.*—The 'Selish', or Flathead, live principally on buffalo and other game, and they have an Indian agency established amongst them by the Americans, whose business it is to provide the means and teach them the way to raise corn, etc. The 'Kalispelms' and 'Spokans' also go to the buffalo plains, but a great proportion of their food is obtained from the salmon fishery at Colville, where in June, July, and part of August, they assemble with the 'Sketsui', 'Sweielps', and 'Sinuitokistux,' to lay up their winter stock. There are several kinds of roots eaten, of which the Cammass (Iathkwā), made into cakes of a not unpleasant flavour, is the best and most used. Of berries, that known as the 'service berry' is the most common, and is gathered in August and September, when it is dried in the sun and put up in mats for winter use. The wild cherry, and a small white berry of a very bitter taste, called by the natives 'steeχchūχ,' and growing on a bush something like the elder, are found in great quantities in some districts. Hips and haws, angelica, the seeds of the Oregon sunflower pounded into meal, and the berries of the kinnikinik, or 'uva ursi,' fried in grease, are also eaten. In times of great scarcity, a dark brown kind of moss, like horse-hair, is eaten. It is boiled for two or three days and nights until reduced to a white tasteless pulp, but does not seem to be very nutritious. The animal food consists of buffalo, bear, lynx, wolf, mountain goat, elk, caribou, deer, beaver, otter, squirrel, marmot, martin, etc., swan, goose, duck, grabe, grouse, etc., salmon, trout, and sucker. Buffalo, bear, deer, and other large game, are killed with the rifle, or, if the hunter is not fortunate enough to possess one of these, with the bow and arrow, in the use of which all are very expert. The rifle used is the common Hudson's Bay trade musket with

flint lock. The bows are from 3 ft. 2 in. to 3 ft. 5 in. long, about $1\frac{1}{4}$ in. broad, and $\frac{1}{2}$ in. thick, they seem to be made of no particular kind of wood, but are backed with sinew, covered with snake skin. This skin is fastened to the back of the bow with the best cement I ever met with, as it is not the least affected by heat, cold, or damp; it is made from the skin of the white salmon. The tips and grasp of the bow are bound round with sinew. The string is of sinew laid on loose so as to be twisted at pleasure according to temperature. The arrows are from 2 ft. 5 in. to 2 ft. 6 in. long, with a 10 in. feather, the point being generally of iron bound on with sinew. A scalping knife and a tomahawk generally form part of the hunter's equipment; the former is nothing but a good English butcher's knife, the latter a small hatchet with a pipe head at the back; they seem to be mostly made at Birmingham or in the eastern states of America. Great numbers of deer are killed in the winter, when the deep snow drives them from the hills to gain their living in the valleys; at the Spokan, the Indians make a large semi-circle of burnt appichemos, or skins, into which the deer are driven and fall an easy prey, their timidity preventing them from attempting to break the slight barrier in front. Beavers, otters, etc., are taken with the common beaver trap, and the martin with an ingenious native contrivance something like the figure-of-four trap, so as not to damage the fur. Squirrels and the smaller animals are only eaten in time of scarcity, when they are eagerly sought after; at Colville they were nearly exterminated during a severe winter. Salmon are taken in various ways during their run, the 'Okinagans' and 'Shimilkamans' get theirs from the Okinagan River, the 'Kalispelms', 'Spokans', 'Sketsui', 'Sweielps', and 'Sinnitskistux', from the Columbia and Spokan Rivers. At the Okinagan River a weir, constructed of slight willow wands, was found; which extended right across the stream, and at one end had an enclosure into which several openings were left; the remainder of the weir being nearly, if not quite, impassable, all salmon passing up the river found their way into a sort of 'cul-de-sac', where the Indians were busily engaged in spearing them. At the Kettle Falls of the Columbia and great Falls of the Spokan, salmon are caught in a large wicker basket, suspended from the rocks at one end of the falls, and projecting slightly into the water. At the foot of the rock there is an eddy, and the water coming down with less force at this point, the salmon here make their chief effort to leap the falls, the greater number, however, fail to clear the rock, many leap right into the basket, whilst others strike their noses against the rock and fall back helplessly into the trap below. Emptying the basket is a most exciting scene, two savages, with nothing but a loose wrapper round the loins, and armed with stout wooden bludgeons, jump into the frail structure,

which quivers with the struggling fish and falling water, and the work of slaughter commences. One blow on the head from their practised hands settles the account of each fish, which is then thrown out on the rocks and carried to the general heap, from which they are portioned out to the different families every evening by a man known as the 'salmon chief,' when the squaws take them in hand for splitting and drying. From 400 to 500 salmon are taken daily in this manner; the number of fish ascending the river is perfectly extraordinary, the water seems perfectly alive with them, and as many as a dozen have been counted in the air at one time. Some are seen to clear the falls at a single bound, whilst others, after struggling for a moment against the torrent, are carried back into the eddies to recruit their strength for another trial. At the junction of the Great and Little Spokan Rivers, an elaborate contrivance is made for catching the salmon on their way both up and down the stream; on their way up they are caught in a similar manner and by the same arrangement as that described as in use amongst the Okinagans and Shimilkameens; but, in addition to this, runs are made, with stones, through which the salmon have to pass on their way down, and at the end of these, which gradually contract, a small stage, slanting slightly upwards from the mouth of the run, is erected. The salmon coming down with the current is carried on to the stage, where he is speedily despatched by the attendant Indians. In the erection of these, runs, much ingenuity is shewn and considerable time and labour expended. Trout, suckers, etc., are taken with hook and line, or by a weir and basket trap; the latter was employed very successfully in a small stream at Sinyakatan on the Pend'Oreille river. Two barriers of willow wands were made across the stream, about five feet from each other, in both of which a hole was left for the fish to pass through, and the one in the upper barrier was made to lead into a large wicker basket somewhat of the mousetrap pattern, the fish having to squeeze its way in through a small hole which closed immediately behind it. The spear used has a detached head fastened to the pole by a piece of string, similar to that in use amongst the 'Cowitchans'. When the salmon are caught, they are laid on the rocks, the heat from which and the direct rays of the sun serve to loosen the skin; they are sometimes split and dried whole, but the more favourite way of curing, especially with those Indians who have to carry their salmon a long distance, is to strip the flesh from the bones, mash it and pound it as fine as possible, and then spread it out on mats to dry in the sun; three or four days usually accomplish this, and it is then put up in long baskets holding from seventy to eighty pounds, a convenient weight for packing on horseback.

During the fishing season the Indians live on the heads, hearts, and offal, which they string on sticks and roast over the fire, keeping the dried fish for winter use.

*Dress.*—The common dress of the men is a cotton shirt, a blanket or buffalo robe, reaching from head to foot, and fastened by a sash tied round the waist so that the upper half can be wrapped round the body in wet or cold, and in fine weather be allowed to fall over the legs like a long kilt, disclosing the finery of the striped cotton shirt, breech clouts of blanketing, richly ornamented leggings, and elk skin moccasins. Caps, coats, and trousers, of European manufacture, are often worn by the chiefs and dandies, as also leathern hunting shirts and trousers. The women, when not able to obtain European clothing, wear leathern dresses, with long fringes, leggings, and moccasins. The claws of the grizzly bear are worn round the neck of a successful hunter, and the favoured lover adorns the fringe of his hunting shirt with a long tress of his lady's hair. The women wear armlets and rings, and strings of hawk bells, large beads, or thick rolls of small beads, round the neck. The leathern dresses, leggings, and moccasins, are made by the women, and are tastefully decorated with beads, or flowers worked in with silk, The leather used is also prepared by the women, and in the following manner: immediately after the elk or deer is killed, the hair is scraped off, and the skin stretched tightly on a frame, where it is left to dry; the brains of the dead animal are now rubbed in, imparting oil to the skin. This finished, it is first steeped in warm water and then dried, two women stretching and rubbing it in their hands whilst drying, after which it is again soaked, stretched, and dried. Before use, the skin is smoked, by being placed over a smouldering fire; the fire is made in a hole in the ground, over which there is a bell-shaped framework to carry the skin, which should be so arranged as to confine all the smoke; constant watching is required to prevent the skin from burning. Rush mats, like those of the coast tribes, are made by the women, and everything is sewn with sinew, which is substituted amongst these Indians for the invaluable cedar fibre of the Fraser River district.

*Games, etc.*—Horse-racing is a very favourite pastime in summer, and the stakes are sometimes large. A game is played with bows and arrows, in which the players are divided into two parties, one side rolling a small hoop or ring, through which the other side try to drive their arrows. Cards are much in fashion, as also the games of 'odd and even,' 'which hand is it in,' etc.; but the favourite game is one played with two pins or arrows, and a small ring, and in which only two can join at the same time. A small piece of ground tolerably level is chosen, on which two wooden butts are laid about fifteen feet apart and parallel to

each other; each player is provided with one of the arrows, which are of wood and pointed with thick iron wire, which is evenly balanced by lead wrapped round the opposite end. One of the men takes the ring, in the inner circumference of which six beads are fixed, and rolls it along the ground, and the game is to run after the ring and throw the arrow, so that when stopped by the wooden butt the ring may fall upon it; both players throw their arrow at the same time, and, to enable a man to count two beads of the same colour, he must rest above his arrow. Two of the beads are red, two blue, and two white, arranged so that those of the same colour are opposite to each other; white counts three, red two, and blue one, and the score is generally ten, but this, as well as the value of the beads, is arbitrary. Very heavy stakes are lost and won at this game, which seems to have great fascinations for every Indian, and frequent are the cases of men losing horses, blankets, guns, and all they possess, during a run of bad luck.

*Medical Treatment.*—Bleeding is sometimes used by the native doctors, but the favourite remedy for rheumatism and all other affections, is the sweating process, not unlike a Russian bath in character. The sweat-house consists of a framework of sticks, bent into the form of an arch, with both ends fixed in the ground, and covered with earth. A small door is left for the patient to crawl in and out, and the floor is slightly sunk into the ground to obtain earth for covering the roof. The house is of an oval shape, 6 ft. by 7 ft., and about 2 ft. high. After the patient gets in, stones, heated at a fire close at hand, are placed in the centre, and water thrown upon them, which fills the sweat-house with steam and thoroughly parboils the inmate, who, after standing this sort of treatment as long as he can, comes out and jumps into the river. This bath is said to give a very pleasant sensation of elasticity to the body and limbs, and is often taken by the Indians before starting on a hunting excursion. Some of the employés of the Hudson's Bay Company, who have tried it, speak in glowing terms of the feeling after it is over, though they were bound to confess that the parboiling in the house was anything but pleasant. The remains of these sweat-houses were found in the wildest portions of the Cascade Mountains, and marked the place where some hunting party had encamped to refresh themselves.

*Houses, etc.*—The Selish tribes may almost be called nomadic; for though each tribe has its own particular district or country, the dwellings are of a temporary nature, and the people themselves are continually changing their place of abode. The houses or lodges, as they are called, are of a conical shape, and composed of several long poles, the lower ends of which are pointed and driven into the ground, and the upper drawn together and fastened

by strips of hide, etc. Several dressed buffalo skins, sewn together, are stretched over the poles, leaving a hole at the top for the smoke to escape, through which the ends of the poles project; the door is protected by a flap, and in wet or cold weather a small fire is made in the centre, which warms the whole lodge, and with their feet towards this, the inmates lie down when they retire to rest. The lodges are far more comfortable to live in than might be expected; the smoke escapes freely through the opening at the top; they are commodious, and, even in the depth of winter, are warm and agreeable, being superior in that respect to a tent. The squaws become very expert in raising the lodges, and it takes very few minutes after a halt to have everything in order, and the kettle on the fire. These lodges are very expensive, costing from thirty to forty skins, or sixty to one hundred dollars, on the western side of the Rocky Mountains, the skins having all to be brought from the eastern plains, so that it is not every Indian who is able to purchase one. The more common house is of the same shape and pattern, made with large rush mats wrapped round the poles in place of the skins; these throw off the rain well, and are as comfortable as the others; but the mats wear out quickly, and they are very bulky and inconvenient for packing on horseback. I may mention that the Sibley tent, now used by the United States army, is made, with some modifications, on the pattern of the Indian lodge.

*Means of progression, etc.*—The horse is the means by which the Indian generally moves from place to place. Since the Indian war of 1857-58, the number of horses has decreased greatly, few even of the chiefs possessing more than ten or twelve, and many of the poorer men having none at all. Some of the best fetch good prices, but a fair average one may be bought for thirty or forty dollars; mares are in great demand for breeding purposes. No selection seems to be made to improve the breed, and many are wretched specimens of horse-flesh; they have great endurance, are surefooted, and very hardy, requiring little care at the end of a day's journey, when they are simply turned loose to graze, and in the morning caught up and saddled. The Indian treats his horse very cruelly; most of them have large open sores on the back, and the numerous scars on the head and the unwillingness of the horse to let anyone touch that part, show the effect and cruelty with which the rider uses the butt of his whip. The Indian mounts clumsily and slowly from the off side of his horse, and even when once in his seat, though he rides boldly and well, there is none of that grace and ease of carriage which might be expected amongst these Arabs of the far west. The horses are trained to dash up at full galop, and come to a sudden stop at a motion of the rider's wrist, a practice which causes much injury

to the feet; those wonderful feats of horsemanship so often related as being common amongst the Sioux, Crows, and Blackfeet, were neither seen nor heard of. No care is taken of the horses during the winter; they are turned loose to pick up their living as they best can by scraping away the snow and eating the dry unnutritious grass below, in consequence of which they are a long time recovering flesh in the spring, and, being ridden long before they are strong enough, soon get broken down. In the neighbourhood of WallaWalla, during the winter of 1861-62, there was a slight thaw after the snow had fallen, and, on the frost setting in, such a hard crust was formed that the horses could not break through it, and during the three months of winter nearly the whole were lost, many of the bodies being found with the hoofs almost separated from the legs, by the sharp edge of the frozen crust. At Colville they were much more fortunate, as frost setting in before the snow fell, the snow remained soft and dry as dust during the whole winter, but even there many of the weaker animals succumbed to the severity of the weather. The men use either a saddle of the common Mexican pattern, a leathern pad, or a piece of buffalo skin thrown over the horse's back; the women ride after the manner of men, and use an exaggerated form of Mexican saddle, having a very high pommel and cantle. The bridle is nothing more than a rope of horse or buffalo hair fastened to the lower jaw by a clove hitch; this makes a very severe and effective bit, and the rope is very convenient for tethering the horse when out hunting or wishing to dismount; the same rope is also fastened round the horse's neck when turned out for the night, the whole length being allowed to trail on the ground behind him, a plan which permits the horse to choose his own grass, and enables the rider to catch him with ease when required. The whip is a short thick piece of wood furnished with two long strips of buffalo hide. None of the horses are shod, and, after a long journey over rough or rocky ground, the hoofs get worn down to the quick. The girth or lynch is made of horsehair, and is provided with a ring at each end, by means of which it is fastened to the saddle with leather straps. The stirrups are of wood, which is more pleasant and comfortable to the foot than metal, especially in very cold weather. For packing, a very simple saddle is used, with cross pieces, on the ends of which bags of undressed buffalo skin are hung; these are laced up at the top, and kept from swinging about by a leather thong passing under the horse's belly. A piece of buffalo skin is placed underneath the saddle to protect the horse's back, but they get dreadfully galled notwithstanding this precaution.

*Canoes.*—There are few wooden canoes, and those very badly made, having none of that elegance of design so noticeable in the construction of those seen on the coast. The canoe in general

use is made from the bark of the white pine, and is so light that it can with ease be carried on the head from one stream to another, yet is capable of holding three persons with a considerable quantity of baggage. These canoes are very fragile, and it is usual to carry a supply of gum to mend any cracks or holes that may be made during the journey. The paddler sits in the centre of the canoe, and uses the common paddle; as this requires shifting from side to side, it is somewhat curious that the double bladed paddle has never been thought of by the Indians. In winter, when snow is on the ground, snow-shoes of what is called the bear's foot pattern are used, which are said to be much better for hilly and mountainous country than those of the well known long Canadian pattern. The wood is bent into shape and hung up in the smoke of the lodge until thoroughly seasoned, and the sinew is twisted by the Indian in his spare moments.

*Slavery.*—Prisoners taken in war are generally enslaved, but are not treated so harshly or made such a common article of barter as amongst the coast tribes.

*Language.*—The language is not nearly so guttural as the Cowitchan, and much more readily picked up by a stranger; as far as could be learnt, there was little or no grammatical construction. Vocabularies of the Sweielp, Spokan, and Kalispelm, are given.

*Religion.*—Sunday is very generally observed amongst the Selish tribes, and there is a great deal of devotional feeling, which is kept alive by frequent visits from the priests, who have established a central mission in the Cœur d'Alêne country, and have great influence amongst the Indians, but it is doubtful whether they have made any real converts. Besides the mission in the Cœur d'Alêne country, there are others at the Spokan, St. Ignatius on the Pend'Oreille, at Colville, and on the Great Okinagan Lake, now having no resident missionaries, but visited at different periods of the year by members of the Cœur d'Alêne Mission. The Indians believe that those who are good go to a happy hunting ground where there is an unlimited supply of game, etc., whilst the bad go to a place where there is eternal snow, hunger, and thirst, and they are tantalised by the sight of game they cannot kill, and water they cannot drink. They have a strong belief in the efficacy of charms or 'medicine,' and also believe that a familiar spirit is always with them on earth, taking care of them and directing their actions by dreams or presentiments in lifetime, and after death remaining on earth to watch over their nearest friends. This spirit is supposed to leave them sometimes during life, and the medicine man is then called in to bring it back again by his incantations. There are a great many very curious and pretty legends amongst the Selish, in all of which the

'coyoti,' or small prairie wolf, is the most conspicuous figure. One tradition is, that the present sun is only a portion of an old one, which existed years before any man lived, and was broken in some mysterious way by the little wolf. The expression of 'a toad in the moon,' equivalent to our 'man in the moon,' is explained by a very pretty story relating how the little wolf, being desperately in love with the toad, went a wooing one night and prayed that the moon might shine brightly on his adventure; his prayer was granted, and by the clear light of a full moon he was pursuing the toad, and had nearly caught her, when as a last chance of escape she made a desperate spring on to the face of the moon, where she remains to this day. At another time, the little wolf being desirious of getting a wife, visited the Spokans, and demanded a young woman in marriage; this was granted, and he thereupon promised them an abundance of salmon, and for this purpose made the rapids that they might be the more easily caught. He made the same request to the Cœur d'Alênes, but being refused, he became very angry, and formed the great falls of the Spokan, which prevent any salmon from running up to the Cœur d'Alêne country. One of these legends, for which I am indebted to the kindness of Mr. and Mrs. McDonald, of Colville, is given in full, in which the Indian mode of expression and peculiar style is preserved as much as possible, the translation being almost literal.

### III. KOOTENAY RACE.

The Kootenays inhabit the country watered by the Kootenay, Flatbow, or, as it is sometimes called, McGillwray's River, and are divided into two tribes, the 'Akishkinóokaniks,' or Upper Kootenays, living immediately at the base of the Rocky Mountains, in that part of the country commonly known as the Tobacco Plains, numbering about 450; and the 'Akuchäklacktas,' or Lower Kootenays, scattered over the country from the southernmost point of the great bend of the Kootenay, near Chelempta, northwards to the Kootenay Lakes, and numbering about 200, making a total of 650.

From the shortness of the time spent in the Kootenay country, but few particulars could be learnt about this very interesting tribe, which, speaking a widely different language, and walled in by high ranges of mountains, is entirely isolated, and has had far less intercourse with the whites than any of the surrounding tribes.

The Kootenays were decidedly the finest race of Indians met with during the progress of the Commission; the men were tall, averaging 5ft. 9in., with sharp features, aquiline noses, black hair and eyes, and very long black eyelashes, which form one of the most striking peculiarities in their appearance. The hair is either

dressed in a long kind of 'queue' hanging down the back, done up with grease and ornamented with rings of yellow metal, or cut short in front, so as to leave a row of stiff bristles standing erect from the forehead, with a long lock on each side, passed through a metal tube or keeper.

The Kootenays bear the reputation of being brave, honest, and truthful, and pride themselves on the fact that no white man has ever been killed by one of their tribe. Though naturally quiet and inoffensive, when occasion demands, they show themselves inferior to none in all warlike accomplishments, and, spite of the small number of their tribe, manage to hold their own against the Blackfeet in the frequent skirmishes which take place on the common hunting ground.

The Upper Kootenays live principally on buffalo meat, to obtain which they make each year two excursions to the plains; one in spring, the other in autumn, crossing the Rocky Mountains either by the Kootenay or the Boundary Pass. Deer, bear, elk, and the mountain goat, are taken in the winter when the deep snow on the mountains drives them down to find shelter and food in the narrow valleys. The Lower Kootenays live on deer, fish, and berries, seldom visiting the plains for buffalo, and to this may be ascribed the fact that, though living so close to the Kalispelms, no one could be found amongst them who spoke the Selish language, whilst amongst the Upper Kootenays, who are in the habit of hunting in company with the Selish, most of the men were able to talk it. Several of the Kootenays have small herds of cattle and patches of cultivated ground, and one of the chiefs called 'Joseph' had a small farm on the waters of the Kootenay, with a band of seventy horses and thirty head of cattle.

The dress of the Kootenays consists of a blanket, or buffalo skin, wrapper, breech-clout of blanket or leather, with leggings and mocassins; most of them have a Roman Catholic token suspended from a small bead necklace. A broad belt of yellow metal round the neck is a very favourite ornament, and many of the men are accustomed to carry a long string of beads by which they are enabled to tell the exact day of the month, coloured beads on the string serving to mark the termination of each month, a mode of reckoning time which has probably been introduced by the priests.

The lodges, canoes, arms, etc., are of the same description as those used by the Selish, and what has been said of their habits, customs, and general mode of life may be equally applied to the Kootenays, who, it may also be remarked, give the 'Little Wolf' the same prominent position in all their legends. The horses of the Upper Kootenays are wintered on the Tobacco Plains, those of

the Lower Kootenays near the Kootenay Lake, at neither of which places is there any great depth of snow during the winter, and they are much esteemed for their hardiness and powers of endurance.

The chiefs are much respected, and have great authority amongst their own particular portion of the tribe; in one camp a chief was met with who used to enforce his authority, amongst the younger and more unruly members of his flock, with the cane, which had a most beneficial effect on their behaviour.

There is a mission house on the Tobacco Plains, now uninhabited, but visited at intervals by one of the Roman Catholic Missionaries from Cœur d'Alêne. The teaching of the priests seems to have had more substantial results amongst the Kootenays than elsewhere, but they have not yet undergone the severe trial of constant intercourse with the white man.

### 'THE LITTLE WOLF.'

Some account of the manner in which the little wolf visited heaven, what he saw and did there, and of the bloody war which he waged with the grizzly bear. A legend of the Flatheads (Selish).

There was of old a wolf who had a good and faithful wife, a mole, by whom he had a son who was married to two wives, one, the double-tailed black cricket, the other, that small white speckled duck which loves ever to dive and be alone. The former of these the young wolf loved dearly, the latter he did not like so well, and thus the old wolf, seeing the duck's beauty made no impression on the heart of her husband, became enamoured of his son's wife; time only increased his passion, and at last brought him to contemplate the ruin of his son.

One day the young wolf, who was a great hunter, complained to his father that he had no feathers to wing his arrows with, to which the old wolf replied, that he would go and get some eagle's wings for him, and then both started out to hunt, one for an eagle's nest, the other for deer. After the old wolf had trotted along for some time he met three whelps under a spell, who told him they were his children, as they had been created from three pieces of his dung; this he believed, and disclosed to them his desire of banishing his son. The eldest whelp asked why his heart was so cold towards the young hunter, to which he replied, "I am his father, and it is my will"; the two youngest whelps then said, "We will become three trees, and the eldest shall be an eagle on his nest; so they were transformed as the old wolf wished it, and he returned home to look for his son. The young wolf, on seeing him, asked, "Well, my father, didst thou find the eagle?" to which he replied that

he had found the nest of that renowned bird, "and," said he, "thou shalt come with me to-morrow, my son, and help to harry the eagle's nest, for I am getting old, and may be unable to do it alone."

Now the young wolf was a sagacious hunter, and next day, when he stood with his father by the three trees, he saw that they were strange things and recently grown, as he had passed the place on the previous day, and observed no trees where the three now stood, From this he knew in his heart the intentions of his father, but kept his knowledge to himself. The middle tree was much higher than the others, and this the young hunter, stripping off leggings and mocassins, and requesting his father not to look after him as he went up, prepared to climb, for on its lofty head was placed the eagle's nest. He took with him his bow and quiver, and after climbing till he reached a fork of the tree, stood up, and launched an arrow at the eagle, which brought it down, till stopped in its fall by a branch of the tree above his head. Trying to catch it, and failing in his attempt, he looked down and saw his father winking at the tree to extend itself to a greater height. On asking his father why he looked up and winked, the old man replied, "I was looking at your perilous position, my son, and a piece of bark struck me in the eye." The young hunter again tried to reach the eagle, when lo! he looked up and found that the tree had grown to a dizzy height, with the eagle far above his head at a much greater distance than before. A third time he tried to reach it, and looking down saw his father winking at the tree to rise higher, on which he accused him of having bad designs. The old man replied: "Thou art indeed so high, my son, that I feel much for thy position, it is so lofty and imposing, that it may make thy head spin like a whirlpool and cause thee to fall." The son answered, "Yes, my father, but he that keeps a steady head loses not his footing." As the hunter looked again at the eagle, he saw that the tree had penetrated the heavens.

Being now certain that his father intended to banish him from the world, he waved his hand and bade him farewell; for though the parent's deeds had been bitter, the feelings of nature were still strong in the son:—waving his hand a second time, he stepped from the tree into heaven. There he wandered for some time through very strange countries; now passing through smothering calms, which made him feel as if he were in a bear's belly, now borne on by violent winds like a flake from the whirlwind's nostril, at times shivering with cold so that his thumb was dead to the notch of his arrow and the cord of his bow, then on again as if the big round heaven were a sweat-house, the large hot drops rolling down into his eyes till they smarted. He

saw stars in every direction he looked, and one shadow that held them on his bosom, like islands sprinkled on the surface of some great waveless lake. In the face of this shadow, all other shadows stood, passed, and returned, the sage man and the born fool, the good and the bad, the aspiring reasoner and the imbecile idiot, all those that were, that are, and that shall be, were there, and when a cloud of displeasure passed over the face of the shadow, all the shades in his face were afraid, and he became afraid of himself, and withdrew into his emptiness alone.

After seeing this the young wolf passed on till he came to three lodges made of clouds; he lifted the door of the first and, passing through, entered the second. In the first two he saw nothing but the walls, made with the winds glued together by mists, but on entering the third he found two large grim old fellows with grizzled hair and beard, and long horny nails crooked like the owls. They were two old spiders spinning their webs, who, upon seeing him, seized their darts to kill him. He was much afraid but kept his presence of mind, and said to them, "Be not so hasty to kill me, my grandfathers, I am a poor wolf banished for no fault of my own;" to which they asked, "How callest thou us thy grandsires, we know of none banished but the Little Wolf's son?" he replied, "I am he of whom you speak, your grandson is in your hands." On hearing this the old spiders, grinning with gladness, toddled forth to get him something to eat, saying, "We are old and weak, but glad, very glad, to see you; we are nearly blind and compelled to snare the winds to drive deer into our power, but it is time we give you of our fare," and so taking the skull of a large dragon fly they filled it high with fresh mosquitoes, dried ants, slices of grasshopper flanks, some junks of wasp fat, a few eggs of the bull fly, some trout roe, the kidneys of a butterfly, a bat's tongue, and a cell of the spotted bee's honey.

Now after the old wolf had banished his son, he took his clothing and clad himself in it so as to deceive the people and pass for his lost son; and, to make his face look fresh and young, he daubed it with red and white clay; on which the spell bound trees restored to their form of whelps entered his mouth, and he returned home. On approaching the camp he cried and howled for the loss of his father; the duck and the faithful cricket heard him; the cricket knew the shrill voice of the old rascal from the kind lusty words of her husband, and told the duck that there was mischief about, but the duck would not be convinced, for she loved the old wolf. He then entered his lodge, and seeing the sagacity of the cricket commanded her to absent herself; but, on his thus exposing himself, before

leaving she reproved him with bitter vehemence for his conduct towards his son.

The old wolf now enjoyed the love of the duck, but the people of the camp grumbled much about his ways, openly saying, that he had made off with his son to get possession of the duck; a few fools, however, believed the lie, and that it was really the absent made present. Being sole chief of the camp, he essayed to lead it to game, but the more they hunted the more they starved. The poor old mole wept daily for the loss of her son, and the cricket, staff in hand, with her son and goods on her back, bewailed her lost husband.

The young wolf fared well in heaven with the spiders, but yearned to be restored to earth. One day as he was standing in the door of his cloud made lodge, he saw a form like the shadow of a man pass down through the clouds and move swiftly towards the earth. On asking the spiders what this was, they said: "That thing which thou seest is going to assume his inheritance, and will be the chief insect of thy world; he will breed diseases to destroy, and destroying will make cures to heal; he will be bitten by a fly, while the panther will shrink from his glance; he will sing like a swan when his son is dead on his knee, and kiss his wife while he holds a knife to his heart; he will run through the stars while he moulders with death in the clay; he will thirst like a desert when steeped like a pool, and weep like a cloud when he burns like a star; think and know, my son, for these are but few of his many signs." Having mused on this warning, and the dim spirit-like shadow he had seen, he begged the spiders to restore him to earth; this they promised to do, and immediately commenced spinning a large ball of thread; after which, taking two spoons made of the horn of the mountain ram, they closed him in it, forming an open shell round his body, with a supply of thread to lower himself by. Everything being ready for his descent, he promised to repay their kindness with venison, and then commenced his journey. Passing down by the moon, he saw that she was made like a bleached buffalo's skull, hairless, and full of hollows and knolls, with its horns ring-worn, blasted, and dry. On touching the top of the clouds, he shook himself in the shell, and letting go a knot of his web, landed on the top of a column of mist; a second shake and letting loose another knot, landed him on the top of a tree; a third shake and knot, and he touched the top of the grass, which bent easily with him to the ground.

Disengaging himself from the shell, he left it, and pursued his way to the site of the three trees, but could not find them. Convinced by this of his father's power, he ran on till he reached the camping ground from which he and his father had started to harry the nest, but found the place deserted; on and on he fol-

lowed, till he found some embers smouldering on the site of a late camp, and a bow he had once made for his son; onward again he trotted, and at last saw the travelling camp far off on the verge of the plain. As he hastened to overtake it, he saw, toiling in the rear, the poor fatigued cricket with his son and chattels on her back. The son saw his father, and cried "hoo-ho-pa-noo," but the mother, much distressed, gave her son a backward slap with the cane, saying, "Poor little fool, why doest thou trouble me, thy father is lost to us?" and then trotted on. The end of one of her pack cords was dragging behind her, and, putting his foot on this, the young hunter brought her to a stand; she shook and pulled, but, finding herself still held fast, with head stooped by the weight of her load, she turned to see what was the matter, when lo! it was her husband. She was soon in his arms, embraced and embracing, but spoke not a word till she had wept with joy; after some time both sat down on the grass, and in turn related what had taken place during their separation, during the course of which the cricket told her husband how his father had given her no leather, game, or fish, but lived continually with the duck. "Well," said he, "all this has been very cruel of my father, but I am still a hunter, and as the people are starving, I will, by my ken, direct the course of the camp to game." After this the cricket and his son stood up with him on the grass, and they danced one of the hunter's dances together. To conceal his arrival, he persuaded the cricket to carry him on her back, and told her when she saw anyone come in with fat meat, to take it away from him. She attended to his words and bore him to the camp, and as the several hunters returned from the chase, she watched them, and on seeing one carrying a fat deer, went and took it from him. This was much talked of at night in the camp, and they sent a spy, the striped squirrel, to visit the cricket's lodge, but he returned, saying he had seen nothing save the cricket weeping for her husband; they then sent a hawk, who scudded silently to her lodge, but he returned, confirming what the squirrel had said; again, they sent that slippery snake whose hide adorns the bow; he glided through the grass unseen, and saw the cricket and her returned husband; then, striking his head against the skin door to make them aware of his presence, returned home with the news, and many were affected by his tale.

The young hunter seeing that he was discovered, said: "All that has passed shall be disclosed, and I will make myself known to my father." The old wolf and his friends were dancing a medicine dance as the young hunter passed through the camp to his father's lodge, the people crying out "Tis he! behold the old wolf's son." Some told the father to listen to the cry without,

but he danced, grinned, frowned, howled, snapped, yelled, whooped, and leaped the more. The young hunter stepping into his presence, looked him full in the face, on which the dancer retired to a corner, covering his face with his hands. The duck seeing the confusion of her lord, fled, and is diving alone to this day.

The old wolf presently recovering his presence of mind, quitted the dark corner, and standing in full view of his son, said to him: "My son, here I am with thy stolen clothes, I pray thee forgive me, and take them back again. Remember, knowledge comes from without as well as from within; to him who understandeth this is evident, and I have no doubt that, if thou hast lost time, thou hast gained knowledge thereby." The son replied that he would not use his clothes again, but would capture new ones in the forest, that would be more worthy of him.

At this time the old mole, touched to the heart by her son's voice, for she had hungered and pined in his absence, begged him to forgive his father, and tell her his adventures; after relating all that he had seen and learnt in heaven and on earth since his departure, he received his mother's blessings and good wishes, and left the lodge. Returning to his cricket, he prepared his arms, and started off at dawn to the woods, where he soon made great havoc amongst the deer; and, after slaying as much venison as he could dress, hung all the rump pieces highest, and returned at dusk with choice pieces for his cricket, who never forgot the poor old mole. He then told his son to warn every lodge except his father's, and bid them be off at break of day to bring in the game. Next morning, after all had started, on foot or wing, the call was given to be off; the old wolf begged them to stop for him, but he was told they were already far advanced; at this he hastened, grinning, and gnashing his teeth at them for giving him the slip, which would enable them to leave the worst pieces for him. On arriving at the venison, he found nothing but the rumps left, and after much trouble in getting them down, tied them with a cord he had stolen for the purpose; turning to rise with his load, the rope broke; with many curses he mended it, but it broke a second time, and when again mended, the sun had walked down behind the world. The sky now began to get troubled, and as the gloom thickened, seeing its dismal appearance, he took up one rump and trotted towards home; he had not gone far, however, when a whirlwind caught him, twisting him round like a bubble on the edge of a whirlpool, and then whistled onwards, leaving him without meat or arms; onwards, however, he sped, though the sky remained murky. The very mountains groaned; birds fluttered in the gloom; burning brands of lightning smote the neck of heaven; clouds fixed into one another like closing eagles; the thunderer leaped from peak to peak

like a mountain ram; the winds blew as if they would scalp the hills, and wrenched big trees from the valleys as they passed; hailstones rattled like a freezing forest, killing the birds that could find no shelter; rivers streamed on, beaded in foam; sudden gusts drove through his whiskers; the wilds shook like a grove of cotton wood, and his eyes were wet with sleet and tears. Darkness and solitude caused him to lose his way,—now blown down to the dust, now borne off like a flake of froth, biting his tongue in despair, or bitterly howling over the tricks he had played his son. Thus he walked, creeped, trotted, and tumbled along, surrounded by gales and lightning, till morning found him at the foot of a mountain he had never seen before, when finding himself lost, he sat down drenched and shivering at the foot of a great stone, whose head was sheathed in moss. There, with none to soothe him, he wept bitterly, and the earth seemed cold, troubled, and strange, and he coiled himself up and went to sleep; but the dripping from his hair formed a pool beneath him, and he was thoroughly humbled, wet, and sad at heart. Presently, however, the world essayed to calm his agitation, and sighed like a weary man; the clouds, like travelling camps, retired in the distant ring, birds sang out, tufted foams dosed on the breasts of the streams, the sun looked through the thin veil of mist, and all was at peace as a heart beating calmly.

By this time, the young wolf had become the leader and hunter of his people, and the kind cricket was mindful of the mole. With a portion of his first game, the young hunter went to the place where the shell still hung from the heavens, and having fastened the venison to it, made a grateful sign to the spiders, who immediately drew up shell and flesh.

The old wolf resolved to do good; but to do so he must use cunning, industry, and audacity. One soft sunny morning, as he was walking down by a river, he saw the badger dig with nails and nose for roots, and the osprey stand still in the air, looking for his prey; he heard the snakes whistle to betray the birds, and saw the ant, with choice chips, build his lodge; the spider hung his net from the boughs; the sage cocks, stroking their sides with their wings, gathered to do battle for their sweethearts; the fawn, on its knees, sucked his dam, who, on seeing him, bristled up her hair and struck the plain with her hoof, whilst the fawn tried its speed on the plain; bubbles stood motionless on the pools; the winds held their breath on the hills; the sun walked up into the heavens without his heeding it; a sleepy spirit was abroad in the silence, and he lay down alone to sleep.

The three spell bound whelps now escaped from his belly and formed themselves into three beautiful and graceful maidens. Two

of them wished to destroy the old wolf, but the eldest, who was just and good, reproved them, saying "He has already suffered for his wicked deeds, he did not do as much evil as this to our brother. it is better to return good for evil, than evil for good"; after hearing what the elder had said, they all bathed in the stream.

The old wolf, who was awake at this time, overheard their discourse, and wishing to test their fidelity, lashed himself into a piece of the raw hide of a stag, and, pushing off from the bank, floated down the river. On seeing him adrift in this manner, the two said, "See how he thinks to deceive us, let him pass on and be drowned," but the eldest replied, "No; I will swim and bring him on shore; I will be good to him and he will help us;" so saying, she swam and brought him to the shore, where she gave him the tenderest fish to eat. This happened near a fall, and the old wolf saw that the salmon could get no further up the stream, and observed that many perished in their ceaseless and vain attempts to surmount the falls, for some of them, with quivering tail and fin, sprang from the throat of the whirlpool, and, spanning like a rainbow the mists of the torrent, struck their heads and sides against the overhanging rocks, from which, repulsed in death, they floated down on their silvery sides, the sport of the whirl and surge, whilst others leaped straight as a bow, rebound, and with flashing crest, as when the young moon climbs a driven cloud, pierced on high the tumbling waters, but were beaten back like shadows.

On seeing all this, he thought how much better the people in the upper part of the valley would fare if the salmon could only succeed in their leap, and mentioned it to the three maiden whelps; the two youngest, who were of a greedy disposition, were displeased with his charitable thought, but the eldest approved his design, so he laboured day and night with a crooked and flat stick until he had made a new pass for the salmon to get up. This generous feat performed, it was beautiful to see how the salmon darted up the new channel, up and up they went, and he, galloping up the river bank before them, closely followed by the eldest whelp, shouted and sang:

"For life, for life, against the stream,
For light, for light, against the beam,
With speed the boundless plains I'll try.
For winds the windless hills will sigh,
To drive the rains that swell the streams
Which wrap the salmon and his dreams."

Thus he sang, they, like a cloud of swallows, scudding after him against river and rill, till creatures far above beheld the bounty that had fallen on the land. The two greedy spirited whelps, having plunged into the torrent to stop the salmon, were drowned, their spell having been broken when they separated themselves from their eldest whelp and their sire.

During this time the young wolf was very attentive to his people. One day he had a quarrel with the grizzly bear, which in the end gave rise to a serious war between many of the greatest chieftains of the land; this quarrel was caused by a deer which the young hunter had killed. The bear being large and strong, the young wolf thought he had better outwind his enemy before getting to a hand-to-hand fight, so he went and soaked his tail in a spring, rolled it in the dry sand, and walked stiffly up to the place where the bear was hiding what he could not eat of the meat, then slipping quietly by the proud bear, struck him in the eyes with his sandy tail. The bear rubbed his eyes and growled terribly, rolling himself on the ground. The young wolf gave him another switch in the face with his tail, which made him growl more fiercely and tear the ground with rage, for he could not see to follow his enemy, who was also very nimble footed. The wolf's courage at last overcame his prudence, and, running in, he caught the bear by the throat, on which the grizzly with one stroke of his paw ripped out the wolf's eyes, and would have slain him with the next, had he not slipped his hold as soon as he was struck. Now the fox, who was the young wolf's friend, came up during the last round, and being himself too light to join in the fight, sat down and howled to let his friend know which way to take. On hearing the fox, the bear was much afraid of being surrounded, and stood up on his thighs listening with a ear more tender than the she beaver's to learn what his foes were doing, and awaited the result where he was. The fox led the blind young hunter home, shewing him much tenderness on the way. After a few days the bear recovered his sight, and vowing deep vengeance declared war against the wolf and his allies.

The young hunter's people began to suffer much on account of his accident, they had nothing to feed or clothe themselves with, and wandered over the hot sandy plains bewildered and forlorn, their eyes with dimmed light sank back into their heads, the skin stuck to their cheek bones with a hungry hold, their lips grew long and blue, their teeth rose like a dead beaver's, the soles of their feet were like singed horns, full of thorns and tumours, and they were in a most forlorn state.

Whilst they were in this sad condition, the fox went out one night to see what he could catch, aud having wandered about till the time when the owl roosts, took advantage of the darkness to pass close to the grizzly's camp and see how it was pitched. Taking another road home he met the old wolf, who was still lost to his friends, and thus saluted him, "What a fortunate hour is this, my old friend, in which we meet; since thou wert lost, nothing but calamities have fallen upon us. Thy son's eyes have been torn out by that tyrant the bear, the lodge of thy good old

mole has been robbed and torn down by him, and all our people are sore pressed by want and suffering. The dams, too weak to carry their young, leave them to die uncared for and unseen, and the old are left as useless to die at the tyrant's hands. Yes, the grizzly and his people feed on the lips thou hast heard singing the war song, and on the knuckles that smote their joints on thy drum. Silence and tears have taken possession of our camp, where no sound of gladness is heard, and thy son howls 'Woï, woï, woï' for his eyes, and is grieved to the heart for his conduct towards thee." The old wolf then said to the fox, "Yes, when ye want, ye howl; when ye had, ye were proud and heartless; my son, now that he has lost his eyes, mourns for his sire, but when he had it in his power, he was glad to banish him; still it was only act for act; I pity my son and am resolved to help him. By his want of sight, by my mole, and by the bow that broke not with the blows of his fathers, lead me to the lodge of the bear." The fox then said, "Yes, my chief; I know that thou art strong in thy cunning, but take care, for the grizzly is a beast of great renown, full of strength and deception, and supported by known heroes." To which the wolf replied, "I know him of old, lead the way."

At this time the two opposing camps were in sight of each other, and the blind hunter advised his people to fight rather than submit to the unjust acts of the bear, thus addressing them: "Why did the grizzly uproot the old mole's lodge? see how he has torn the eyes of the hunter and hidden the game he could not eat; how he basks in the face of the moon, whilst the weak mole, mouse, lizzard, and toad sweat to grease his mane; from their little stores he fills his giant carcass, and slaps them with his nailed paw when they complain. Does he not appease his appetite with the food of the poor? and do they not skulk from the sight of the tyrant when the rocks repeat his words? Let us return what we receive from this insolent grizzly's haughtiness, cruelty, and mockery; shall we forget our injuries from fear to do battle with him? No, no, my people, let us fight; I am blind, but I can bite and grip without seeing, and, could I see, I could do no more." To this harangue every one present nodded approval, and though every heart was rent with alternate hope and fear, they prepared for battle.

Both camps were pitched for fighting, when the old wolf, led by the fox, appeared descending a hill which overlooked both armies. Standing to look at the camps, the old wolf asked the fox who were the bear's allies." "There," said the fox, "is the lodge of the bear, and the chiefs wolverine, panther, lynx, badger, and eagle, are there at the head of their tribes. Our own forces are more numerous, but of less renown. We

have, as thou knowest, the raccoon, osprey, crane, raven, marten, skunk, beaver, otter, tortoise, lizzard, snake, musk rat, frog, toad, wasp, mole, owl, cormorant, loon, marmot, mink, and more of less fame.

As they approached the hostile camps, they took particular care to look at every hole and stone in the vicinity ef the bear's camp, after which they went to the mole's lodge, and she was immediately in her husband's arms; there, too, sat his blind son making arrows. He was received in silence, which is most expressive when the heart is full; after a sad and long separation, and being on the eve of a serious fray, they spoke but little of their sufferings, turning the conversation to the coming combat.

The spell-bound whelp now advised them to gather the chiefs together for a war dance, and his advice being found good they proceeded to obey him. One of the first to dance the war dance was the Chieftain Frog, who standing up, took the sounding rattle in his hand, and sang:

> "Way-ka-ku, way-ka-ku, way-ka-ku,
> Frogs wake, strokes, frogs wake.
> Frogs blows take, frogs rows make,
> Frogs, frogs, frogs!"

He had no sooner danced and sung, than the War Raven commenced, and sang:

> "Crow crank, crow crank, croak, croak.
> Crow crank, rocks, rocks, rocks.
> Crow chocks, crow rocks, crow crank."

In this way each of them danced and sang his own war song. While all were intent on the dancing, the old wolf, wishing to have another immediate cause for war, sent the chief mouse to beg a piece of meat from the bear's wife. The she-bear was inclined to pity the poor mouse, but the old grizzly killed him with a slap of his paw, and, to add to the indignity, sent the chief wolverine with the dead body to the old wolf's lodge, bidding him also challenge the wolf to fight. In reply the wolf promised to meet the bear at noon next day; but though he spoke truly concerning himself, he did not say when the fight would begin, so that whilst the bear, confident in his strength, dosed on till dawn, the wolf's chieftains were busily engaged in causing his ruin.

Now of all the chiefs who befriended the grizzly, the eagle was thought to be most formidable and overbearing. Everyone said so except Chieftain Owl, who spoke thus: "I know the eagle, light and his weight make him brave, but in the dark he is a coward, a great blind, helpless blockhead, that will not quit his perch; but, as you all know, darkness is my nature and vantage;

I will go with the gloom around me, and fight the chief of the eagles." The old wolf said, "Thy words accord with my thoughts, go forth and prove thy courage." Now this owl was that lord of the night that scours the wilds of the Rocky Mountains; his stout wings, clad in their hoary plumage, were long and supple, and his feet were armed with sharp piercing talons, ringed and curved; such was the chief who went out to find and fight the renowned eagle. He flew and dived at the wind as was his wont, and sat on the top of a tree, on one of whose seared limbs that strong bird, the eagle, was roosting. Here the owl made a meal off the game he had caught, and tried to read the eagle's thoughts. The night was dark and thick, the moon and stars were obscured, and as the owl hopped down from branch to branch, to near the eagle, he stopped for a moment to look down at that daring chief. There he sat half asleep, his strong-ribbed quills dappled like the storm, his bill was arched like the sky, and his eye peered from its socket like the morning star; his back was dusky and broad as the thigh of a hill, and his crest stood up half erect like the grizzly's mane when he leaves his bath in the spring.

The owl attempted to end the fight by one bold stroke, and springing with the darkness around him, fixed the talons of his right foot in the eagle's eyes, whilst with his left he seized him fiercely by the neck, pinching him to the quick. The eagle sprang to the ground, but the owl still held fast, and he now shrieked, and rising in the air with the owl on his head struck him to the earth with his wings, but did not wound him. The eagle was now blind, and in his pain screamed to his friends to help him, but they, being cowards during the night, were still more afraid when they heard his screams, and would not venture out to help him. The owl soon rose, and finding his courage good, closed nail to nail and breast to breast with the eagle, but that bird, being dizzy from the pains in his head, could not get a fair hold of the owl, who was drawing his blood at every round. At last the eagle, being much spent, and standing on the ground with drooping wings, whilst his life's blood streamed down over his cheeks, the owl, emboldened by seeing him in this state, ran in and caught him by the ribs, but with his wings bent forward to encompass his foe, the eagle, with one stroke, pierced him to the heart. Just as the owl had reached the eagle's heart, and before the wolverine, who was hastening to the eagle's assistance, could arrive, both were dead.

As the wolverine was bearing the dead bodies from the field, a large rattlesnake from the wolf's army sprang round his neck and tried to choke him in its icy folds. The remaining owls, seeing that the eagles would not come out in the dark, made a sore attack

on the wolverine, who was nearly strangled by the snake; he rolled about, and growled fiercely, and striking the snake's stoutest coil with his forepaw, broke its back bone, but at the same moment his eyes were put out by the owls. The panther now stole to the fight, made a gallant spring at the snake, which still held on to the wolverine, and bit its head clean off from its body. The wolverine was scarcely freed from the snake when he began to reel about and soon fell dead upon the ground. As the panther crouched to engage another enemy, the female snake sprang upon him, and holding fast by his lips, twisted her body round his head, a hold well calculated to wear out his impetuosity. The blind hunter, too, led by the snake's rattle, caught the panther by the windpipe, and at the same moment the active marten seized him by the nostril. The hunter being on the same side as the snake, the panther was much embarassed, and could make no use of his left arm, and though he bounded through the air like a whirlwind, his foes still held on; he was now much spent, with his tongue hanging out, when a brave little lizzard ran into his throat and choked him; thus died the agile panther, but that brave chieftain the lizzard did not survive, for his brain was pierced by the tusk of the blind hunter when pressing the panther's throat.

Now pale dawn began to appear on the skirts of night, and the eagles, pluming themselves, bore down to the fight. The foremost, wheeling exultingly in the air with the body of the female owl, was tearing the head from the body, when he was fiercely charged by the chief crane, and his loins pierced by the crane's bill, which sore wound brought him to the ground, still holding the owl in his deadly grasp. This crane, on withdrawing his bill, was seized by the eagle's sister, and his neck twisted off at the root, so that he fell dead to the plain below. The remainder of the eagles, after performing many deeds of prowess, were at last defeated by hosts of ravens, cormorants, loons, and ospreys.

Now the badger, who is always vigorous in the morning, with a snort challenged the otter to fight. The otter, with a wheeze like squeezing ice, walked on his toes towards the badger, and for a moment they stood watching each other, then closed, and wrestled fiercely. The badger laid hold at the root of the otter's fore arm, whilst the otter, hoping to disable him at once, caught the badger by the loins; that brave chief, however, was well clad with shaggy hair and fat, so that the otter's teeth were too short to reach any vital place. They thus struggled fiercely till the otter from pain in his arm quitted his first hold and seized the badger by the cheek, but could not force him to let go his hold. At last when the badger had nearly torn the otter's arm

off, and the otter had gnawed the badger's cheek like a bruised berry, they paused to breathe, but soon closed again, laying hold of each other's necks. The otter now tried to pull the badger down to the water, and the badger just as stubbornly endeavoured to draw the otter to his hole; at this time two large musk rats came to the otter's assistance, and one of these commenced an attack on the badger's ham-string whilst the other caught him by the fore foot. The badger seeing the turn affairs had taken, made a desperate effort to drag the otter into his den; it was a critical situation for the otter, one of the rats was crushed to death between the badger's thigh and the side of his rocky hole, and, after a long severe struggle, the otter yielded up his life, whilst the remaining rat ran off for his life and tried to lead a fresh otter to the badger's hole. The newly arrived otter would not go in, nor would the badger leave the cool shade of his lodge. The remainder of the badgers stood at the doors of their lodges ready for the fight, but seeing many enemies about, and no appearance of the grizzly, kept to their lodges.

On another part of the field the lynx, after slaying a great number of squirrels, minks, frogs, and lizzards, was met by the marmots, martens, and ospreys, by whom, after shewing much skill and courage, he was defeated.

The bear's people were thus in sad plight, so many of their chiefs being wounded or slain, but he himself was a tower of strength. The old wolf had still many little heroes who had not yet fought.

The grizzly, who could have captured numbers of his enemies, and probaby retrieved the bad state of affairs, allowed his pride and foolish sense of honour to get the better of his cunning, and would not come forth till noon when his enemy had appointed to meet him. The remnant of his army, though now bleeding sorely, and much discouraged, looked to the result with confidence, relying on the grizzly's well-known prowess. While the remainder of the animals were engaged much as has been described, and generally in favour of the wolf's party, that chieftain was busy making a bone sling out of the skull of a lynx, and showing his mole how to heat some round pebbles which he intended to sling red hot at the grizzly, instructing her at the same time, to come up as quickly as she could, when she heard him cry "A stone, a stone."

It was noon, and the sun was pouring down his rays from mid-heaven, filling all creeping and flying things with languor, when the old wolf advanced to the fray, his head and sides well besmeared with white and yellow mud.

The bear now also came forth, slapping his shaggy sides with his paws; his mane, neck, limbs, and body, were smeared with

oil and mud, and in this garb he placed himself in front of the wolf, who thus addressed him, "Dost thou not know, my old foe, that knowledge is power? Thy haughtiness and gluttony will soon bring ruin on thy lodge. The wolf has taken advantage of thy laziness. Thou hast torn out the eyes of my son, broken down my lodge, robbed my wife, and hoarded up the food of the weak; thou hast slain the beggar and filled thy huge belly, whilst the poor crept hungry at thy feet. Thou art nothing but an empty boast that brings up the rear of the chase. Canst thou fight before the sun in the open plain with the little wolf? Dost thou not know that there is a thing now walking towards the earth from whose sight all people will run, and from whom thou wilt shrink in confusion? Know, my foe, that thy day of reckoning has come, and that thy tyranny is smitten by a cloud-born shade."

The bear answered, "All days are the same to the brave; his power and courage are always the same. If thou art good to the poor, how is it thy goodness makes so many poor? Thou art a little wolf of a long and windy howl; thy voice is only fit to confound the deer; thou art an active wretch, a swift thief, and a fine liar; thou art a wise grey little knave, when thy belly is full thou baskest and starest at the clouds, when thou starvest thou seest not the heavens. Thou art a good howler and an arrant coward, if thou but givest me one good hold of thy mane thou art dead;" and saying this, the grizzly stalked towards the wolf with a scowl of contempt on his big face. An arrow from the wolf's bow soon stuck in his thigh, and turning round to pull this out another was driven at his neck, but, that part being covered with a dense mass of hair and strong bristles, the arrow fell to the ground. The grizzly now rushed at the wolf, and the latter was retreating, when the brindled skunk ejected in the bear's face. The wrathful bear made a stride to crush the skunk, but the wolf, dashing between them, drove another arrow into his nose, which gave the skunk time to seek shelter in his hole. The grizzly, seizing a dry branch that lay in the sun, made a strong cast with it at the wolf; but, being badly thrown, it was easily evaded. Thus they fought for a long time, until the grizzly became oppressed with the heat and very thirsty, but whenever he attempted to reach the water, the wolf pressed him closely, often leaving no more than a step between the grizzly's mouth and his own tail. The bear being now much worn by this mode of combat, the wolf howled to his wife:

"A stone, a stone,
A mole, a mole,
Come, quickly bring the stones, I pray:
A stone, a stone,
A mole, a mole!
Thus howls the wolf to guide the way."

On hearing this cry, on came the mole as fast as she could, led by a stout active frog, and the tortoise was made to carry the heated pebbles, in a hollow shell of rock, on her back; the frog held the shell steady with one hand, whilst with the other he led the blind old mole.

The wolf, taking one of the pebbles, slung it into the grizzly's mouth, which burnt him severely, and made him roar with pain. Seeing him in this state, two large wolves of the white tribe rushed in and gripped him fiercely, one on either side of the neck. In this position the grizzly gave the wolf on his right a blow with his fore arm, which brought him to the ground with torn ribs. Meantime the old wolf was busily employed in slinging the hot pebbles down the bear's throat, and, on the fall of his friend, the second wolf let go his hold and stood out of the bear's way.

The grizzly, dreadfully fatigued, was now sitting with tongue out and drooping eyes, when the wolf slipped into his mouth the last and hottest pebble he had; just at this moment a panther advanced and made a tremendous spring at the large grey wolf, bringing him down as if struck by a flash of lightning, and life left his body at the stroke, but the panther was in turn attacked by a dense cloud of wasps, herons, and martens, who cut his thews and harassed him so severely that he forsook the grizzly and fled for his life.

Now the old wolf signed to the cormorants, marmots, foxes, and loons, to go and sack the bear's lodge, but the bear's son guarded the entrance, and slew great numbers of them; however, on seeing a band of heavy beavers on their way, and well knowing how they could cut through his sinews, he forsook his lodge, and placing a load of meat on his back, growled loudly to his father, the chief grizzly, to follow him. This he did, and then the wolf and his hosts set up such a loud shout that it terrified the retreating bear and his friends, who made all speed from the fatal field.

Now came the pursuit of the defeated enemy; snakes hissed along, toads ran and tumbled, frogs leaped like shadows, mice squeaked as they ran, lizards with cocked up heads dashed onwards, the wolf, fox, and marten, waved their arms and tails for the people to press on. The tortoise and mole were left in the rear, the otter and beaver were in the van of the pursuers; dense crowds of cormorants, loons, hawks, ravens, magpies, herons, and cranes, screamed above the grizzly's head. Earth and sky re-echoed with the noise of the chase; the bear's camp was plundered, whilst the stag, mountain ram, and antelope, stood looking down from the hills, amazed spectators of the scene. A large herd of buffaloes, grazing on the skirts of the plain, were seized with a panic, and joining the retreating enemy, became

bewildered, and were driven over the precipices and deep rocky chasms, where not one of them survived to bellow in the morn. On their bodies the wolf and his people fared well for many days and nights.

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## VOCABULARY.

### CHINOOK JARGON, OR TRADE LANGUAGE.

*Words of English Origin.*

| | | | |
|---|---|---|---|
| Boat | boot | Sail; cloth | sal |
| House | hous | Ship; vessel | ship |
| Kettle | kit-l | Shirt | shut |
| How are you | kla-hô'i-ia | Shoes | shuus |
| Glass | klas | Sick | sik |
| To cry | klj | Skin | skin |
| Cold | kool | Smoke | smook |
| To run; hurry | kuú-ri | Snow | snoo |
| Lake | laak | Salt | sôlt |
| Lazy | laá-si | Salmon | sô'ô-mun |
| Rope | le-lop | Suppose; if | spoos |
| Rice | ljs | Tree; stick | stik |
| Rum | lum | Stone; bone | stoon |
| Man | man | Sturgeon | stút-shin |
| Musket; gun | mus-kit | Sun; day | sun |
| Moon | muun | Sugar | suy-aá |
| Name | naam | Dollar; money | taá-la |
| Nose | noos | Dry | tlj |
| Old | ó-lu-man | Jacket | tsháк-et |
| Father | pa-pa; ó-lu-man | Tomorrow | tum-ô'l-a |
| Paper; book | pá-pa | Wind | uin |
| Fire | p'j-a | Warm; hot | uôôm |
| Fish | pish | | |

*Words derived from Sound.*

| | | | |
|---|---|---|---|
| To laugh | hï-hï | Music | tin-tin |
| To boil | lip-lip | Bell | tiv-tiv |
| Cat | pish-pish | Heart | tum-tum |

*English and Indian Compounds.*

| | |
|---|---|
| American (Boston man) | bô's-tun man |
| Petticoat (lower coat) | kík-ui-li koot |
| Englishman (King George's man) | kin-shô'tsh |
| Woman (a good man) | kluútsh-man |
| Winter (cold land) | kool íl-la-hi |
| Ague (cold sickness) | kool sik |
| To untie, let go (to make slack) | maá-muk klak |
| To throw down (to make a smash) | maá-muk mash |
| To write (to make paper) | maá-muk pá-pa |
| To shoot (to make a shot) | maá-muk poo |
| Butter (cow grease) | muús-muus ylïs |
| Today (this day) | oó-kôk sun |
| Drunk (full of rum) | paát-lum |
| Brandy (fire water) | p'j-a tshuk |
| Tent (cloth house) | sal hous |

| | |
|---|---|
| Sailor (ship man) | ship man |
| Midday (half day) | sít-kum sun |
| Moccasins (skin shoes) | skin shuus |
| The east (sun comes) | sun tshaá-ko |
| The west (sun sits down) | sun mít-ljt |
| Girl (little woman) | tén-as kluútsh-man |
| Boy (little man) | tén-as man |
| Morning (little day) | tén-as sun |
| Falls (falling water) | tum uô't-a |
| Summer (warm land) | uôôm íl-la-hi |
| Fever (warm sickness) | uôôm sik |

*Words of French Origin.*

| | | | |
|---|---|---|---|
| Coat | ka-poó | Hand; arm | le-maán |
| Box | ka-saát | Sheep | le-mu-toó |
| Pork; bacon; pig | ka-shúu | Foot | le-pï'-a |
| Mouth | la-buúsh | Hen; fowl | le-pó-la |
| Medicine; doctor | la-mát-sin | Priest | le-praát |
| Hill; mountain | la-mô'n-tai | Saddle | le-sél |
| Pipe | la-pï'p | Shawl | le-shaál |
| Door | la-poórt | Silk | le-súa |
| Chair | la shaás | Teeth | le-tán |
| Table | la-taáp-l | Ice | le-ylaás |
| Head | la-taát | Nail | le-yloó |
| Biscuit | le-bís-kui | Mill | muú-la |
| Bridle | le-brï'd | Foolish | pil-tô'n |
| Axe | le-haásh | To sing | shôn'-ta |
| Neck | le-ká | Hat; cap | si-áp-o |
| Tongue | le-láv | To dance | tans |
| Wolf | le-luú | | |

*Words of Indian or other Origin.*

| | | | |
|---|---|---|---|
| By and by; to wait | ál-ka | Canoe | ka-ná-am |
| Other; another; different | al-loó-i-ma | To finish | ka-pá-at |
| Now; at present; then | ál-ta | To steal; to destroy | kap-siu-ô'l-la |
| Formerly | án-a-káat-i | Where | kaa |
| Sister | ats | Dog | káa-muks |
| Slave | el-i-tiúu | Tobacco | kái-nut-l |
| Quick; hurry | hái-ak | Low down; beneath; below | kík--ui-li |
| Very; large | hái-as | Flint | ki-lík-tin |
| Many; much | hai-iúu | To return; to come back | ki-li-pj' |
| None | háa-lo | Bottle | ki-lít-sut |
| What | ík-ta | Horse | kiúu-ten |
| Property; goods | ík-tas | Behind | kï'm-ta |
| Earth; land | íl-la-hi | Star | klak-sï' |
| Beaver | ín-a | Who | klák-sta |
| Across (a river) | ín-a-tai | To find | klap |
| With; to take; to get | ís-kum | To go | klat-a-uô'ô |
| Bow | iu-pítl-ki | Black | klaa-ï'l |
| That way; there | ï'-a-uô | False; to lie; to deceive | klem-en-úit |
| He; she; his; hers | ï-iák-a | Deep | klip |
| Before | ï'lip | Thread | kli-pj't |
| River | ï'-mat-l | Sour | klitl |
| Paddle | ï'-suk | Good | kloosh |
| Black bear | ï't-shuut | Perhaps | klúu-naas |
| Bullet; arrow | ka lái-tun | Ear | kól-an |

| | |
|---|---|
| All | kô'n-a-ua |
| Sky | ko-sáa |
| To break | kô'k-shit |
| To fight; to beat | kô'k-shut-l |
| White | kôô-kô'ô-uuk |
| So; thus; like; as; the same; similar | kô'ô-kua |
| How many; how much | kôô'-nt-shik |
| Hard | kul |
| Bird | kúl-la-kúl-la |
| Worthless | kúl-tus |
| Beads | kum-óo-suk |
| To understand; to know | kúm-taks |
| Both | kun-a-môô'kst |
| Why | kút-a |
| Afraid | kuôs |
| Always | kuô'ôn-sum |
| On; in; at; about; concerning | kuúp-a |
| A long time | la-la |
| To carry | lo-lo |
| Plate; pan | mál-ak |
| Bad | ma-sáat-shi |
| To buy; to sell | máa-kuk |
| To make | máa-muk |
| Dead | maá-ma-lost |
| You; ye; yours | mái-ka |
| Down (stream) | mi-aá-mi |
| To stand | míd-uit |
| To sit down; to remain; to reside | mít-ljt |
| We | miu-sái-ka |
| Elk | móo-luk |
| Duck | môôk |
| Ashore | mô'ôlk-uil-i |
| Food; to eat | múk-a-muk |
| Cow; cattle | múus-muus |
| Sleep; repose | múu-sum |
| Deer (applied to nearly all animals) | mó-itsh |
| Interrogative particle | na |
| Yes; surely; indeed | na-ít-ka |
| Otter | na-nô'ô-muks |
| To see; to look | náa-nitsh |
| I; my; mine | nái-ka |
| Our | niu-sái-ka |
| Mother | nôô |
| Road; trail | óo-i-hut |
| To exchange; to barter or trade | óo-i-óo-i |
| That; this | óo-kôk |
| Berries | óo-la-la |
| Hungry | óo-lo |
| Snake | óo-luk |
| Basket | óo-pi-kum |
| Knife | o-put-sáa |
| Brother | ôô |
| Frenchman | pa-sái-uks |
| Blanket | pa-sï'-si |
| Full | paatl |
| To give | páat-latsh |
| Red; blood | píl-pil |
| Green | pít-shish |
| Thick | pít-tshik |
| And | pï |
| Night | po-lúk-li |
| Powder | poó-la-la |
| Trowsers | sa-kô'ô-luks |
| Corn; bread | sa-pa-lïl |
| Above; high up; high; lofty | sák-a-li |
| Angry | saá-leks |
| Far off; distant | sai-iáa |
| Brown bear | sai-aám |
| To swim | shét-sam |
| Friend | siks |
| Button | sil-sil |
| Half; middle | sít-kum |
| Sweet | sï |
| Eyes | sï-iaák-os |
| Crooked | sï-pi |
| Indian | s'j-uôsh |
| Strong | skúk-um |
| Rain | snas |
| South | st'j-uak |
| North | stô-be-lo |
| To jump | sú-pi-na |
| Milk | ta-tuúsh |
| Yesterday | tá-ant-li-ki |
| Chief | tái-ï |
| Little; small | tén-as |
| To want to do a thing; to wish; to like | tík-a |
| White | ti-koóp |
| Heavy | til |
| Friend; relative; men; people | tíl-i-kum |
| Grass; hair | típ-su |
| To come | tshaá-ko |
| Immediately | tshík-a |
| Iron, or any metal | tshík-o-min |
| Water | tshuk |
| Mistake | tsó-lo |
| Barrel | tum-ó-lits |
| No | uik |
| Potato | u'ôp-i-to |
| To say; to speak; to tell | uôô-uôô |
| One | ikt |
| Two | môks |
| Three | klon |
| Four | laá-ket |
| Five | kuín-em |
| Six | túk-um |
| Seven | sin-a-mô'kst |
| Eight | stót-kin |
| Nine | kuj-ï's |
| Ten | taát-la-lum |

| | | | |
|---|---|---|---|
| Eleven | taát-la-lum pï ikt | Thirty | klon taát-la-lum |
| Twelve | taát-la-lum pï môks | One hundred | taát-la-lum taát-la-lum |
| Twenty | môks taát-la-lum | | *or* ikt tak-u-mó-nak |

*Indian Compounds.*

| | |
|---|---|
| Soon (a little wait) | ál-ka tén-as |
| The sea (great water) | hái-as tshuk |
| Hold your tongue (finish talking) | ka-paát uôô-uôô |
| To tie (to make fast) | maá-muk ká-o |
| To kill (to make dead) | maá-muk máa-ma-lost |
| To bring (to make come) | maá-muk tshaá-ko |
| To thirst (hungry for water) | oó-lo tshuk |
| God (the chief above) | sák-a-li taí-ï |
| Evening (little night) | tén-as po-lúk-li |
| Never (not ever) | uik kôônt-shik |
| I don't understand | uik nái-ka kúm-taks |

Where are you going?
*kaa maí-ka klat-a-uô'ô?*

I am going to Victoria to see the Governor, and shall return
*nái-ka klat-a-uô'ô mik-tó-lia naá-nitsh haí-as taí-ï pï sít-kum*
in a fortnight (half a moon).
*muun ki-li-p'j.*

Is Victoria far off?
*sai-iáa mik-tó-lia?*

Not very far, about two days' journey (two sleeps) if you travel
*uik hái-as sai-iáa, kluú-naas môks muú-sum spoos mái-ka hái-ak*
quickly.
*klat-a-uô'ô.*

How many salmon have you got?
*kô'ônt-shik sô'ô-mun mái-ka?*

Six, which you can have for a shirt or an old pair
*túk-um, kloosh oó-i-oó-i spoos mái-ka paát-latsh shut spoos ó-lu-man*
of trowsers.
*sa-kô'ô-luks.*

Have you any (no) venison?
*haá-lo móu-itsh mái-ka?*

No (none), I did not see any deer.
*haá-lo, uik nái-ka naá-nitsh móu-itsh.*

I want you to (my heart will be very glad if you) go as quickly as pos-
*hái-as kloosh nái-ka tum-tum spoos mái-ka hái-ak klat-a-uô'ô*
sible to Fort Langley, with a letter to the officer there, and bring back two
*poot láv-la paát-latsh tái-ï oô-kôk pá-pa, pï ki-li-p'j kó-pa*
men with their blankets, etc.
*môks man pï pa-s'ï-si pï ík-tas.*

Very well, but I have no food.
*kloosh, pï haá-lo múk-a-muk nái-ka.*

I will give you some pork,, and your wife plenty of
*nái-ka paát-latsh mái-ka-ka-shuú, pï mái-ka kluútsh-man hai-iuú*
molasses and beads.
*moó-las pï ka-moó-suk.*

I am very hungry.
*hai-iuú nái-ka oó-lo múk-a-muk.*

Come here, friend, I want to buy a horse.
*tshaá-ko siks, nái-ka tík-a maá-kuk kiúu-ten.*
How much will you give?
*kô'ônt-shik mái-ka paát-latsh?*
Fifteen dollars and a present.
*taát-la-lum pï kuín-em taá-la pï kûl-tus paát-latsh.*
I can shoot better than you.
*uik mái-ka maá-muk poo kô'ô-kua naí-ka.*
My father died a long time ago.
*sai-iaá án-a-kaát-i maa-ma-lost nái-ka pa-pa.*
That dog is very old, send him away.
*hái-as ó-lu-man oó-hôk kaá-muks, kloosh maá-muk klat-a-uô'ô.*
What are you doing?
*ík-ta mái-ka maá-muk?*
I am only smoking (eating tobacco).
*kûl-tus nái-ka múk-a-muk kaí-nut-l.*
I do not understand what you say.
*uik nái-ka kúm-taks ík-ta maí-ka uôô-uôô.*
To drink (eat water).
*múk-a-muk tshuk.*

In the Chinook jargon there is no article, the case is determined by the construction; the plural is generally formed by prefixing *hai-iúu* (many), and the superlative by prefixing *hái-as* (very). In speaking, a great deal is expressed by the stress of the voice on certain syllables, and by gesticulation, or the use of those signs with the hands which seem to be intelligible to all savage races. Any number of compounds may be formed, and almost every word receive a new sense, by prefixing *múk-a-muk* (to eat or take anything in the mouth, and *máa-muk* (to make or cause).

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VOCABULARY OF COWITCHAN AND SUMASS-CHILUKWEYUK.

| *English.* | *Sumass-Chilukweyuk.* | *Cowitchan.* |
|---|---|---|
| Man | suaá-kuts | suaá-ka |
| Woman | slaá-ni | slaá-ni |
| Boy | suaá-ka | sua-uú-lis |
| Girl | snaá-li-ulχ | maá-min slaá-ni |
| Infant | staát-la-kulχ | staát-la-kulχ |
| Father | maals | maan |
| Mother | taals | taan |
| Son | sua-uú-lis | suaá-ka ni-mún-na |
| Daughter | li-míl-la | slaá-ni ni-mún-na |
| Brother | sít-la-ta | suáa-ka nis-iïi-ia |
| Sister | nus-ká | slaa-ni-nis-iïi-ia |
| Indians; people | kual-o-muúχ | χua-ta-múuχ |
| Head | sk'j-us | sk'j-is |
| Hair | maá-kul | shô'i-a-tun |
| Face | saát-sus | ô's-is |
| Ear | kool | koó-lun |
| Eye | ká-lum | ká-lum |
| Nose | mô'k-sil | mô'k-sin |
| Mouth | tsaát-sum | tl-pô'i-sin |
| Tongue | tô'χ-sil | tô'χ-sin |
| Teeth | ïi-lis | ïi-nis |

| *English.* | *Sumass Chilukweyuk.* | *Cowitchan.* |
|---|---|---|
| Neck | túp-sam | túp-sam |
| Arm | taá-lo | taá-lo |
| Hand | tshá-liχ | tshá-lis |
| Fingers | snúχt-sus | snúχt-sus |
| Leg | spa-taá-lip | shúl-nits |
| Heart | skuáa-lo-en | skuáa-lo-en |
| Town; village; house | laá-lum | laá-lum |
| Chief | si-aám | si-aám |
| Friend | si-iaá-ia | si-iaá-ia |
| Kettle | tshuk-oós-ten | skuaá-lus |
| Bow | tôχ-uts | to'χ-uts |
| Arrow | saá-ko-liχ | skuil-ásh |
| Axe | shúk-o-man | shúk-o-man |
| Knife | klaát-sten | klaát-sten |
| Canoe | snoó-uulχ | snoó-uulχ |
| Moccasins | stuúχ-kin | stuúχ-kin |
| Pipe | spaát-la-maá-la | spaát-la-maá-la |
| Tobacco | spaát-lam | spaát-lam |
| Sun | si-ô'ôk-en | si-ô'ôk-en |
| Moon | sk'j-has | h'j-kaltsh |
| Star | kuaám-sel | kuó-sin |
| Day | su'j-il | u'j-il |
| Night | le-laát | nut |
| Morning | a-maá-mil su'j-il | maá-min u'j-il |
| Wind | spi-haá-lis | spi-haá-lis |
| Rain | sla-múχ | sla-múχ |
| Snow | si-ék | si-ék |
| Hail | spiuu | spiuu |
| Fire | haá-uk | haá-uk |
| Water | kôô | kôô |
| Ice | spiuu | spiuu |
| Earth; land | si-át-sam | ta-muúχ |
| River | staá-ti-lo | tloó-lo |
| Lake | haát-sa | haát-sa |
| Hill; mountain | ts'ï-tsil shmaalt | ts'ï-tsil smaá-nut |
| Iron | haa-l'ï-tan | spaál-tan |
| Leaf (of a tree) | is-tshat-ï'-la | tsaa-ts'ï-la |
| Grass | saaχl | saaχl |
| Pine; tree | χua-la-muúχ | skua-la-muúχ |
| Flesh; meat | shm'ï-is | shm'ï-is |
| Dog | ska-m'j | ska-m'j |
| Horse | sti-kaá-o | sti-kaá-o |
| Bear (black) | spaas | spaas |
| Wolf | sta-k'j-ia | sta-k'j-ia |
| Deer | hô'ô-put | hô'ô-put |
| Mosquito | kuaal | kuaan |
| Duck | ti-lúk-sil | ti-núk-sin |
| Bird | môôk | môôk |
| Grouse | skúts-skuts | skúts-skuts |
| Salmon | is-ku'ï-ia | suk-u'ï |
| Name | nôô | nôô |
| White | puχl | puχ |
| Black | is-ka-uúχ | núk-a |
| Red | es-tshaá-uχ | tshi-ku'ïm |
| Great | haak | li |

| *English.* | *Sumass Chilukweyuk.* | *Cowitchan.* |
|---|---|---|
| Small | a-maá-mil | maá-min |
| Strong | kuô'ôm-kum | kuô'ôm-kum |
| Old | si-aá-li-kua | uúχ-lïs |
| Good | j | j |
| Bad | kul | kul |
| Handsome | j saát-sus | j ô's-is |
| Dead | kô'ô-a | kuô'ô-i |
| Cold | tsaát-lum | h'j-til |
| Warm | kô'ô-kus | kuôs |
| I | túlt-sa | únt-sa |
| You; ye | túl-a-uô | túl-a-uô |
| Many | kuχ | kuχ |
| Near | stét-is | tl'j-til-kui |
| To-day | ten-a-u'j-il | ten-a-u'j-il |
| Yesterday | tshi-láaχ-til | naá-tiχl |
| To-morrow | uj-aá-lis | uj-aá-lis |
| Yes | a-laá-ha | ha-hóu-sjt |
| No | ô'ô-ua | ô'ô-ua |
| One | lút-sa | nut-sa |
| Two | a-saál | a-saál |
| Three | kla-uúχ | kla-uúχ |
| Four | χút-sil | χô'ô-sin |
| Five | χla-kaá-tshiss | χla-kaá-tshis |
| Six | táχ-am | táχ-am |
| Seven | slak-saá-la | tsô'ô-kus |
| Eight | ta-kaát-sa | ta-kaát-sa |
| Nine | ta-uúχ | ta-uúχ |
| Ten | oó-pul | oó-pun |
| Eleven | oó-pul ïts lút-sa | oó-pun ïts nút-sa |
| Twelve | oó-pul ïts a-saál | oó-pun ïts a-saál |
| To eat | aaχt-l | il-tin |
| To drink | kô-kaá-kan | kô-kaá-kan |
| To run | hum-χaá-lum | hu-xaa-num |
| To sleep | aá-lut | aá-lut |
| To see | kuaá-tshet | sa-ma-nuúχ |
| To come | maás-ta-la | kuú-sa-ua |
| To walk | aá-miχ | aá-miχ |

*Additional words collected at Sumass and Chilukweyuk.*

| | | | |
|---|---|---|---|
| Forehead | sko-múls | Eating trough | la-shaán |
| Crown of the head | skôô-ta-luχ | Boots (English) | χlaá-χil |
| Eyebrow | tsa-múl | Hat | iaás-ôk |
| Chin | kua-li-aát-sil | Trowsers | ska-uús |
| The Deity, God | ts'ï-tsil, si-aám | Shirt | skla-paá-uan |
| Paddle | ska-múl | Blanket | pa-kúl-a-uat |
| Pole used in poling canoe | sôk-ten | Spoon | kla-o-uúlχ |
| | | Midday | tôχ suj-il |
| Stone hammer | shtaúlt-sish | East wind | sô'ô-titsh |
| Wooden chisel | χo-haat | West wind | is-tsháa-kum |
| Wooden needle | tskuáa-mit-si-ten | Clouds | shuaát-setl |
| Hook | kôi-úk | Rainbow | sa-kal-haá-lim |
| Basket | sï-tan | Cedar | χpj |
| Mat | uaal | Birch | sa-koó-ma |
| Rush used for making mats | saá-kan | Cedar bark | skló-ua |
| | | Prairie land | spéχl-kul |

| | | | |
|---|---|---|---|
| Reed | o-kúl-la | Far off | tshôôk |
| Berry | is-nátsh | Shallow | sχaáχ-an |
| Salmon berry | a-laá-la | Deep | sklup |
| Black berry | skuou-la-uuúχ | Quick | u-hum |
| Straw berry | is-tshï-ia | A cripple, Deformed | spaá-tshis |
| Cranberry | kum-tsháa-lis | To return | kô'ôl-tsa |
| Potatoes | sko-uuúts | To boil | kuls |
| Grizzly bear | kuáa-tshin | To fire a gun | kúa-liχ |
| Skunk | tsa-paák | To do, To make | i-js |
| Goose | aχ-aá | To paddle | eχl |
| White headed eagle | pô-kus | To break | li-lúk |
| Weak | o-maá-ma | To give | aχ-ust |
| Sick | kô-kaá-i | To want | aa-la-kut |
| Angry | ka-iô'ôt | Fort Yale | hooχ-a-laalp |
| How much | kuaá-la | Fort Hope | tskals |
| How many | kuaá-los | Fort Langley | kuôôlt-l |
| What | int-si-aá-mi | Victoria, V. I. | tsô'ô-mas |

*Proper Names of Men and Women.*

| | | | |
|---|---|---|---|
| aásth-luk | ut-saá-mel-tuχ | o-li-oóχ | sal-súk-na |
| klem-aát-tshi-tan | kj-aá-pa-sat | sak-uíl-tun | skaá-kil |
| shuô'ô-lis | ï'sth-la-tan | ko-kuaá-lum | fr'ï-si |
| aáχ-o-luχ | sal-i-χál | j-ï't-sal | pul-ta-laát |
| tshi-luχ-kaa-lum | sal-uχ-taál | | |

SUJ-ÉL-PA. COLVILLE INDIANS.

| | | | |
|---|---|---|---|
| Man | skul-ti-maá-uuχ | Neck | kis-pán |
| Woman | tχla-maá-luχ | Hand; arm | kï'-liχ |
| Old man | klaχ-klaχ-aáp | Fingers | tsô'ô-ujkst |
| Old woman | pit-iu-aá-nuχ | Nails | kôχ-k'j-nikst |
| Boy | ti-tuú-it | Body | sk'jl-tik |
| Girl | shi-shuú-tum | Foot; leg | stuú-χjn |
| Maiden | staá-ka-miχ | Toes | tshóô-χj'n |
| Infant | uôχ-taá-lut | Bone | stshïm |
| Father | (*m.*) la-oó, (*f.*) més-tum | Heart | spoos |
| Mother | (*m.*) skoó-is (*f.*) toó-um | Blood | mil-kï'-ia |
| Husband | h'j-la-ua | Chief | el-a-maá-χum |
| Wife | 'nôχ'-a-nôχ | Warrior | su-pil-sto-uaá-iχ |
| Son | skuô-sï' | Friend | sa-laáχt, *also* kôχ-a-maá-niks |
| Daughter | stum-ki-ï'ls | House | tshaá-tuχ |
| Brother | (*eld.*) el-káχ-tsa, (*yr.*) elt-sï'-sint-sa | Bow | tshi-kuá-nik |
| Sister | (*eld.*) el-kï'-ka, (*yr.*) el-tshi-si-oóps | Arrow | sk'j-lin |
| Indians; people | sk'j-li-uu | Kettle | χlkap |
| Head | tsá-si-a-kan | Axe | χú-la-min |
| Hair | ka-pa-k'jn-ten | Knife | nín-ka-min |
| Face | skut-luús | Flute, Indian | tshilχ-uôô |
| Forehead | ka-mï'l-shin | Playing cards | ma-mas-tshuú-ten |
| Ear | tín-na | Looking glass | aat-sun-tshuún-ten |
| Eye | st-klúu-stin | Matches | sôl-tsï' |
| Nose | spi-sáks | Beads | paá-pa-kous |
| Mouth | spi-luúm-tsin | Thread | staá-pa-kus |
| Tongue | ti-uúχt-sik | Vermilion | uút-sa-men |
| Teeth | h'j-ta-min | Soap | tsa-uús-ten |
| Chin | tkj-a-paást | Buffalo robe | spï't-sa |
| Beard | o-pit-sï'n | Blanket | tsï't-sam |
| | | Shirt | t·lo-uú |
| | | Trowsers | saát-la-χal |

| | |
|---|---|
| Leggings | haát-li-shen |
| Gloves | speks |
| Moccasins | kaá-χjn |
| Shoes (Eng.) | sis-taá-shin |
| Canoe (wooden) | staát-lam |
| Canoe (bark) | tlï-a |
| Money | ska-lóu |
| Pipe | si-na-maá-nuχ-ten |
| Tobacco | si-maá-nuχ |
| Gun | su-luú-lo-min |
| Gunpowder | ni-púk-o-min |
| Bullet | mi-la-maá-la-kua |
| Shot | tshi-m'j-is |
| Powder horn | suút-la-maá-pa-luk |
| Flint | tshín-tshi-lín-sten |
| Sky | ska-mó'ôs-kut |
| Sun; moon | hj-aát.l-nôχ |
| Star | sku-kuú-sin |
| Day | sal-la-χálť |
| Night | sin-kua-kuaátsh |
| Light | ku-ku-laál |
| Darkness | tshïm |
| Morning | sï'l-kuo-kuast |
| Evening | káχt-sis |
| Spring | tu-muú-lou |
| Summer | ses-tshóuk |
| Autumn | skj |
| Winter | sï's-tik |
| Wind | snaá-uut |
| Thunder | tshúk-ka-sa-kô'ôm |
| Lightning | suχ-uaá-kist |
| Rain | skjt |
| Snow | smaá-kut |
| Hail | tshi-si-luús |
| Ice | shuuú-int |
| Fire | so-rï'-slip |
| Water | sa-uúlk |
| Earth, Land | tum-hoó-lou |
| River | en-ti-át-kua |
| Lake | taa-kuat |
| Valley | en-lô'ôt |
| Hill | em-ma-kóï-uut |
| Smoke (of a fire) | spo-uúl |
| Island | só-nuk |
| Stone | hat-lúut |
| Salt | tsaar-t |
| Iron | uu-lo-laám |
| Wood | tslïp |
| Tree | tsil-tsál |
| Pine | saá-tulp (*pinus ponderosa*) kôk-uô-l'ï |
| Larch | tshúu-kuals |
| Leaf | pátsh-kul |
| Bark | ka-lï-lu |
| Grass | su-puú-lou |
| Berry | skua-lï's |
| Gum of pine | tát-sa |
| Kinnikinnik (*uva ursi*) | skuíl-sa |
| Flesh, meat | slouk |
| Dog | kék-a-uôp |
| Horse | sin-kal-tshas-káa-χa, *also* ko-uô'p |
| Mule | stóol-tsa |
| Buffalo, *also* domesticated animals | (*masc.*) sta-máalt (*fem.*)stshuút-lum |
| Bear | (*black*) ska-ma-hïst, (*grizzly*) sa-ma-hj'-yin |
| Wolf | (*large*) en-sï'tshin, (*small prairie*) sin-ka-lïp |
| Deer | stlat-sï'-num |
| Elk | as-háa-si-luks |
| Caribou, or reindeer | sta-ílt-sa |
| Beaver | stóo-niχ |
| Tortoise | er-ra-suúk |
| Fly | huχ-a-múl |
| Mosquito | sa-laáks |
| Musk rat | saá-nuk |
| Grouse | (*Canada*) skuχ-a-lúm, (*willow*) sus-uô'sh |
| Lynx | uô'ô-pup |
| Otter | élt-ku |
| Fox | ho-hôi-li-uu |
| Marten | paá-pa-kus |
| Mink | tsha-χa-lï-tshin |
| Squirrel | a-ï's-tshik |
| Goose | huú-sï-luχ |
| Crane | skui-rï-χjn |
| Eagle | mel-ka-nuúps, (*bald headed*) pa-kul-a-kj'n |
| Crow | iu-tï-luχ |
| Magpie | ann |
| Swan | spúk-a-miχ |
| Duck | sï's-la-χuum |
| Pigeon | hóot-sum-hóot-sum |
| Rabbit | spep-a-lï-na |
| Fish | an-tï-ta |
| Salmon | ta-taa-iχ |
| Sturgeon | tsum-túus |
| Trout | ho-mï'-na |
| Rattle-snake | ha-húu-lou |
| Snake | (*water*) skáa-uï-la, (*bow*) sua-uups |
| Bird | ska-kaá-ka |
| Egg | a-uú-sa |
| Feather | spuumt. (This word is also used for the fur of animals) |
| Wing | stuk-a-pïs-ten |
| Salmon weir | pi-nép |

| | |
|---|---|
| Priest | li-kuj'l |
| White | paá-uk |
| Black | ï-o-kúj |
| Red | ï-o-kuïl |
| Blue | ï-o-ku'ïm |
| Yellow | ï-kua-lí |
| Green | ï-o-ku'ïn |
| Name | skuest |
| Affection | háa-mi-ni-kous |
| Desire (for anything) | ka-ma-kaánt |
| Ripe | kukt |
| Broken; destroyed | móu-et |
| Strong | o-'ï-out |
| Great | s'ï-laχ-ua |
| Small | kek-ui-iuú-ma |
| Old | klaχ-klaχ-aáp |
| Young | sua-nuúmt |
| Good | hast |
| Bad | kast |
| Worthless (good for nothing) | ten-a-muús |
| Chatter-box (a term of derision) | ka-máa-mat-sïn |
| Angry | tsj'm-tsa |
| Hungry | skam-i-all-tun |
| Handsome | sua-nuúmt |
| Ugly | kast |
| Alive | χuil-a-χuélt |
| Dead | ti-laál |
| Cold | tsaalt |
| Warm | skuelt |
| I | ínt-sa...in...a |
| Those | ï-χ'ï-liχ |
| He | tshi-n'ïls |
| We | min-m'ï-mel-tit |
| Ye | án-uï...an...ak |
| They | ï-h'ï-liχ |
| This | áχ-a |
| That | iχ-'ï |
| All | si-aá |
| Many; much | ui-aat |
| Who | suaat |
| What | staam |
| How many | kuaá-niχ |
| But | pin |
| Very | si-si-uús |
| Already; now | klaa |
| Perhaps | maá-delt |
| Near | k'ï-kat |
| Far off | li-koót |
| Above; high up | am-u'ïst |
| Below; under | ni-huút |
| To-day; now | o-pi-naá. Same word used for now, immediately |
| Yesterday | pït-s'ïlt |
| To-morrow | haχ-a-l'ïp |
| A long time ago | k.saá-pa |
| Bye and bye | kuan-i'n-uï |
| Again; back | spelk-ló-sum |
| Yes | k'ï-o-ua |
| No | luut |
| One | naks...en-kó |
| Two | a-saál |
| Three | kát-lus |
| Four | moos |
| Five | tsh'ï-liks |
| Six | táχ-am |
| Seven | s'ïs-pilk |
| Eight | táa-miχ |
| Nine | haχ-a-nuút |
| Ten | oó-pun...oó-pun-ikst |
| Eleven | oó-pun-ikst elt naks |
| Twelve | oó-pun-ikst elt a-sáal |
| Twenty | a-saál oó-pun-ikst |
| Thirty | kát-lus oó-pun-ikst |
| One hundred | en-kô'ô-ken |
| One thousand | oó-pun-íks-ti-kun |
| To eat | ï't-lund |
| To drink | sï-oóst |
| To run | kj'-tshi-liχ |
| To dance | ko-i-min-só-ta |
| To sing | uán-iχ |
| To sleep | ï'tχ-iχ |
| To speak | kuel-a-kuéls |
| To see | uaá-kin |
| To love | haχ-a-maa-naχ |
| To kill | puúl-stun |
| To sit | a-muút |
| To stand | taá-liχ |
| To go | huú-ï |
| To come | shuó-iχ... uj skitsh |
| To give | ko-uaát-selt |
| To take | skui-nám...skuint |
| To walk | hu-is-toó-lou |
| To swim | ká-ram |
| To want | an-aχ-a-maá-naχ |
| To pack a horse | skuelt |
| Look (there)! | aát-sunt |
| A Canadian or Frenchman | tsae-ma |
| An American | su-áp-a |
| That is just right, *or* that suits you exactly | uj puut |
| Oh! I understand | aa a-maá-pi-nuúnt |
| Have you any, *or* have you no? | tám-ak uóp |
| I have finished, and am going away | uj tshins huú-ï |
| I am | tshin tshaa |
| What do you want? | staam an-aχ-a-maá-naχ án-uï |
| What do you say? | staam aks kuel-a-kuéls |
| My house | in tshaá-tuχ |

| | | | |
|---|---|---|---|
| My heart | a spoos | Your heart | ak spoos |
| Very cold | si-si-uús tsaalt | Very strong tobacco | si-si-uús si-maá-nuχ |
| Your house | an tshaá-tuχ | | |

*Proper Names of Men.*

| | | | |
|---|---|---|---|
| kuil-kuil-taáχ-an | kuil-kuil-taá-mi | tshin-tsha-muú-lou | pï-tô'l |
| kuil-kuils-tshï'lt | tsaám-ta | χal-lï'p-sa-ma-h'j | ti-naás-ket |
| kuil-kua-mï'-na | sto-i-kin | suaát-sa-kun | po-lút-kun |
| kuil-kuil-tuú-i | kes-iu-aá-liχ | | |

SPOKAN AND KALISPELM.

| | | | |
|---|---|---|---|
| Woman | si maám | Flesh, meat | skj'l-tik |
| Head | spíl-kan | Dog | sim-kuóo-kuas-a-máa |
| Hair | kô'ôm-ken | Bear | ent-klaam-ka |
| Forehead | stil-tsha-mj'-is | Wolf (small) | spï'-li-ia |
| Teeth | haχ-al-laá-uχ | Deer | tso-poó-li-uχ |
| Hand, arm | .tstsho-uaχ-un | Beaver | skal-lou' |
| Fingers | tshaa-lis | Grouse | (*Canada*) rkuôχ-a-luú, (*Willow*) skuts-skuts |
| Foot, leg | sto-shïn | | |
| Toes | tshô-shïn | Lynx | si-na-kuts-uúχl |
| Blood | sin-kóol | Marten | o-lôl-koól |
| Bow | skuaá-nitsh | Salmon | sam-klï't |
| Arrow | ta-ko-mïn | Trout | pisχ.l |
| Moccasins | kaa-shï'n | Bird | χuaá-ui-oó-la |
| Sun | spuk-a-náa | Wing | ska-puú-sa |
| Thunder | til-ta-laám | Great | ku-túu-iu |
| Rain | stï-paás | Bad | taá-ia |
| Hail | sa-luú-sa | Ugly | taá-ia |
| Fire | tso-lïp | To-day | ï't-χal-kuô |
| Lake | .tstshil-kal-lï' | Yes | uú-na |
| Hill | en-sa-môôk | No | taa |
| Stone | sï'-nish | Eight | hj'num |
| Wood | lô'ô-kua | To sing | tsa-uaá-nish |

The words given above are those which differ from the Colville or "Sweielp" Indian, and for facility of reference, the same numbers are used in the two vocabularies; the remaining words are identical in the three tribes. A slight difference of pronunciation was very noticeable amongst the "Spokans" and "Kalispelms," the χ of the "Sweielp" being generally softened into *sh*, as in the few examples given below :—

| *Sweielp.* | *English.* | *Spokan, &c.* |
|---|---|---|
| ïtχ-iχ | to sleep | ï't-shish |
| taá-liχ | to stand | taá-lish |
| an-aχ-a-maá-naχ | to want | an-aχ-a-maá-nish |

## XXIV.—*An Account of a Religious Festival, comprising Leaf Wearing, and the Hanging, or Cheddul.* By JOHN SHORTT, M.D., F.L.S., M.R.C.P.L., &c., General Superintendent of Vaccination (late Zillah Surgeon Chengleput), H.M.I.A., Madras.

[*Read Dec.* 12*th*, 1865.]

RELIGION has ever been a subject difficult of comprehension among all people and all nations throughout the world, and this accounts for the many differences of opinion, not only in the superstitions of the savage and ignorant who but dimly discern a superior and mysterious being as ruler of all things, but also among the learned who, notwithstanding authorities to refer to, yet differ on this important point, and are found ready in the defence of their peculiar opinion to suffer, and even to meet death. Perhaps among the Asiatics, the most devoted followers of their various sects are the Hindus, who are ever ready to sacrifice life or limb in honour of the deities they believe in.

About the time I was writing a paper on the leaf-wearing tribes of India for the Anthropological Society of London, I happened to show to a friend a drawing of these singular people, when I was informed of a leaf-wearing ceremony that took place annually in my own district, and of which I had never heard before. I determined to visit this place on the next annual festival, and satisfy myself of its nature and correctness. Accordingly, after visiting the place and witnessing the ceremony of leaf-wearing and the cheddul, or hanging, I sent an account of the occurrence soon after to the *Madras Times*, from which paper I now take the following account, believing that it may prove of interest to the Society.

### THE "CHEDDUL"* OR HANGING FEAST.

About twenty-five miles to the northwest of Madras is situated the large village of Perriapollium, which, prior to Mr. Pelly's amalgamation scheme, formed a Cusbah station, but is now comprised in the Trivellore Taluq. This village is famous for a temple dedicated to a goddess known by the several names of *Bowanee, Ammah, Ellai Ammah,* and *Marry Ammah*;† it is situated on the western bank of a river, which takes its name from the village, but is sometimes called *Malatarr.* The

* The Churruck Poojah of Bengal.

† By some "Kali," and is the Kali or Durga of Hindus generally.

river is about 200 feet in breadth, and only during the freshes of the monsoons is covered with water, at other times it is a bed of coarse sand through which a small stream flows along the eastern border. On the western side is situated the temple of Bowannee, in the middle of a small tope; it is a little building in the form of a *Gopura,* composed of brick and chunam, and enclosed by walls all round, and some minor buildings are contained within the enclosure. The temple is mentioned in Hindu mythology as a place of great sanctity, but the present building is apparently of recent origin. The annual festival takes place either late in July or early in August, and lasts a fortnight; it usually terminates on a Sunday, and the Cheddul, and other important ceremonies, take place on the last day. The number of people who are attracted here, during the annual festival, from Madras, and the surrounding villages, and some of them from much greater distances, is said to exceed 100,000, and from my own personal observation I do not think it could have been less, probably more. The tope surrounding the temple, and the bed of the river, literally swarm with human beings of both sexes, and every age, from the octogenarian to the new born infant with its mother. The whole place presents the appearance of a fair, temporary booths and bazaars are set up on all sides, in which are displayed, besides the usual articles of consumption, native jewellery, scents, colours, sweatmeats, fruits, etc. Cocoanuts in large heaps are to be seen on all sides, and are in great requisition. To a distance of a mile or two along the bed of the river the atmosphere is actually darkened by the smoke proceeding from the numerous fires on which rice is being boiled to make *pongul,* or offering, and cow-dung being used as fuel, from motives of economy, a dense mass of suffocating smoke rises from this locality, where some thousands of these pongul chatties are boiling. Sheep, goats, and fowls are slaughtered here by thousands, sometimes buffaloes; some two or three men being specially appointed for the work, and they are perfectly exhausted before the slaughter is over. A large bill-hook is the instrument used for the purpose, which in shape and size resembles a huge Burmese knife, and with one blow the head of the animal is severed from the body; the Poojalee takes possession of the head, and the owner who made the offering walks off with the carcase, which is immediately bought up for a mere trifle by individuals having an eye to business, and who come prepared to make purchases. Their agents start off with them to the Madras market, so that while the feast is going on a little business is being done quietly. Others cut up the carcase of the sheep, and freeing it from the skin and entrails, tie it whole on their carts to dry, it would appear; some again cut up the meat in pieces, string it on a cord, and tie it

about their carts to dry, and carts are to be seen all over the place, with the meat of the carcases that have been sacrificed hanging on all sides. The locality where the animals are slaughtered is at some distance from, but right in front of, the temple, and the filthy appearance of the place, from the blood of the slaughtered animals, is sickening; for days after the traces of the slaughter are visible, and are pointed out with much pride by those interested. The most curious of the ceremonies connected with this temple commenced this year (1864) on Sunday, August 7th, on which day the feast also terminated. Men, women, and children of all castes of the Hindoos, except Brahmins,* proceed to the river to bathe, and after a bath strip themselves of all clothing, and deck themselves with neem leaves; not a particle of clothing or anything of cotton is to be seen about their persons, even the middle string worn by native males, and called *unna-caver* is removed, and the yellow string to which the "*Thallee,*" or symbol of marriage, is attached, is taken off the necks of the females. A garland of leafy neem twigs fastened to a straw rope is tied round the waist, this leafy covering descends to the lower end of the thighs, and sometimes to the knees; the females hold a cluster of neem twigs in each hand, and cross their arms over the chest, and this comprises the whole of their dress; males have only the garland round the middle. Thus dressed, they rush up to the temple door, and from thence make their obeisance to the deity within, and then walk two or three times round the temple in conformity with some vow previously made, returning to the doorway, they make their obeisance, and then go to the river, where they divest themselves of their leafy clothing and throw it into the stream. After bathing and dressing in their ordinary clothing, they go and make their pongul, and offer such sacrifice in sheep, fowls, or goats, as their means will admit of; but there is no rule as to this, for some make their sacrifice before putting on their leafy dress. Sometimes men and women, after bathing in the river, lie down near the temple and roll themselves right round it; cattle also decked in neem leaves are taken round the temple. All these ceremonies are performed in the fulfilment of previously made vows, sometimes for deliverance from a bed of sickness or attack of small-pox; others who have prayed for a family, come, on the birth of a child, to carry out their vows. Prayers to Bowanee are considered of never failing efficacy in securing a family to the childless.

These ceremonies terminate by twelve o'clock, when preparations for the *Cheddul* or hanging feast commence. A large up-

* Brahmins attend on the sly occasionally; their women, more especially when childless, come in the hope of obtaining an offspring.

right shaft is staked into the soil, and to the upper end a circular pivot is fastened, some three or four feet in length, and to the extremity of this a cross pole or pivot is fixed just like that seen in a *picota,* which gives to the transverse pole an upward and downward play, like that of a picota, whilst the circular pivot on which it rests enables it to be turned round and round, thus giving the apparatus a double motion. Over one extremity of the cross pole a small framed awning, covered with red calico and bordered with a white frill, is fastened, and to the other extremity a long cord, so as to command the double action of the pole. The extreme height of the pole from which the man is suspended is 92 feet from the ground. The individuals who undergo the operation are men of ages averaging from 20 to 40, and they do it in fulfilment of vows, I believe; the number is limited, and there is consequently often a struggle among the candidates for the honour. On the 7th instant eleven were permitted to perform the ceremony of being suspended in the air by large iron hooks drilled through the skins of their backs. I remember reading from missionary and other reports, that individuals who underwent the operation were generally well narcotised previously, and I was determined to make use of the present opportunity to ascertain how far this was correct. I closely examined three of the eleven who were suspended that evening, and found that they had been fasting the whole day, and had taken neither food nor drink since morning; they were young men, averaging from twenty to twenty-five years of age; the heart's action was normal, the pulse calm and quiet, with a slight indication of weakness; the men themselves were cool and collected; each had a yellow handkerchief tied about his head, and a short pair of drawers called *chuddee,* of the same colour, and a yellow cloth filled with flowers and limes, was loosely tied round the middle. Thus equipped, they were brought up to the stand one after another. Here, after making their obeisance to the deity, one of them folded his arms and stooped forward, some (white) holy ashes of *tirunoor* were brought and drawn two inches wide transversely across the back in line with the inferior angle of the shoulder blade, then the ashes were dusted away, and the back was now closely scrutinised by two individuals who smelt of liquor. One of them now struck the back, about the base of the shoulder-blade on the right with the palm of his hand; the muscle beneath (what the doctors would call trapezius) contracted slightly, when he seized the skin with the forefingers and thumbs of both hands, and raised it a little off the back. His assistant now extracted an arrow-headed lance about two inches long from his waistcloth; this he screwed on to the point of a large iron hook of about half an inch in diameter at the thickest part; this being thrust through the skin, the arrow

head was removed and a lime was stuck on the end of a hook; the portion of the skin thus transfixed was about one inch in breadth; the same process was repeated on the left side, some cotton cord dyed yellow with turmeric was attached to the hooks, the pole was lowered and the cotton cord fastened to its point about three feet from the end; about six feet below another piece of cotton cord was tied on, and knotted into several loops. The man was now raised off his legs, and the big toe of each foot was inserted one above the other into the loops; this completed, the pole was raised, and the man literally hung in the air by the hooks in his back, his great toes resting in the loops. He raised both his hands united to the forehead and made obeisance towards the temple; by this time the pole had reached its perpendicular and his position was now reversed, he stood upright, being held above by the hooks in his back, and his feet resting in the looped cord. After he had remained in this attitude for a minute or two, the pole was lowered obliquely, so that he hung flat in the air, and in this position he was twirling round and round for about half-an-hour. During the whole time he scattered handfuls of flowers and limes from his waistcloth, whilst the crowd beneath struggled and fought to secure the flowers and limes thus showered down. The scene that took place is impossible to describe; the crowd seemed to have been transformed into a mass of inverted umbrellas, from the number of these articles thus held to catch a flower or a lime. Those fortunate enough to secure their object, at once walked away with their booty, for fear that some stronger individual should snatch it away from them. After the pole has been twirled round, it is gradually lowered, and the man extricated from his position. He takes care to reserve in his waistcloth a few limes and flowers, to present in person to the chief people present at the ceremony. The hooks fit so tightly into the skin that not a drop of blood escapes, and after the suspension, when the hook is extracted, there is no trace of bleeding from the wound, which is easily accounted for by the previous strain and pressure, but the ignorant crowd do not understand this, and attribute the absence of bleeding to the special interposition of the deity, and those interested make as much of the fact as possible, and attract the people's attention to it. As soon as the hooks are withdrawn, a little vermilion is placed on the wound, and the part is bandaged with a handkerchief. In the evening, the man who has undergone the operation breaks his fast for the first time that day by eating some sweetmeats and plantains, and drinking some milk, and for several days after he goes about in his yellow clothes, passing frequently from house to house, and receiving presents. Sometimes fed with milk and plantains. The strength and elasticity of the human hide is

well seen here, for only about an inch of skin is transfixed, on either side, and the weight it sustains, computed at the lowest figure, exceeds 100 lbs., for I am sure every one of the three men whose suspension we witnessed, exceeded that weight by 30 or 40 pounds. They take advantage of the skin of the back, as being thicker there than in any other part of the body. I remember seeing at the Medical College, Madras, some tanned specimens of the human hide; it certainly makes capital leather, quite as good as that of the ox. Religious enthusiasm and fanaticism inspire these men with a sort of false strength, which enables them to endure with fortitude this cruel rite; under the influence of the same feelings, individuals have been found in all ages voluntarily submitting to the like tortures. We were under the impression that the days of Cheddul hanging were over, and could hardly believe that this barbarous ceremony was allowed to be carried out within a few miles of Madras, the capital of the Presidency. The temple of Bowanee was built by the Zemindar of Venkul, who is, we believe, an educated man, and a late scholar of the Madras University. The sale of the neem leaves alone, with which the people who resort thither deck themselves, exceeds 800 Rs. It is an ascertained fact that either last year, or the one before it, the revenue from the sale of the leaves actually realised 800 Rs., and this year it is believed that it will exceed that sum. This is not all; the number of sheep's and goats' heads brings a small sum, and the fowls form another item in the revenue; for all the fowls taken there are not slaughtered. There is a small pandall raised in front of the temple, on which two men are seated, and the people bring the fowl there, and after performing certain ceremonies, throw the bird up to the men on the pandall, who secure it, and from an opening in the pandall throw it down to others below who are waiting to receive it; some thousands of fowls are thus secured, and many are resold immediately to undergo again the same process. With reference to the *Cheddul,* I must say that I saw it carried out some years ago at St. Thomas' Mount, when the foot rest was not given; the man literally swung in the air suspended by the hooks in his back. In the present instance, although the big toe was supported by a loop made of a cord, it could not have removed much of the strain from the hooks in the back.

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## XXV.—*Observations on the peculiarities of National Pronunciation as a means of tracing the Origin and History of Nations.* By the Rev. James Brodie.

[*Read April 25th*, 1865.]

All who have endeavoured to elucidate the early annals of the human race, concur in the opinion that a careful examination of the various languages used among men affords one of the best means by which we can be guided in our inquiries into the origin and history of nations.

A great deal of labour and research have accordingly been bestowed in discovering the original form of the vocables that different languages contain, and in tracing the changes which they have undergone.

At the same time, very little attention has been paid to the peculiarities of national pronunciation, and no one seems to have deemed the subject entitled to the notice of the philosopher and archæologist.

This neglect appears the more remarkable, when we find, on examining the subject, that the words of a language undergo continual changes, and these changes of the most arbitrary kind, while the peculiarities of pronunciation, either remain unaltered, or are modified under the guidance of fixed and determinate laws. We find, for instance, that in modern English the greater part of the words in ordinary use have been derived from the French, the Latin, or the Greek, while there is not, in so far as we can ascertain, a single articulate sound, whether vowel or consonant, at present used in English, that was not to be found in the original Saxon. The vocables have changed; but the characteristic pronunciation has remained the same. The sounds of the language, like the race that employs them, are of pure Anglo-Saxon descent, though a large proportion of the words which they compose are of foreign original.

Without entering on any elaborate disquisition on the subject, we propose to point out some of the more remarkable peculiarities which distinguish the languages of Western Europe, in order to shew how the principles we refer to may be made to elucidate our conclusions in regard to the origin and relationship of nations. We shall take the English, the French, and the Celtic of the Scottish Highlanders, as representatives, in so far as pronunciation is concerned, of the dialects employed in this quarter of the world.

*Pronunciation of w and wh, as in water and whale.* These

sounds may be said to be peculiar to Britain. In England, the aspirate in *wh* is very much softened, so that it forms an accent rather than a letter. In the Lowlands of Scotland, where the old pronunciation has undergone but little change, where, for instance. we find that *k*, when preceding *n*, as in *knife*, *knee*, and *knuckles*, continues to be distinctly articulated, the *wh* is articulated with a distinct guttural aspirate before the *w*.

These sounds of *w* and *wh* are not found in French. When a Frenchman, who has not been accustomed to the acquisition of foreign tongues, tries to pronounce them, they are changed into *v*, or if he endeavour more accurately to articulate them, the long sound of the *u* is substituted for the short diphthongal vowel *w*. *Walter*, for instance, is *Valter*, or if an effort be made to give a more accurate pronunciation, it is sounded *U-al-tair*, in three syllables.

In Celtic the *w* and *wh* are generally changed into *j* or *v*, but sometimes into *u* long. *What*, for instance, by the Scottish Highlanders is pronounced *fot*. Armstrong in his Gaelic dictionary tells us that "*William* and *Walter* become *Villeam* and *Bhaltair;*" and Dr. Murray says, "All the Celtic tribes change *w* or *v* into *f*."

In adopting words beginning with *w*, the Cymric or Welsh division of the Celts change it into *g* or *gu*. Such at least seems formerly to have been their practice. Thus Chalmers, in his Caledonia, tells us, that the wall built by Severus, called by the Romans *murus Severi*, and by the Saxons *the wall of Severus*, was "by the British population termed either *mur Sever* or *gual Sever*. A good many words, borrowed by the modern French from the British immigrants, who after the Saxon invasion went to France and formed the Armorican Republic, afford examples of this peculiarity as *guerre* for *war*, *garant* for *warrant*, *garde* for *ward*, and *gardien* for *warden*. As another example of this peculiarity we may remark that in the Welsh of former times the Latin *Vortigerius*, as Bede spells his name, which seems to be a slight modification of the Latin *Virtuger*, or *Virtugerens*, a bearer or possessor of bravery, became *Guortiger*, and *Guortigern*, as is shown by some old chronicles quoted by Camden; Nennius, he tells us, wrote "Guortigernus tenuit imperium in Britannia."

We may remark in passing, that, if it be true as some have said, that *Arthur* denotes in the old language of Britain a strong or valiant man, there may perhaps be some reason for concluding that the *Arthur* of Fable is the native British name of the brave old warrior who so long resisted the arms of the Saxon invaders.

*Pronunciation of the Diphthong* y.—This letter, at least when initial, is another peculiarity of the English. In French and in Celtic *y* initial is generally pronounced as *i* long.

This use of the *y*, however, is not so characteristic as is the frequent introduction of that vowel sound, after the letters *d* and *t*; thus *fortune*, from the Latin *fortuna*, is pronounced as if it were spelled with a *y*, *fortyun*, and *duke* from the Latin *duco* is pronounced as if it had been spelled *dyuk*.

We find no such tendency to introduce the short or diphthongal *i*, either in French or in Celtic.

*Pronunciation and use of the sibilant or hissing letters* s, z, sh, zh.—A partiality for these letters is one of the most striking peculiarities of the English. In this country, they are sounded softly, and, unless when accented, do not receive that strong articulation which in some measure renders them independent of the vowel sound, making *s* as the ancients termed it "suæ potestatis litera."

This partiality for those letters leads to the transformation of the diphthongal *i* or *y*, when it follows the letters *d* or *t*, into *sh* or *zh*. Thus Walker in his pronouncing dictionary tells us that *duke* should be pronounced *dyuk*; but that there is a pronunciation, as if it were written *dook*, and yet another impropriety, as he terms it, as if it were written *jook*. The derivation of the word shows that the original sound was *dook*, the approved pronunciation shews the tendency of the English to introduce the diphthongal *i*; the other sound, which he terms an impropriety, exhibits the transformation of the *y* or *i* short into *zh*. The best illustration, however, of the peculiarity we are now considering is the transformation of the common termination *tion*. It may be taken for granted that these letters were originally pronounced as they are written *tion*, but they are now universally pronounced *shun*.

A still more remarkable change is that which we find when *g* and *c* hard are changed into what we call the soft sounds of those letters; thus we have *George* from the Greek γεωργος, and *Charles* from the Latin *Carolus*, *jerk* from the Saxon *gerecan*, and *chalk* from the Saxon *calc*.

In French, instead of this introduction of the sibilant letters where they were not originally found, the *s* is frequently dropped where it used to be pronounced; thus *bête*, *conquête*, in old French were written, and we conclude were pronounced, *beste*, *conqueste*. The combination of sounds which form what we term *g* soft and *ch* are in French pronounced *zh* and *sh*, as in *George* and *Charles*.

In the Celtic the sound of the soft *g*, as in *George*, *Janet*, is generally changed into *se* or *de*. *George* is *Deorus*, or *Seorus* *Janet* is *Deonaid* or *Seonaid*. This *de* and *se* are further changed in *kh*. In the vocative *duras* is pronounced *khoras*. In like manner, the English sound of *ch* becomes *se* or *te*. *Charles* is Tearlakh, or Searlakh, and in the vocative is pronounced *liharlakh*.

The change of the sibilant letters into the guttural aspirates has been observed by all who have compared together the vocables common to the Celtic and Teutonic tribes. Dr. Murray, for instance, says that in Celtic "the *s* of the other dialects is almost always changed into *h*."

*Change of* l *into a diphthongal* i.—Another change of letters, common in Scotland, though not found in classical English, is the transformation of the letter *l* after *p* and *b* into a short *i*, thus *blin* in Scotland is often pronounced *byn*, and *pleuch* or *plough* is *pyu*. Besides these changes, which may be considered as peculiarly characteristic of the English pronunciation, there is another which seems to have originated in the deference paid to French as the language of the Court and fashionable life. In French the aspirate gutturals are not used, hence, probably, they came to be regarded as harsh and vulgar by those who gave the tone to manners and pronunciation, and have fallen into disuse in English.

In Anglo-Saxon we have every reason to believe that the sounds both of the aspirate *g* and the aspirate *k* were employed. They continue, at the present time, in the cognate dialects of Holland and Germany, and we can easily trace the changes to which they have been subjected in English.

When the present orthography of English was adopted, we find no letter or combination of letters, employed to represent the aspirate *g (gh)*. We, therefore, conclude that at that time it had fallen into disuse. We find, however, the letters *gh* employed in those words where the Saxon had the aspirate *k*, and conclude that that was the sound given to the *gh*, when the English orthography was adopted. This supposition is confirmed by the fact that, in Scotland, where, as we before remarked, the pronunciation has undergone comparatively little change, that sound is still retained; *rough, thought, bought, wrought, daughter*, are still sounded as they are spelled.

In Celtic the aspirate gutturals are of frequent occurrence.

In French they are unknown. This, however, may be ascribed to the fact, that in the Latin, from which the vocables of the French are derived, these letters are not found.

There are other peculiarities which might have been enumerated—the peculiar accent, for instance, which distinguishes the Celtic; but those that we have mentioned are the most important.

When we come to consider pronunciation as a means of classifying language and races, we find the peculiarities of English so clearly marked, as to lead to the conclusion that it must have been originally distinct. French, on the other hand, closely resembles Celtic, the want of the aspirate gutturals, and of the peculiar count of the Celts, form the only remarkable distinction between them. We cannot, therefore, decide whether French is to be re-

garded as having been originally distinct, or is to be looked on as a branch of the Celtic, modified by intermixture with other tongues.

In order to show how an examination into the peculiarities of national pronunciation may help to guide us, not only in our endeavours to classify nations and races, but in our researches into the history and intermixture of different tribes of men, we shall now proceed to direct attention to the language of ancient Rome, and to the modern dialects that have been derived from it.

*Pronunciation of Ancient Latin.*—Latin has been so long a dead language, that it might seem at first impossible to determine the sounds originally given to its letters. The ancients, however, paid such attention to their speaking, and some of the classical authors, more particularly Quintilian among the Romans, and Dionysius of Halicarnassus among the Greeks, have given such minute descriptions of the peculiarities of their pronunciation, that the task is not so difficult as might at first be supposed. Without adducing the arguments by which we have been led to our conclusions, we shall simply state the result of a careful investigation into the sounds of the Latin alphabet.

The Latin *v* was pronounced as the English *w*.

The Latin *j* was pronounced as the English *y*.

The Latin *qu* had a sound originally resembling that of *wh* in *what* and *where;* at least there are some good reasons for this conclusion.

In tracing the change of Latin vocables into modern Italian, Provençal, French, and Spanish, we have abundant evidence that the Latin underwent the same changes that Anglo-Saxon has done in its transmutation into English.

Vowels are changed into diphthongs in the same manner.

The sibilant corruptions for which English is so remarkable; that is, the change of *t* and *k* into *tsh*, of *d* and *g* into *dzh*, are as abundant in the languages derived from the Latin as they are in our own. The Roman *natio, natiōnis*, a nation, becomes the Italian *nazione*. The Roman *hodie*, to-day, becomes the Italian *oggi*. The Roman *Kikero*, for such was the original name of their most distinguished orator, becomes *Tshitshero*. The Roman *gens, gentis*, a race, becomes the Italian *gente*.

The transformation of *l* after *p* and *b*, into a short *i*, which we meet with in Scotland, is found in Italy. The Italian *piu* representing the Latin *plus*, and the Italian *piuma* the Latin *pluma*.

We may also add that, to whatever cause we may ascribe it the Latin, like the English, wanted the aspirate gutturals. In al their essential characteristics, Latin and Anglo-Saxon pronunciation agree.

How two races, using languages so very different, in so far as their vocables are concerned, happen to agree in characteristic

pronunciation, we do not stop to inquire. We simply state the fact, and are prepared, if called on, to substantiate our statements.

*Pronunciation of Italian.*—That the words which constitute the Italian are derived from the Latin all will allow. That a large proportion of the changes which have been made in the original Latin words, in their transformation into Italian, exactly correspond to those which we find in the change of Anglo-Saxon Into English, is also evident. There are, however, two changes of a very different kind.

The Latin *v*, pronounced as *w*, is now changed into *v* or *b*.

The Latin *j*, pronounced as *y*, is changed into *dzh*.

This change of sounds, so characteristic of the Latin, into others so totally different, can only be explained on the supposition that a race of invaders speaking a language which had an altogether different pronunciation, had adopted the speech of the Romans, and modified it to suit the articulation to which their own organs of speech had been accustomed. Then, as we find in almost every instance of the intermingling of diverse races, the vocables of the mass of the people would constitute the language of the united nation, while the tendency, so universal among men, to imitate the style and speech of the upper classes, would gradually induce the multitude to adopt the pronunciation of the conquerors.

History confirms the conclusion to which we are thus brought, by an examination into the peculiarities of the Italian language. On the decline of the Roman power, various hordes of barbarians, of whom the Goths were the most distinguished, invaded the provinces of Italy, intermingled with the original inhabitants, adopted their language, and formed the states of modern Italy.

*Pronunciation of French.*—When we examine the language of France, we find that, while the larger part of the vocables can be traced to the Latin, showing that the descendants of the old Roman settlers must form a large proportion of the present inhabitants, there is, at the same time, a larger admixture of foreign roots than in the Italian, indicating a more varied intermingling of races.

We find, again, that the characteristic peculiarities to which we formerly referred, are so very different, both from those of the Latin and those of the Italian, that we are led to conclude that a second race of invaders, distinct from the first, had overcome and mingled with the Gotho-Roman population, as the Goths had done with the Romans.

Whether the Sicambri, who are regarded as the founders of the French monarchy, spoke the same language as the Goths who preceded them, we have no means of ascertaining. History, however, fully corroborates the conclusions drawn from the principles we have been advocating, as to the variety of races that have been united to form the population of France.

*Pronunciation of Spanish.*—In this language, the vocables are in general derived from the Latin; we therefore conclude that the mass of the population derive their origin either from Roman settlers, or from aborigines who had become completely Romanised, and had adopted the Latin tongue.

If we give to the letters of the Spanish alphabet the same sounds that we give to those in Italian, the agreement between the two languages is so close, as to lead to the conclusion, not only that the Romans in Spain had been conquered by tribes of kindred origin with those that subdued their brethren in Italy, but that the proportion, in point of numbers, between the invaders and the invaded, must have been nearly the same in either case.

When we examine further, however, we find that the letters *j* and *g* soft, which in Italian are sounded *tsh*, as in *cera*, wax, is pronounced in Spanish *th*, as in *kera*. The transmutation of *dzh* in *kh* is so decidedly one of the Celtic characteristics, and the change of *c* soft into *th*, so closely resembles some of those that are peculiar to that tongue, that we are led to infer that the Gotho-Roman population must have been subdued by a race of Celts, who adopted the language of their subjects, but retained their own mode of pronunciation.

An examination of the Spanish language shews, in the first place, that the mass of the population are of Roman origin. It shows, in the next place, that a Gothic race conquered and amalgamated with the older settlers; and it shews, in the third place, that this Gotho-Roman population, in an after period, after their language had been brought into form, and reduced to writing, had been subdued and incorporated with a Celtic tribe.

At first this conclusion seems inconsistent with the statements of history; for, though we read of the conquest of Spain by the Visigoths, and of the invasion of that country by the Moors, no mention is made of a Celtic immigration. A more careful examination, however, shews that there is the most perfect agreement between the conclusions that we have drawn from their languages and the testimony of ancient records.

Hallam, in his history of the middle ages, says: "Nothing can be more obscure than the beginnings of those little states which were formed in Navarre and the country of Soprarbe. They might, perhaps, be almost contemporaneous with the Moorish conquests. On both sides of the Pyrennees, dwells an aboriginal people, the last to undergo the yoke, and who never acquired the language of Rome. . . . . The town of *Jacca*, situated among the long narrow valleys that intersect the southern ridges of the Pyrennees, was the capital of a little free state, which afterwards expanded into the monarchy of Arragon. A territory rather more extended

belonged to Navarre, the kings of which fixed their seat at Pampeluna. The connection between Arragon and Navarre was very intimate, and they were often united under a single chief. At the beginning of the eleventh century, Sancho the Great, king of Arragon and Navarre, was enabled to render his son Ferdinand, count, or, as he assumed the title, King of Castile."

From these little states, founded by the aboriginal Iberians, Hallam shews that the present rulers of Spain derive their origin. An examination of their language, and an examination into their history, concur in shewing that the founders of the present Spanish monarchy were altogether distinct from the Roman, Gothic, and Teutonic races who dwelt around them.

The characteristic pronunciation of Spanish further shews that they were closely allied to the Scottish Highlanders, and distinguished by several remarkable peculiarities, not only from the Romans and Goths, but from the Welsh or Britons, by whom England and Wales were peopled.

Traditionary history confirms this supposition, and tells us that the Scottish Celts came originally from Spain. In Blind Harry's *Wallace*, book i, we have the following lines :—

> "The croune he tuke upon that sammyne stane
> At Gadalos send with his son fra Spane;
> Quhan Iber Scott fyrst intill Ireland come.
> As Canemor, syne King Fergus has it nome,
> Brought it till Scoone, and stapill mad it thar."

Recent archæological research has brought to light a circumstance, which, trifling as it is in itself, curiously confirms the old tradition. In the estuary of the Clyde, several rude boats have been dug up. They are generally formed of a single tree, and appear to have been hollowed out, partly by fire and partly by stone implements of the rudest kind. One was found which had a hole in its bottom closed with a piece of cork. . . . . The cork tree grows only in Spain. We cannot suppose that the rude savages who paddled their canoes on the Clyde had such intercourse with Spain, as to bring cork into Scotland, in the usual course of trade between different nations. There must have been some special tie connecting them with that country. If, as we have been led to conclude, the Scots were a colony of Iberians, there is nothing improbable in the conjecture that not only the piece of cork filling the hole in its bottom, but that the boat itself came from the great Peninsula. Perhaps it was the identical vessel

> "As Gadalos sent with his son fra Spane."

These observations on the peculiarities of national pronunciation, as a means of tracing the origin and history of nations, embody some of the results to which the author was led by the

speculations of his younger days. At that time, he found but few who seemed to take any interest in ethnological research. At the present time, the inquiry into the origin of the various races of men has become the subject of learned investigation and philosophical debate, and he hopes the remarks he has made may induce some one, possessed of greater talent and greater leisure, to take up the investigation he has suggested, and to carry it on to a more successful issue than he has been able to do.

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## XXVI.—*An Account of the Mookwas in the District of Putlam.* By SIMON CARIE CHITTY MANIEGAR.

[*Read June 13th*, 1865.]

AMONG the various tribes of people who inhabit the different parts of this district, the Mookwas (or, as they call themselves, Mookooger, from Kooga, the ferryman, mentioned in the Ramayana, whom they look upon as their progenitor), constitute a very industrious and peaceable body of subjects; and their number is estimated at 1,500 souls. These people are partly Mohammedans, and partly Christians, of the Roman Catholic persuasion, and according to their own account (supported, however, by no kind of evidence), were originally emigrants from Ayódhya, or some part of Oude, in Hindostan; but they are ignorant of the period when the event happened. The striking resemblance which they bear in certain customs to the Nayrs and Mucuas on the coast of Malabar, encourages a supposition that they must originally have emanated from one of the two, and that when that country was persecuted by the Mohammedans from Arabia, with a view to promulgate their creed, they (the Mookwas) transported themselves into Ceylon, and established their residence in the Malabar provinces. From the information which I have been able to collect, it appears that the place where the Mookwas first landed was at Coodremallee, and from thence they emigrated to other parts of the island, and, in the course of time, formed several settlements. Some time after the arrival of the Mookwas in the district, their chieftian, named Veddi Arasen, had to contend with a rival, called Mánica Talaiven, who then presided over the people denominated Karroyar, and who possessed a settlement on the south side of the district. Mánica Taiaiven dispatched some of his officers to Veddi Arasen, and solicited him to give him his daughter in marriage; but, meeting with a refusal, he collected a considerable body of armed men, and went to war with the Mookwas, vowing their total destruction. As the Mookwas were at that time a very weak and defenceless people, they concerted with the crew of an Arab vessel, which was then at anchor at Coodremallee, and with their assistance slew the rival chieftain, and put all his troops to flight. This skirmish is said to have taken place in the plains between Mangalleneley and Catacádoo; and to support their assertion, they point out an anthill in the vicinity (known by the name of *Mánican Puttoo*), as the place where the remains of the slain chieftain were interred by the victors, after their revenge had been fully satisfied. In return for the service rendered them by the Arabs,

the whole of the Mookwas embraced the Mahommedan religion, which, however, many of their descendants afterwards renounced in favour of Christianity, through the influence of the Portuguese.

After the defeat of the Karreyas, the Mookwas determined to send an embassy to the court of the Emperor, in order to ingratiate themselves in his favour. They accordingly made choice of certain individuals for the purpose, and dispatched them to Sitavaca, with many costly presents. When these delegates reached the capital and presented themselves to the Emperor, he received them with uncommon kindness, and granted them several copper *sannasses*, on rescripts, whereby the lands in the whole district of Putlam and Calpentyn were allotted to them for their maintenance as Paravany, or, as it was subsequently designated Koppumoori Paravany, from their having broke out and planted boughs of trees, as a boundary to their respective portions of land, when the division took place. Besides the assignment of land, the Emperor constituted a royal tribunal at Putlam, called Mutracoodam, and appointed eighteen of the Mookwas to be members of the same, under the authority of a Dessave, who was to be annually sent from the court; and also conferred on the said eighteen members the title of *Wannias*, with the following privileges; viz., "That the offices they held should be hereditary in their respective families; that they should not be capitally punished for any crime; that they should be exempted from the payment of tithes; and lastly, that their relations, to a certain degree, should be free from performing any personal labour to government." On referring to the *sannasses* inscribed on the copper plates (of which there are but two extant), and comparing them with the account given of the lands having been allotted to the Mookwas by the same Emperor, and at the same period, there seems a great discrepancy; because, of the two *sannasses* in question, one appears to have been given by Tariam Valla Bahu, king of Madampa, and the other by Buveneca Maha Rajah, emperor of Sitavaca, at two distinct periods; but they account for it by saying, that these *sannasses* were granted to their chiefs in after times to confirm the original donation of the land on the part of the former Emperor, who, they say, was Malala Tissa Rajah, and who reigned between the years 753 and 779 of our era.

However this may be, the Mookwas appear to have been in possession of the whole lands in the district during the government of the native emperors, and for a considerable period maintained a sort of aristocratical government under their chiefs, till the district was captured by the Dutch, who, from political motives, not only abridged their powers, but also monopolised several sources of their incomes.

The tenure under which the lands were held, exhibits a strong

resemblance to the feudal system of Europe, and according to the original institution, they were not in any way alienable; but in course of time, the Indo-Moors (who settled in the district some time after the Mookwas), gaining an ascendancy over them by their pecuniary influence, gradually bought up all their lands for very trifling considerations, so that none remain at present in possession of their ancient property.

After the Dutch conquest, the Mutracoodam, or tribunal at Putlam, was abolished, and the *Land Raad* established in its place; out of the afore-mentioned eighteen *Wannias*, six were dismissed as superfluous, the remaining twelve appointed to officiate as members of the same, under the presidency of the chief president or *Opperhoofd* of Calpentyn, allowing them, in lieu of pay, exemption from tithes on their cultivation only. Since the island has been a British colony, and the ancient form of government newly modelled, the *Land Raad* has been abolished, consequently the office and title of *Wannia* became extinct. The descendants of the *Wannias* are, however, not called upon to perform any menial labour at present, and a few of them are occasionally commissioned by the collector to assess the tithes in the district.

Having endeavoured to give an account of the origin and history of the Mookwas in the preceding pages, I shall now proceed to exhibit a brief description of their distinctions, manners, and customs.

The Mookwas are subdivided into seven distinct tribes, each denominated after the name of its founder, or the particular occupation professed by him. They are as follows:—*Pichánda vagaiyár; Nallánda vagaiyár; Pálah vagaiyár; Koita vagaiyár; Kálanga vagaiyár; Mudivilanga Pándi Tavor vagaiyár; Valangana vagaiyár.*

The Mookwas bear a close resemblance to the Tamulers, both in their physiognomy, manner, and gait. The dress of the men consists of a cloth wrapped round the waist, a shawl loosely thrown across the shoulder, and on the head they wear a turban, but, like the Singhalese, they never perforate their ears. The women have their ears bored, and decorated with gold earrings of various kinds, and their dress does not in the least differ from the Moors.

The Mookwas, both Christians and Mahommedans, are placed under the orders of a headman, called Vidhana Odeyár, holding a commission under the hand and seal of the Commissioner of Revenue, and through him the people are called upon to perform services to government whenever there is occasion for it.

With regard to the ceremonies of marriage among the Mookwas, those who are Christians follow the rules of their church, and those who are Mahommedans abide by the ordinances contained

in the Koran; but both sects observe the custom of having the *Tály*, or gold string, tied round the neck of the bride by the bridegroom, to confirm the union, on which occasion they generally decorate their houses with white cloths, and display many honorary distinctions.

Besides this ceremony, peculiar to the Hindoos, the Mookwas also observe the *Feast of Purification* on the seventh day after a girl is grown marriageable, by inviting all their friends and relations to an entertainment, and decorating the house with white cloth, etc. This is now, however, losing ground among the Christian part of the Mookwas.

In like manner, when a boy attains a certain age, the ceremony of tying the *talacheela*, or head-cloth, round his head for the first time is performed. It is done in an auspicious hour, under the roof of a *pandal* built for the purpose (either in connection with the dwelling-house, or detached from it), and decorated with white cloth. The people are invited by presenting them with a number of *betel* trays, calculated according to their rank, and when they are assembled, the young man on whom the ceremony is to be performed, is seated on a covered stool, and the barber, first asking permission of the assembly, shaves his beard, rubbing it with milk. When he is shaved, he is conducted to a well, under a canopy, and cloth is spread before him to walk upon; he washes his body, returns to the *pandal*, and places himself on his seat. The *talacheela* is then set on a salver, and handed round to each of the guests to touch, after which the chief of the *caste* takes it up, and ties it round the head of this youth. On this occasion the guests severally make a present of money to the parents, and return to their houses.

The Mookwas differ from all other castes in Ceylon with regard to the right of succession and inheritance in the following particulars. When a Mookwa dies, his sons and daughters inherit equally, but share between them only the property acquired by him during his lifetime; the property which he had received from his ancestors, called *moodoosom*, devolves to the sons of his sister, or, in failure of heirs in that branch, to the sons of his mother's sister's daughter, and so on to the fourth degree; but in failure of heirs in all these degrees, it then goes to his own children.*

Among the Mookwas the prejudice of caste is more rigidly attended to than any other tribe; the least infringement of a rule will subject the offender to be *ipso facto* excommunicated from the community, and deprived of the services of the barber and washermen; consequently they are very circumspect in their conduct.

* This singular custom being only found to correspond with that which prevails among the Nayrs of Malabar, I have been induced to advance the opinion that the Mookwas must have originally emanated from them.

## XXVII.—*On the Destruction of the Aborigines of Chatham Island.* By W. TRAVERS, Esq.

[*Read March 7th*, 1865.]

I PROCEEDED to the Chatham Island Group by a schooner (the Cecilia, of 40 tons), which sailed from Lyttelton on the 12th October last. Our voyage was slow and somewhat uninteresting; and it was not until the 19th that we sighted the Horns—two conical-shaped hills on the south-western extremity of Chatham Island. On the way down we met large numbers of right whales, lump-backs, and porpoises, and were, as usual, accompanied by albatrosses and Cape pigeons. After sighting the main island, we proceeded directly to Pell's Island, and came to anchor off a rocky point forming the western extremity of a small bay at the north end of the Island, and at the head of which is the residence of Mr. Frederick Hunt, an Englishman, who had been settled there for nearly twenty years. Opposite Mr. Hunt's house is a rock called the Flower-pot, which forms a shelter for boats engaged in landing or shipping goods. The house is close to the beach, and is surrounded by about two hundred and fifty acres of cleared land, mostly laid down to English grasses, and divided into paddocks, forming a very compact and well cultivated farm. With the exception of these clearings, and of insignificant patches of open land in various parts of the island, the whole of Pell's Island is covered with beech.

I was received with great civility by Mr. Hunt and his family, who invited me to stay with them during the time I should be engaged in collecting plants, etc. On this occasion, however, I remained on Pell's Island for a week only, having been detained by a tremendous gale from the north-west. We left on the 26th, and reached Waitangi, a Maori settlement on Chatham Island, on the following day. Here I presented my letters to Captain Thomas, the Collector of Customs, by whom I was treated most courteously, and who promised to give me every assistance in his power in carrying out the objects of my journey.

Waitangi is the chief Maori settlement on Chatham Island, and is situated at the south-eastern extremity of Petre Bay, which forms an indentation, some seventeen or eighteen miles deep, on the south-western side of the island. But for this bay the shape of the island would have been nearly that of an isosceles triangle, of which the south-western side would have formed the base. A small but deep river flows into the bay close to Waitangi, washing

on its western side the foot of some low ridges of reddish sandstone. This river drains a considerable tract of hilly ground on the south side of the bay, and is also fed by a stream running from a lagoon at the head of the bay. Were it not for a bar at its mouth, vessels of from forty to fifty tons burthen might enter it, as, inside the bar, the water is deep for a considerable distance inland. The huts of the Maories and the residence of Captain Thomas are situated on low ground, on the east side of the river. The Maori huts are built of fern-posts, lashed together with strips of supple-jack, and thatched with toi-grass, resembling in all respects those found in the old Paho in New Zealand. Captain Thomas's residence is built in the same way, but is plastered inside and out with clay, and whitewashed, and the roof is shingled. A chapel belonging to the Church of England natives is a very handsome specimen of their style of building. The inside walls are lined with fronds of tree ferns, from which the pinnules have been stripped, and which are interwoven in a curious manner with leaves of Phormium tenax. The roof is braced with boards having white scrolls painted on a red ground. The outside walls and roof are closely and smoothly thatched with toi-grass. The building is about fifty feet long and nearly thirty broad, and about the same height to the top of the roof. There is a smaller building, used as a chapel by the Roman Catholic natives, built in the same style, but highly decorated and more neatly kept. The population of Waitangi, including a few More-ore slaves, numbers about one hundred and fifty, all told. Their huts are surrounded by well fenced paddocks, laid down to English grasses, but the grass is now almost smothered with the common English daisy, mustard, and dock, which are spreading rapidly over the whole island. The Maories generally possess considerable numbers of horses, cattle, and pigs, which run in common on the open lands and in the bush. They cultivate large quantities of potatoes, maize, pumpkins, and onions, which they supply to American whaling ships resorting to the islands, and occasionally export to New Zealand. I did not find that they cultivated any European fruits, but they use largely that of a small species of nightshade, indigenous to New Zealand, which they had introduced to the Chathams. There are also Maori settlements at Subong, on the north-western side of the island, and at Taupeka and Kaingaroa, on the north side, having altogether a population of some four hundred souls, all told.

The remnant of the More-ores (the name given to the aboriginal inhabitants), exclusive of the few who are still retained in slavery, is settled at Ohangi, on the south-eastern side of the island. They do not exceed two hundred in number, and are said to be rapidly decreasing. I believe this to be the case, for during my

six months' stay not less than eight deaths occurred amongst them. In their habits of living they now assimilate to the Maories, and speak a language compounded of their own original language and that of the New Zealanders. Before the invasion of the islands by the New Zealanders, which took place about the year 1832 or 1835, the More-ores were very numerous, numbering little short of fifteen hundred people. They are much shorter, but stouter built, than the New Zealanders, and have darker skins, but the same straight coarse hair. Their faces are rounder, and more pleasing in expression. Their noses are Roman in shape, resembling those of the Jews. They never tattooed, and although they originally practised cannibalism, they had discontinued it before the arrival of the New Zealanders. They appear to have been a very cheerful people, fond of singing and of telling laughable stories. Their habits of living, however, were originally very rude and improvident. They built no huts, merely using a few branches of trees stuck into the ground as a shelter from the wind, Their chief food consisted of fish, shell-fish, birds, and fern root; which latter they prepared in the same manner as the New Zealanders; but the women always eat apart from the men. Like many other savage tribes, they were very indolent, seldom seeking food until pressed by hunger. They had no canoes, there being no timber on the islands sufficiently large for constructing them; but they formed rafts of the flower stalks of the Phormium tenax, lashed together with supple-jack, and having an upright wooden stem ingeniously carved. The paddles were shaped like a spade, and were used at the stern of the rafts, very much in the same manner as a spade would be used in digging. They made stone axes, similar to those of the New Zealanders; and these, with clubs, etc., constructed from the harder woods growing on the islands, formed their weapons. In their own quarrels, it was understood that the first blood drawn terminated the battle. Such fights were uncommon, and were generally for the possession of a seal's carcase, or some mass of whale-blubber, which happened to be cast ashore, both of which were esteemed choice delicacies. They had no hereditary chiefs; the most successful fisherman, or bird-catcher, or any member of the tribe distinguished by extraordinary stature, or for any useful physical quality, being looked upon as an authorised leader. They had no idea of a God in our sense of the term, nor, so far as I could learn, of evil spirits; but they looked upon a good fishing or birding ground as being the gift, or rather under the charge, of an 'Alua' or good spirit. Their mode of disposing of their dead had special reference to the particular vocation or fancy of the living subjects. If the dead person had been a good fisherman, for example, his body was lashed, in a sitting posture, to a raft, and sent adrift with a baited

line in its hand. If he had been a noted bird-catcher, he was fixed in a stooping position, between two trees, facing the particular hill or other spot which he usually frequented. If he had no particular vocation, he was put, in a sitting posture, into an open hole in the ground, usually about eighteen inches deep, with any favourite piece of carved wood stuck up before him. So far as I could learn, the chronology of the More-ores, unlike that of the New Zealanders, is very defective; and, consequently, they are unable to fix, even proximately, the date of their first arrival in the islands. They say, however, that they came in two canoes, one of which drifted to sea again, but that the other was preserved for a considerable period. They are quite in the dark as to whence they originally came, but as they resemble the Mangaia Kanakas, who form a large proportion of the crews of the American whaling vessels, I conceive it is not improbable that they have the same origin.

The islands were invaded in 1832 or 1835 by the New Zealanders, by whom large numbers of the aborigines were killed and eaten. In fact, the expedition of the New Zealanders may be said to have been undertaken solely for the latter purpose; a Maori, who happened to have visited the islands whilst engaged as a seaman in a vessel trading from Sydney, having reported the aborigines as a plump, well-fed race, who would fall easy victims to the prowess of his countrymen. By a refinement of cannibal cruelty, the unfortunate wretches were compelled to carry the wood and prepare the ovens in which they were to be cooked. Such of them as were destined for the nonce to be eaten were then laid in a row upon the ground adjoining the ovens, and were killed by blows from a 'mere' by one of the Maori chiefs. It is not more than twenty years since the Maories gave up their feasts. Although I found the remains of numerous More-ore skeletons in the woods in Pell's Island, I was unable to get one in good condition. I have, however, brought over several authentic skulls, which will probably be interesting for ethnological purposes.

As I had determined to make Pell's Island my head quarters, in consequence of its offering greater advantages as a collecting ground, I took the opportunity of my first visit to Chatham Island to travel round it. Accordingly, in the month of October, accompanied by Mr. Hunt, who had come over with me from Pell's Island, I started for the Red Bluff, about six or seven miles north of Waitangi. The road led partly through a belt of bush, which for a depth of two or three miles forms a fringe round a large portion of the islands, and partly along the sea-shore. The weather, unfortunately, was extremely wet, as, indeed, it was during the whole of my stay on Chatham Island. The bush con-

sisted principally of Eurybias, Coprosmas, Karaka, Dracophyllum, Solanum, etc., with several tree ferns, amongst which I noticed Cyathea Dealbata; the whole so interwoven with our old friend the supple-jack as to be almost impenetrable. Amongst the ferns I found a Lomaria, closely allied to, if not identical with, Lomaria Discolor, Phymatodes Billardieri, and Pustulata, and several others common in the bush of New Zealand. On the beach, the Myosotidium nobile grew with rank luxuriance, wherever it had not been invaded by the pigs, which fed eagerly upon the roots. The Maories dry the leaves and smoke them, as a substitute for tobacco. Where the sea shore was sandy, I noticed a coarse grass, identical with one of those which occurs upon the Dunes near Christchurch.

From the Red Bluff we proceeded to Wanga-roa, on the north side of Petre Bay, and from thence, leaving a large tract of sand hills between that place and Tubong on our left, we crossed to Wari-Kawri, on the north side of the island. This route led us past several small lagoons, apparently destitute of water plants, but fringed partly with rushes and partly with bush similar to that before described. The country here is low, and is now covered with a young growth of grasses and sedges mixed with Pteris esculenta, and with occasional patches of Phormium tenax. On the sandy tract before alluded to (between Wangaroa and Tubong) I noticed large quantities of a small but beautiful shrub, growing amongst the sand grasses above referred to, and fern. From Wari-Kawri we proceeded to Taupeka, once a large Maori settlement, but now containing only a few huts. Here we slept, and on the next day went to Kainga-roa, travelling along a sandy beach fringed with bush, into which we occasionally passed in order to avoid rocky points projecting into the sea. With the exception of a Eurybia, I found no plants in flower; and, indeed, the weather was so extremely wet that I gave up all idea of collecting at that time. We remained at Kainga-roa for three or four days, one of which I spent at the residence of Mr. Shand, at Wakura, by whose family I was hospitably entertained. From Kainga-roa we went to Okawa or Waikerri, formerly the principal Maori settlement, and the chief scene of their cannibal festivities, and from thence returned to the Red Bluff, passing over the great lagoon, along a reef, which lies about a foot below the surface of the water, and crosses it from east to west. This reef is generally from forty to fifty yards broad, but occasionally narrows to fourteen or fifteen yards, and has a sloping bank on each side.

The lagoon is nearly twenty miles in length from north to south. and from eight to nine broad at the north end, narrowing to three or four at its southern extremity. It almost intersects

the island, the space between the north bank and the sea shore being little more than two miles broad; whilst, at the south-eastern end, it is only separated from the sea by a sand bank a hundred or a hundred and fifty yards in width. This bank is periodically broken through by the accumulated waters of the lagoon; the beach, after the lagoon has sunk to high water mark, being repaired by the wash of the sea from the south-east. The lagoon is in some places bordered by extensive spongy tracts of Jungermania, in others by grasses, sedges and rushes, and in others again by bush similar to that which occurs on the sea shore. I did not find any water plants, such as Potamogeton, etc., in any of the lagoons; though in the centre of a small lagoon on the north side of the island I observed some vegetable substances spread upon the surface of the water. In consequence, however, of the depth of the water, and of their distance from the edge of the lagoon, I was unable to obtain any specimens.

The general surface of Chatham Island, except of that part which lies to the south of Petre Bay, is low and slightly undulating, with occasional hills. For example, on the tract to the north of the bay to the left of the route from Wanga-rao to Wari-Ḳauri, there are three or four conical hills, attaining an elevation of six or seven hundred feet, and some lower hills near the sea coast on the north side of the island. These hills are clothed with bush from top to bottom. The country, to the eastward of the great lagoon, is very low, scarcely rising in any part more than fifty feet above sea level. The peninsula, to the south of Petre Bay, is more hilly, the hills presenting from Jenny Reef to Cape Fournier abrupt escarpments to the sea. The soil is peaty, and is often fifty feet deep. In several parts of the island this peat has been on fire for years, burning at a considerable depth below the surface, which, when sufficiently undermined, caves in, and is consumed. I have seen the loose ashes arising from these fires upwards of thirty feet deep. In one place I noticed, in the burning peat, at the depth of six or seven feet from the surface of the ground, the trunks of trees of a growth evidently far exceeding any that are now to be found on the islands. I was, I am sorry to say, unable to obtain any specimens, in consequence of the great height of the wall of peat and the mass of hot ashes below. The surface growth, inclusive of bush, consists principally of grasses and sedges, with patches of fern; but I have little doubt that a large number of indigenous herbaceous plants have been destroyed, partly by the constant firing of the surface by the natives, and partly by the pigs, cattle, and horses which roam all over it. Nearly the whole surface of the country had, in fact, been burnt shortly before my arrival.

There are, at present, but few land birds either on this or on Pell's Island. Formerly, the white crane (*Herodas flavirostris*), the bittern (*Botaurus melanotus*), an apterix, said by the Maories to have been identical with a New Zealand species, and also, according to their accounts, a smaller species of the same bird, the Weka (*Ocydromus Australis*), and the Kakapo (*Rhigops habroptelus*), were found on both islands, but have become extinct since their invasion by the New Zealanders. Mr. Hunt informed me that the last time he had seen the bittern was about three years ago. The land birds now found are a large falcon, the pigeon, the lui or parson bird, the pukeko (*Porphyrio melanotus*), the parakeet (*Platycercus N. Z.*, Dieff.), the fantail, the pihoihoi or lark, and a small titmouse, all identical with the birds of the same species found in New Zealand. I was told by Mr. Hunt that the pigeon was first seen on the islands within the last eight years, and that the titmouse appeared shortly after the occurrence of the great fire in Australia, known as the Black Thursday fire. Mr. Hunt is a very careful and trustworthy person, and as his statement relative to the pigeon was confirmed by the Maories, I have full reason for believing what he told me in regard to both birds. Of aquatic birds, I saw the grey duck, brown teal, and two species of shag common in New Zealand, and a number of gulls and other sea birds similar to those which frequent the coasts of that country. Mutton birds were extraordinarily numerous on a rock known as the Fort, lying between Chatham and Pell's Islands. During my journey round Chatham Island, of which I have given you an account above, I saw a peculiar teal on one of the lagoons near the Red Bluff. This bird had bright scarlet markings on the wings. I fired at it, but owing to the great dampness of the weather the gun I had with me hung fire, and I missed the bird. I never saw another specimen, and was informed that it was very uncommon. The number of land birds of all kinds, however, is extremely limited. Indeed, it is rare to meet with any at all during a whole day's walk in the bush. I attribute their destruction principally to wild cats, the progeny of imported animals, although I was informed that a species of gull also attacks the land birds, and is especially destructive to poultry.

Besides wild cats, which are common on both islands, there are on Chatham Island swarms of the Norway rat and English mouse. I believe there were no indigenous terrestrial mammals on either island, not even a bat, but seals of several kinds, and whales and porpoises are abundant on the coasts, the former frequenting reefs at some distance from the shore.

I left Chatham Island about the 25th of November, and proceeded to Pell's Island, where I took up my residence with Mr.

Hunt. As I have before mentioned, the whole of Pell's Island, with a very trifling exception, is covered with bush. In my first rambles in the bush, both here and on Chatham Island, I was struck with the perfect identity of the great majority of the plants with those of New Zealand; but, as you will observe from the collections I made, I felt it my duty to take even those about which I had no doubt whatsoever.

In connection with the remarkable similarity of the flora generally with that of New Zealand, I may mention that, in a small tract of bush on the margin of the great lagoon, I found three trees of the Edwardsia Microphylla, all growing close together, and being the only specimen of that plant that I saw on either island. They were not in flower or fruit at the time. They were apparently all of equal age, and were about five inches in diameter and fifteen feet high. Mr. Hunt, to whom I pointed them out, stated that he had never seen the plant before. During my residence at Pell's Island, I was in the habit of examining the coast of the bay in which Mr. Hunt's house is situated twice a day for some months; and on one occasion I found a sawn plank of the totara, and on another a seed of the same Edwardsia, which had evidently been washed ashore, probably from New Zealand. The seed was hard and sound. I gave it to Mr. Hunt, who sowed it, but there has been as yet no time to learn the result. I also saw on the beach logs of white and red pines (*Dracrydium excelsum* and *Dracrydium mai*) and totora, which had been washed ashore some time previously. This would indicate the existence of currents direct from New Zealand to this place, probably favoured by the set from Cook's Straits and south-westerly gales.

There is but one hill on Pell's Island which does not exceed six hundred feet in height. It is perfectly flat-topped, the summit having an area of about eighty acres, covered with peat to the depth of five or six feet, and supporting a mixed growth of grass, fern, Phormium tenax, and shrubs. From the summit of this hill a good view of the whole group of islands is obtained. I was, unfortunately, unable to visit South-east Island, which appears to be the highest land in the group, and which I was told contained several plants not to be found on either Chatham or Pell's Island. I had one opportunity of visiting it, but owing to the great dampness of the season, I was afraid to leave my collections, which required unremitting attention. During one short absence I lost a very large number of plants, including my only specimens of Euphorbia, Edwardsia Microphylla, and Mesembryanthum, which, on my return, I found to be one mass of mildew. The several members of Mr. Hunt's family were, during the whole time of my stay, so busily employed in their various

duties, that I felt I could not impose upon them the extra task of attending to the plants, and this prevented me from visiting the various outposts and reefs connected with the Chatham Island group.

In regard to insects, etc., my knowledge is too limited for me to venture upon many observations respecting those which occur on the islands. I noticed, however, amongst others, the common New Zealand blue-bottle, and yellow flesh flies, and the European or Australian house fly. Mosquitoes and sandflies are abundant. In the bush I saw a considerable number of spiders, including one very large Mygale, which also frequented buildings, making its nest in the thatch. I found several beetles. Moths and butterflies were rare; the few I met with being apparently identical with New Zealand species.

Several introduced plants are spreading rapidly; for example, the white clover, the English daisy, the dock, the mustard, the English burr (which grows with the utmost rankness in the bush on Pell's Island, often to the height of three feet and upwards), the Polygonum, found on the Canterbury plains, the wild strawberry, and others. Indeed, from the luxuriance and rapidity with which these plants grow, I have little doubt that, if not checked, they would soon overcome and replace the indigenous herbaceous vegetation. All kinds of introduced vegetables grow with great vigour, and since the importation of bees, European fruit trees and bushes have produced freely. In conclusion, I would suggest that if any other person should be tempted to visit the islands for botanising purposes, the months from December to April inclusive would be found to be the best season.

END OF VOL. IV.

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