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A HANDBOOK OF MESOPOTAMIA

VOLUME II

IRAK, THE LOWER KĀRŪN, AND LURISTAN

Prepared on behalf of the Admiralty and the War Office

PROVISIONAL ISSUE

ADMIRALTY WAR STAFF
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NOTE

Mesopotamia is treated in four volumes. The first volume contains matter of a general nature. The other volumes are devoted to the detailed description of the river and land routes. The second volume covers the regions of the Shatt el-'Arab, Kārūn, and Luristan, and of the Tigris and Euphrates up to Baghdad and Fellūjeh. To the third volume are assigned the Tigris and Euphrates from Baghdad and Fellūjeh to Mosul and Meskeneh, the Lesser Zāb, the country East of the Tigris towards the Persian frontier, and the routes running westward from the Euphrates valley across the Syrian Desert. The fourth volume treats of the country North of the line joining Rowanduz, Mosul, Meskeneh, and Aleppo up to Van, Bitlis, Diarbekr, and Mar'ash.

All estimates of mileage must be considered as approximate only. In most cases they are based on the rough calculations of travellers, or on the times given by travellers, or on sketch-maps or incomplete surveys. The question-marks placed beside some of the figures indicate that these are peculiarly doubtful: it is not implied that other figures may be regarded as exact.

It is necessary to emphasize the fact that in the circumstances the information given cannot be complete, and that conditions are constantly undergoing change. The Admiralty will be glad to receive corrections and additions.

Maps to accompany these volumes will be issued separately.

ABBREVIATIONS

In the itineraries the following abbreviations and conventional signs may be noted:—

r. = right. l. = left.

h.w. = high water. l.w. = low water.

I. = Island.

T.L. = telegraph line.

T.O. = telegraph office.

P.O. = post office.

m. = miles.

The following signs are used to distinguish distance:—* by river; † by road or track; ϒ crow-fly.

Distances are given throughout in statute miles.

Alt. = altitude, which is given in feet above sea-level unless otherwise stated.

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INTRODUCTION

THE ROUTE SYSTEM OF IRAK, THE KĀRŪN REGION, AND LURISTAN

General Remarks.—In the alluvial plain lying between the Persian Gulf and Baghdad, and bounded on the NE. and SW. by the Persian mountains and the Arabian Desert respectively, the main lines of communication are the four great waterways of the Shatt el-'Arab, the Tigris, the Euphrates, and the Kārūn. The Shatt el-'Arab is the gate of Irak and of Arabistan; the Tigris and the Euphrates lead from the Shatt el-'Arab through the length of Irak to the region of Baghdad and to Upper Mesopotamia; the navigable part of the Kārūn gives access from the Shatt el-'Arab to Northern Arabistan and the important oil-springs of the Shushtar district.

For movement by land the country is, as a whole, exceedingly difficult. Large areas are covered by permanent lagoons and marshes; others are liable to inundation in the spring and early summer; canals and irrigation cuts, which before the war were either unbridged or traversed only by light and narrow wooden structures, intersect the regions under cultivation; the alluvial soil is apt to become very heavy after rain; and there are great expanses of country in which scarcity of water, either at all seasons or in summer and early autumn, prevents any considerable traffic or movement of troops. Hence the outstanding importance of the river routes for commerce and for military operations. In 1914 there were no metalled roads in Irak, and south of Baghdad wheeled traffic was used only on the roads leading from that city to Kerbela and Hilla. In Arabistan there were a few tracks north of Ahwāz, on which the Anglo-Persian Oil Company apparently used wheeled transport. Other tracks, leading across open desert or steppe, though passable for guns and carts either all the year round or in certain seasons, had been used only by caravans of pack animals. There was then no railway south of Baghdad.

Approaches to Mesopotamia from the Persian Gulf.—The only good approach to Mesopotamia from the Gulf is by the waterway of the Shatt el-'Arab, up which ocean-going steamers can ascend to

Mohammareh at the mouth of the Kārūn and to the port of Basra. The only drawback to the navigation of the Shatt el-'Arab is Fāo Bar outside its mouth (see *Route* I A). From Basra to Kurna Bar the Shatt el-'Arab is apparently navigable by vessels of 11 ft. draught in the low season, and by vessels drawing 15–16 ft. in the months of high river. The channel over Kurna Bar seems to have a least depth of about 7 ft. in a low river and 13–15 ft. in the high-water season (see *Route* I B).

As regards land communication along the Shatt el-'Arab, it appears that troops could march in the dry season from Fāo to Basra on the edge of the desert behind the fringe of cultivation. Before the war the going on this track was made very heavy by rain, and parts of the road were liable to inundation in the flood season (see *Route* 1). On the l. bank a little-used track, impassable after rain or floods, ran from Mohammareh to a point opposite Basra (see *Route* 3).

Above Basra troops can apparently now march along the r. bank of the river to Kurna at all seasons (except possibly in exceptionally high floods), the intervening creeks being bridged (see *Route* 2). The l. bank should be passable in the dry season or in moderate floods, if the larger intervening creeks and the Suweib River were bridged. In the low-river season the creeks S. of the Suweib could, it is said, be turned by a détour of some miles inland. After rain or floods the Suweib marshes would be either difficult or impassable.

E. and W. of the lower course of the Shatt el-'Arab the country is mostly marsh or desert (sand and gravel N. of Koweit, alluvium elsewhere), and the coast is fringed with shoals and mud-flats.

W. of the Shatt el-'Arab there are the following approaches to Basra from the Gulf. (i) It would be possible to land at Koweit Bay (see p. 401), and thence follow one of the comparatively easy desert routes which lead to Zobeir (see *Routes* 23 d–a). The Shatt el-'Arab being excluded, this seems the least difficult entrance to Mesopotamia. (ii) Between Koweit Bay and the Shatt el-'Arab are the inlets of the Khōr es-Sabīyeh and the larger Khōr 'Abdallah leading to the Khōr eth-Tha'alab and the Khōr Zobeir, the head of the last-named channel being only about 11 m. from Basra. For details of these inlets see *Route* I C. Landing from these *khōrs* is apparently difficult in most places owing to mud-flats, marshes, &c. On the W. side of the Khōr es-Sabīyeh, the Khōr eth-Tha'alab, and part of the Khōr Zobeir, runs the desert-route Zobeir—Koweit *via* Umm Qasr (see *Routes* 23 a, 23 d).

NE. of the Khōr 'Abdallah and E. of the Khōrs of Tha'alab and Zobeir there stretches towards the Shatt el-'Arab a desert largely liable to inundation in the flood season. The NE. shore of the Khōr

'Abdallah is marshy. Boat channels are believed to lead from it to the Shatt el-'Arab (e. g. at Hamdān and Abu'l Fulūs, between Mohammareh and Basra). Between the head of the Khōr Zobeir and Basra the country may be flooded in spring.

E. of the Shatt el-'Arab there is (i) the Bahmān Shīr River, leading to the Kārūn a short distance above Mohammareh (see *Route* II B); can be navigated by vessels of 7 ft. draught for 30 m.; thereafter it is choked for the rest of its course (14–15 m.) by sandbanks, and is apparently now unnavigable for any craft larger than native sea-going boats; and even these can only reach the Kārūn with the aid of the high tide. (ii) E. of the Bahmān Shīr the coast is low and to a great extent marshy, liable to inundation and fringed with mud-flats. Native boats can ascend the Khōr Mūsa and Khōr Duraq to Būzīyeh (in the Fellāhīyeh district), the Khōr Mūsa to Bandar Ma'shur, and the Hindīyan River to Hindīyan village. The country round Fellāhīyeh and Bandar Ma'shur is much intersected by water channels, and is liable to flood, and the land route leading from these places to the Kārūn in the neighbourhood of Mārid is probably impassable for troops. The same is believed to be true of the whole route from Bushire to Mohammareh (see *Routes in Persia*, vol. iii, 54). More practicable would seem to be the routes from Bandar Ma'shur and Hindīyan to Ahwāz (see *Routes in Persia*, 66, stage 3; 62, stage 3; and 57).

The Lines of the Tigris and the Euphrates.—The Tigris leads through Eastern and Northern Irak, the Euphrates along the southern and western edge of the alluvial plain. The greater part of the population of the country between Basra and Baghdad is to be found on and near the banks of these rivers. E. of the Tigris to the Kārūn, and NE. to the difficult hills of Luristan, the land is in general either marsh or open steppe. To S. and W. of the Euphrates are the Arabian and Syrian deserts. Between the rivers the country is for the most part either swamp or waterless waste. Therefore all movement on a large scale from the Persian Gulf to the region of Baghdad is confined to the lines of the Tigris and the Euphrates. Of these the line of the Tigris is the more important, as that river is much better suited to navigation than the Euphrates. Along both lines land communication is difficult. On both, supplies of cereals, rice, and live stock are to be had in quantities varying from poor to plentiful according to the district and the year.

The line of the Tigris (about 450 m. by river and about 300 m. by land from Kurna to Baghdad).—The river to Baghdad is navigable for vessels drawing 5–6 ft. in the flood season, and 3 ft. in low water. Navigation is variable owing to the changes caused by the

annual floods. The difficulties are due either to shifting banks (especially between Kut el-Amara and Baghdad), or to narrow, short, and shallow reaches with sharp elbow-bends (especially between Kurna and Amara). See *Routes* III A, III B, III C, and Appendix B.

The country on or near the river banks is exceedingly swampy, especially in spring and early summer: it is also much broken by canals and irrigation cuts. In exceptional flood seasons the whole country between Basra and Baghdad has the appearance of a sea, with islands here and there. Between Kurna and Amara land communication is made specially difficult by the great permanent marshes which from 'Ozeir to Qal'at Sālih come right down to the water's edge on both sides of the river. Before the war the river banks were here quite impassable for troops, but there is a practicable track from Kurna to Qal'at Sālih now on the r. bank (see *Route* 4). Above Qal'at Sālih the banks grow higher and drier. The r. bank from Qal'at Sālih to Amara is much cut up by large canals, and the l. bank is here the easier (see *Route* 4). Between Amara and Kut the banks are comparatively high. There are occasional patches of swamp near the river, and larger marshes farther inland. The size and depth of these vary according to the season. There is now a motor-road on the l. bank from Amara to Sheikh Sa'ad. (See *Routes* 5 a, b.)

From Kut to Baghdad the l. bank of the Tigris provides fairly good going throughout in the dry season, and the route could be made suitable for heavy motor transport with little trouble. The route is liable to inundation from March to June inclusive; irrigation cuts and nullahs are still found, and the soil would make heavy going after rain, but the country is less swampy. (See *Route* 5 c.)

The line of the Euphrates (about 420 m. by river from Kurna to Fellūjeh).—The Euphrates is inferior as a waterway to the Tigris. So much of its water below the Hindiyeh Barrage is dispersed in branches and marshes that it becomes in parts very shallow in l.w. Moreover the Old Hindiyeh Barrage, at the head of the Hindiyeh Branch, forms at present a barrier to navigation, and even if this were destroyed, the locks in the new Barrage and in the Regulator at the head of the Hilla Branch would prevent the passage of the larger classes of river-steamer. Lastly, the New Hindiyeh Barrage was already before the war affecting depths in the river below it, and the Hilla Regulator could be manipulated to stop navigation on the Hindiyeh Branch in l.w. and on the Hilla Branch at any time. (See Appendix C.)

The river between Kurna and Nāsirīyeh (see *Route* IV A) is navigable in h.w. for vessels drawing 5 ft. In l.w. the shallows on

the Hammār Lake and on the bars in the channels near it have made navigation impossible except for small, or lightly laden, native craft. Conditions here are being improved by dredging. From Nāsirīyeh to Samāweh depths are ample for river-steamers (*Route* IV B). Above Samāweh the Hindiyeh Branch appears navigable, at least for steamers drawing 3–3½ ft., from about the middle of February to July. In l.w. the larger native craft cannot navigate the Hindiyeh except when lightly laden and assisted by portage. The Hilla Branch, if the regulator at its head were fully open, would be navigable throughout the year, at least for native craft: how far it would be practicable for steamers is uncertain. (See *Route* IV C.) From Museyib to Fellūjeh boats drawing 4 ft. can probably navigate throughout the year. (See *Route* IV D. Compare throughout Appendix C.)

Land communications.—The edge of the desert along the S. and W. side of the Euphrates Valley gives good firm going all the way from Basra to Nejef, but very little is known of this route beyond Nāsirīyeh. To that point, see *Route* 13 a, and for railway, p. 341. Beyond Nāsirīyeh (see *Route* 12) it is probably passable for wheels. Water is not plentiful beyond Shināfiyeh. Supplies are scarce or lacking except at Nāsirīyeh and Samāweh. A disadvantage of this route appears to be that between Basra and Nāsirīyeh, where the Euphrates flows through great lagoons and marshes, and again between Shināfiyeh and Nejef, where the Bahr-i-Shināfiyeh has to be skirted, and the Bahr-i-Nejef either turned or crossed, it is not in close connexion with the river route. It may be noticed that the extension of the Baghdad Railway to Basra was planned to follow this line along the desert-edge. In the cultivated parts of the river valley below Samāweh (as between Sūq esh-Shuyūkh and Nāsirīyeh) there are some tracks much intersected by irrigation cuts and liable to inundation in the flood season. From Samāweh the route along the Hilla Branch of the river past Diwāniyeh to Hilla is free from swamp, but is said to be much intersected by the beds of irrigation cuts and canals. There is very little evidence as to its character (see *Route* 14 and Appendix C).

Before the war the following routes were reported as connecting the group of towns that lie on or near the Euphrates to the N. of Nejef and Hilla; from Nejef to Kerbela, an unmetalled carriage-road along the edge of the desert (see end of *Route* 21 a); from Nejef to Hilla, a track for pack animals (see end of *Route* 21 b); from Nejef to Tawarīj, a track passable in dry weather (see *Route* 16); from Tawarīj to Hilla, a track fit for pack animals (or, if some canals were bridged, fit for wheels in dry weather) (see *Route* 15);

from Tawarīj to Kerbela, a track fit for pack animals, and possibly for wheels, in dry weather, but liable to be flooded (see *Route* 15); from Kerbela to Museyib, an unmetalled carriage-road (see *Route* 21 a); from Museyib to Fellūjeh, a track along the river bank, which could apparently be made passable for wheels in dry weather without much difficulty (see *Route* 18).

Routes from the Euphrates valley towards Ha'il and the Nejd.—For a general account of these desert routes see *Routes* 24 a and b.

Lateral communications between the Tigris and Euphrates lines.—Between the junction of the two rivers at Kurna and the routes that join Hilla and Museyib to Baghdad, the least difficult line of communication between the Tigris and the Euphrates appears to be the Shatt el-Hai; and this is in many ways unsatisfactory.

In the triangle formed by Kurna, Amara, and Sūq esh-Shuyūkh, the great marshes which occupy about half the area apparently contain a number of canals which may allow shallow craft (*bellams*, &c.) to pass between the Tigris and the Euphrates. They are generally much choked with reeds in the middle of their course. Little exact information is available as to their navigability. See pp. 121, 184–5, &c. The line of the Shatt el-Hai, or Shatt el-Gharāf, connects Kut el-Amara on the Tigris with Nāsirīyeh on the Euphrates (about 120 m.). There is cultivation on and near its banks, and a number of villages, two or three of considerable size, lie along its course. But the Shatt el-Hai is useless as a waterway in the months of low river, and even in a normal flood season has no navigable outlet to the Euphrates at Nāsirīyeh. From Kut to Abu Mahau it can be used by steamers drawing 4½ ft. in the spring and early summer (February–June). For further details see *Route* V. As to the land route between Kut and Nāsirīyeh, the stage from Nāsirīyeh to Suweij is under water in normal years in May—July, and the numerous irrigation cuts which intersect the banks of the Shatt el-Hai and carry water from February to July would, no doubt, require much bridging and ramping to make them passable for wheels. The amount of supplies locally available would depend on the attitude of the local Arabs. For further details see *Route* 19 a, and for connexions between the northern part of the Shatt and the Tigris between Kumeit and Kut see *Routes* 19 b.

W. and NW. of the Shatt el-Hai as far as the neighbourhood of the line Hilla—Baghdad, the country between the rivers is a vast alluvial plain with a very slight incline from the Euphrates to the Tigris. This region appears to have become much more arid than it was thirty years ago, when it was extensively irrigated by a number of canals drawing their supply from the Hilla arm of the

Euphrates. The water that came in flood-time from the Euphrates formed numerous and often large marsh-areas (*khōrs*). The drying up of the Hilla arm apparently caused the canals to fail, and the marshland to decrease very considerably in extent: and the standing water of the *khōrs* when not renewed from the Euphrates became more and more brackish. How far the restoration of the Hilla arm by the completion of the Hindiyeh Barrage has already affected the interior of this region is uncertain. The canals seem to have silted up, and much labour would be needed to clear them to any great extent. According to a Report of 1916 there is now water in the flood season along the whole line of the Shatt el-Khār from Diwāniyeh to Lake Butnijeh NNW. of Nāsirīyeh, and boats can always pass from that lake to within 10 m. of a point two days' journey from Diwāniyeh. See further, p. 150. The plain is traversed by numerous ancient canal-beds, some of great size with high banks, and is dotted with mounds marking the site of ancient settlements. Here and there are shifting sand-dunes. The country is inhabited by a very sparse population of nomads and semi-nomads who here and there cultivate patches of ground near the *khōrs* that still remain fairly fresh. Possibly there is also some cultivation dependent on the winter rains. Spring grazing is no doubt to be found. Water fit for drinking appears to be very scarce, especially in late summer and early autumn. For routes across this country see *Routes* 20 a, b, and appendix to *Route* 21 a.

From Baghdad to the line of the Euphrates the main route is the carriage-road from Baghdad to Museyib. Up to the outbreak of the present war this was unmetalled, heavy in wet weather, liable to inundation in the first 15 m. from Baghdad (see *Route* 21 a). Between Museyib and Mahmūdiyeh an unmetalled cart-road diverged to Hilla (see *Route* 21 b). There is also a route passable for wheels from Baghdad to Fellūjeh (the first part of the Baghdad—Aleppo caravan-road). See *Route* 22. It is reported that since the outbreak of the present war a Decauville railway has been constructed between Baghdad and Ridhwānīyeh (see p. 370).

The Kārūn—Diz region.—The main line of communication through Southern Arabistan is the navigable part of the Kārūn River (see *Route* II A). The navigable Kārūn is divided into two parts by the rapids at Ahwāz-Nāzirī. Below Nāzirī the river is navigable for steamers of 2 to 5 ft. draught according to the season; above Ahwāz steamers of shallow draught ($2\frac{1}{2}$ ft.) can ascend to Shaleili on the Āb-i-Gargar, about 7 m. below Shushtar. The Āb-i-Diz had before the war been ascended with some difficulty in August by a steamer drawing $2\frac{1}{2}$ ft., to Umm el-Wāwiyeh, within 20 m. by

road from Dizfūl. The Kārūn is subject to floods in winter after rain, besides the great spring rises due to melting snow. Its rises are on the whole more violent and irregular than those of the Euphrates and Tigris. (See further, *Route* II A.)

As regards land communications it is to be observed that Arabistan, like Irak, is partly dry alluvial desert, partly marsh. The dry desert beyond the neighbourhood of the rivers is very scantily supplied with water (what there is comes mainly from rain-water wells and pools, which are nearly or quite exhausted in summer); and though the desert is good going in dry weather, after rain or flood its soft soil becomes very bad for movement. There is a certain amount of grazing on the desert in spring.

On both sides of the Kārūn there are routes leading from Mohammareh to Ahwāz. Both are indifferent; that on the r. bank apparently is more difficult than that on the l. The Anglo-Persian Oil Co.'s pipe-line and telephone from Maidān-i-Naftūn to 'Abbādān accompany the track on the l. (E.) side of the river (see *Routes* 6 a, 6 b).

N. of Ahwāz a route passable for wheeled traffic (at least in dry weather) led along the pipe-line near the E. bank of the river through Wais to Kūt en-Naddāfīyeh Kebīr, where the pipe-line turns NE. away from the river. From this point wheeled traffic could apparently reach Band-i-Qir, where the Kārūn divides into the Āb-i-Shatāit and the Āb-i-Gargar (bridged for wheels) and the Diz tributary comes in. From Band-i-Qir mule-tracks led to Shushtar across Miyanāb Island between the Āb-i-Gargar on the E. and Āb-i-Shatāit on the W. (see *Route* 6 c). Shushtar could also be reached by tracks passable (at least in dry weather) for wheeled transport running E. of the Āb-i-Gargar. Thus the road along the pipe-line could be followed from Kūt en-Naddāfīyeh to the point where it crosses the stream that flows into the Kārūn at Hasan Seyyid; from the crossing a track diverging N. ran to Shushtar close along the E. bank of the Āb-i-Gargar, or, again, the pipe-line road could be followed to Bard-i-Sarra Telephone Office, whence the Shushtar—Ramuz road might be followed into Shushtar.

Several tracks which could probably be easily made passable for wheels run from Shushtar to Dizfūl (see *Route* 6 c).

Dizfūl can apparently also be reached by desert tracks running direct NNW. from Ahwāz or Band-i-Qir. Water should be obtainable from the Karkeh, Khārūr, or Diz rivers. For one of these tracks from Band-i-Qir see *Route* 6 c, p. 219, and for a route which has been followed by motor lorries from Ahwāz nearly to Shush see *Route* 6 d.

On the routes from Mohammareh and Ahwāz towards the Persian Gulf (to Fellāhīyeh, Bandar Ma'shur, Hindīyan, and Bushire), see section on approaches from the Persian Gulf (p. 9).

Other routes leading E. from the Kārūn are (1) that from Ahwāz to Ramuz and on to Behbehān and Shiraz (in its earlier stages a marshy, unhealthy route: see *Routes in Persia*, vol. iii, 65 and 61). (2) The Lynch road from Wais to Isfahan across the Bakhtiyāri country (see *Routes in Persia*, vol. iii, 69, and *Gazetteer of Persia*, under heading *Bakhtiyāri*). (3) A cart-road branching from the pipe-line road near Haddam and leading to the oil-wells at Neft-i-Safid. (4) The Shushtar—Ramuz road (passable for carts) running through Bard-i-Sarra and Neft-i-Safid, and crossing the Lynch road at Sanīyeh (see *Routes in Persia, Corrections to Vol. III* (1914), 72). (5) A mule-track from Shushtar running to join the Lynch road at Chashmeh Ranghani: this is connected with Maidān-i-Naftūn by branch mule-tracks from Āb-i-Shikar and Gurgir (see *Routes in Persia, Corrections to Vol. III* (1914), 71). (6) Mule-track from Shushtar to Māmātain *via* Masambuli (*Routes in Persia*, vol. iii, 77).

The country E. and NE. of the Tigris towards the Kārūn and the Pusht-i-Kūh.—(*a*) The region between the Tigris below Amara and the Kārūn is marshy in its western part (Khōr Hawīzeh), and mainly dry desert in its eastern portion. It is very sparsely inhabited, mainly by nomads and semi-nomads. The only route practicable for troops connecting the Tigris with the Kārūn seems to be that from Amara to Ahwāz, on which British and Turkish columns operated in the spring and early summer of 1915 (see *Route* 8 a). A difficult track, but one practicable nearly throughout for all arms in the dry season, connects Dizfūl and Amara, fording the Karkeh (*Route* 8 b). A track used by pack-animal caravans connects Amīnīyeh with Hawīzeh. From Hawīzeh a route over very waterless desert leads to Basra, a track runs to Kūt el-Hawāshim on the Karkeh, and other tracks go to Suwaib and Biseitin, whence channels practicable for canoes lead through the marshes to Amara and 'Ozeir, and also (in spring only) to Kurna and Nashweh. There is boat traffic up the Karkeh from Biseitin to Kūt Seyyid 'Ali. Near Biseitin baggage has to be transported by boat (see *Route* 7).

(*b*) The country between the Tigris above Amara and the hills of the low country is an open plain interspersed with marsh-areas, which are largely saline, and partly dry up in the dry season. In winter and spring (and especially early in the latter season) good pasturage is found in the plain-country below the hills, and this region is then to some extent occupied by the hill-tribes, who descend hither with their flocks and herds. At the beginning of summer the pasture

withers, and the country between Dizfūl and Zorbatiyeh is almost wholly deserted.

For routes from the Tigris above Amara towards the hills see *Routes* 8 c–g. Caravan tracks are said to lead to Shush and Dizfūl from Amara on the Tigris and Biseitin in the Khōr Hawīzeh. From Dizfūl and Shush to Zorbatiyeh and Bedrah tracks passable for wheels run beneath the hills over open undulating country or plain ; but these, it appears, would be hardly practicable for troops except perhaps in winter and spring, when water and grazing are generally plentiful (though the water is often brackish), and live stock might be obtained from the mountain tribes which are then in the neighbourhood. (See *Routes* 10 a, b.) For a route across this desert following roughly the line of the Turco-Persian frontier, see *Route* 10 c. From Kut el-Amara a track passable for guns in dry weather goes N. to the small towns Jessān, Bedrah, and Zorbatiyeh: in winter and spring the salt-marshes N. of Kut would be serious obstacles. From Zorbatiyeh a difficult track, passable for mule—or donkey—transport only, leads across the hills to Kirmanshah. (See *Route* 9, and *Routes in Persia*, iii. 94.) Between Bedrah and Baghdad is open alluvial plain, very heavy going in wet weather.

Luristan, &c.—The Pusht-i-Kūh and parallel ranges NE. of it to the upper valley of the Karkeh form a barrier to east-and-west communication practically from Dizfūl to Deh Bālā. Parallel ranges 4,000 ft. and upwards in height rise between Dizfūl and the Isfahan plain. The easiest lines for road-construction between Dizfūl and Khurramābād make a détour westward. There is no track fit for wheels throughout (compare *Routes* 11 a–c). The best routes connecting Khurramābād, Burujird, and Kirmanshah, also, need more or less work to fit them for wheels (*Routes* 11 d–g). In this region water is generally plentiful; grazing also, with certain exceptions : supplies are scanty or wanting generally on the southern routes; in the north they can be had in the cultivated plains round Khurramābād, Burujird, Kangavar, and Kirmanshah. Passes are liable, for varying periods, to be blocked by snow. See introductions to *Routes* 11 a–g.

RIVER ROUTES

THE SHATT EL-'ARAB

ROUTE I A

FĀO—BASRA (69¾ M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Persian Gulf Pilot*, 1915; Admiralty Charts F 067 and 1235; and other sources of information.

THE **Shatt el-'Arab** is the largest, or, if small native sailing-vessels be excluded from consideration, the only navigable river that enters the Persian Gulf. It carries the whole drainage of Turkish Irak and a large part of that of Persian Arabistan.

The Shatt el-'Arab is formed by the confluence at **Kurna** village of the **Tigris** and the **Euphrates.** The general direction of the river is SE., but in the reach between Basra and Mohammareh it has a more easterly and less southerly trend. Its mean breadth is about 600 yds. from Basra to the mouth of the Kārūn: below the latter point it at once broadens to ½ m., and gradually reaches a width of 1 m. at Fāo. Apart from the so-called 'New Channel' of the Euphrates there are only two considerable tributaries of the Shatt el-'Arab, the **Suweib** (or Shwaiyib) and the **Kārūn**, the latter being by far the more important. For the Suweib, which enters the Shatt el-'Arab on its l. bank 3 m. below Kurna, see *Route* I B, m. 44. The Kārūn, the only really navigable river in Persia, joins the Shatt el-'Arab, also from the l. bank, at a point about 22 m. by the course of the stream below Basra. (For the Kārūn see *Route* II A.) It may be noticed that the temperature of the Shatt el-'Arab is sometimes as much as 16° F. higher than that of the Kārūn. The new channel of the Euphrates cuts the r. bank of the Shatt el-'Arab at Gurmat 'Ali, about 8 m. above Basra. (See introduction to *Route* IV A.)

The Fāo Bar.—In most respects well suited to be a great commercial waterway, the Shatt el-'Arab has one disadvantage, and that a remediable one, in the undredged bar about 12 m. in breadth at its entrance, the banks of which are liable to change. From the seaward side the first signs of approach to the mouth of the river are the discoloration of the sea-water by mud, and the lightship on the Khola shoal. After passing the lightship the channel is marked by a line of buoys, the positions of which are changed as need arises. (See the *Persian Gulf Pilot*, 1915.) When the river proper is entered the course is defined by landmarks and by the banks. Dredging is contemplated or has been undertaken; subject to this, vessels of more than 11 ft. draught wait for the flood to cross the bar.

At high-water springs (the highest tide being always the night tide in winter and the day tide in summer) vessels of about 20 ft. draught can be navigated up to Basra. Vessels of such draught can only navigate with safety by crossing the bar on the top of high water of the highest tide of the 24 hours. At neaps the draught possible for this navigation is restricted to about 17 ft. The soundings on the bar are liable to be considerably reduced by a wind from the N., and the position of the channel is variable. Inward-bound vessels of more than 20 ft. draught are generally lightened (at the island of Jezīret Būbayān outside the river) to the requisite draught by steam lighters, and outward-bound vessels complete their loading there to more than that draught. Four steam lighters with a total carrying capacity of 4,000 tons are kept at Basra for the purpose of lightening or completing the loading of vessels outside the bar.. The bar is of soft mud, and the B. I. mail steamers have been accustomed for many years to save time by ploughing through the mud when the water is less than their draught by one or even two feet.

Navigation of the River.—Any vessel that can cross the bar can ascend to Basra without difficulty, the intermediate soundings being commonly 24 ft. or more. At the bends the deeper water is generally to be found on the concave side. The only part of the river awkwardly shallow is in the reach below Mohammareh, where there is a shifting bar caused by the deposit of silt from the Kārūn. This bar usually has 24 ft. of water over it at high tide, and is not a serious obstacle. (See further, m. 47¾ below.) The tides (which are stronger than the current of the river) affect the Shatt el-'Arab throughout its entire length, producing a rise of 6 to 10½ feet at Basra. Sea-water, however, does not reach farther than about 20 m. above Fāo. While a north wind reduces the depth of the water in the river, a south-west gale will produce abnormally high tides, giving an extra rise at Mohammareh of three feet and even more (see also under m. 4½).

Islands in the Shatt el-'Arab usually lie so close to the banks that they can hardly be distinguished as such, and the fairway is nowhere divided or impeded by an island.

The details of navigation are liable to be modified by changes due to the action of floods. The particulars regarding navigation given in the itinerary are taken from the *Persian Gulf Pilot*, 1915. Detailed surveys of difficult stretches were contemplated in October, 1916.

Banks.—The palm-tree is the most constant feature in the scenery of the Shatt el-'Arab. The date-palm plantations begin where the banks of the river cease to be covered at high tide, and continue the whole way to Basra. The date gardens on the r. bank lie in an almost unbroken belt ½ m. to 2 m. broad between the river and the desert,

which stretches to the Khōr Zobeir, an arm of the sea nearly parallel to the course of the Shatt el-'Arab, and 25 to 30 m. distant from it (*Route* I C). Between the date plantations and the Khōr Zobeir the country is partly marshy and partly desert. West of the *khōr* is open desert, the going over which is reported to be firm and good. The northern part of the *khōr*, about 20 m. S. of Basra, is surrounded by a marshy plain much intersected by creeks, north of which again an alluvial plain liable to inundation extends to Basra (but see p. 385). The l. bank between the mouth of the river and the Haffār Channel is constituted by the large island of **'Abbādān** (m. 0), the centre of which is mostly uncultivated. Behind the cultivated fringe (½ to 2 m. deep) on the l. bank between the Haffār Channel and Basra stretches a flat, low-lying alluvial plain, usually called desert but fairly well watered. On the l. bank the trees are younger, and open desert-stretches more frequent. In many places, particularly above Mohammareh, the natural banks of the river are below the highest flood levels, and there is an elaborate system of dykes known as *sudd* to prevent the flooding of the date gardens. Low tide usually exposes a strip of very muddy foreshore lying between the *sudd* and the water, on which grow coarse rushes which are cut as food for cattle. This muddy foreshore makes landing very difficult and a pier of some kind almost a necessity. A feature of the river from its mouth upward are the numerous creeks which run from it towards the desert, where they end. These creeks (the more important of which are detailed in the itinerary) have generally the same name as the villages on them and the tracts through which they run. Constructed for irrigation, they are used as waterways by the Arabs in boats and canoes. There is usually a village on each creek half-way between the river and the desert, and a track with rough bridges over the creeks runs from village to village all the way from Fāo to Basra. The l. bank of the Shatt el-'Arab is Persian territory as far as the Kheyyein Creek, about 1 m. above Fellāhīyeh, 2¾ m. above the mouth of the Kārūn. The r. bank is Turkish, the boundary running along the edge of the Persian shore up to a point just below Mohammareh, where it passes to the middle of the stream to include the Mohammareh anchorage within Persian territory.

Inhabitants.—The r. bank is inhabited by river tribes, among whom are found **Idan** and **Muntefiq** in the lower reaches near Fāo and above Mohammareh **Idan** and **Muhaisin.** In Fāo district there are a number of **Persian** settlements. As regards the l. bank, the southern part of 'Abbādān is inhabited chiefly by **Nassār** Arabs (**Ka'ab**) and the northern part by **Dris** (**Ka'ab**). Between the Kārūn and Mohiyeh there are mainly **Muhaisin**; above Mohiyeh to Basra mainly **Idan** and **'Atub.**

Right Bank	Total distance Miles
Ras el-Bīsheh, promontory forming westernmost point of the entrance to the **Shatt el-ʿArab,** distant from the Khola Patch on the western side of the outer bar 11½ m. Ras el-Bīsheh is surrounded by mud-flats which dry in patches at extraordinary spring tides. Beacon on r.-hand side.	0
Fāo tract begins here. It extends along the r. bank about 8 m. The population of the tract is about 2,000, consisting of Arabs, Persians, and a few Bahreinis and Koweitis. The number of date-trees on the tract is probably nearly 20,000, agriculture being almost confined to the growing of dates. The Fāo palm yields luxuriantly, but mostly fruit of inferior quality (*sair*). A little wheat and barley and vegetables grown for local consumption; some cattle and a very few sheep.	
Numerous villages and creeks between here and Fāo with families of Persians and Arabs (mostly Kaʿab of the Nassār Division).	
Turkish fort (Fāo Fort) faced with white stone rising 15 ft. above counterscarp of the ditch, almost entirely shut in by date gardens (which now begin) and out of repair. Flagstaff.	1¾
	3½
Haji ʿAbdallah, or Quarantine Creek (two families of Persians), at lower end of civil station at Fāo.	4½
Fāo Civil Station. Pop. before the present war, 400. End of British cable from India and of Turkish land line from Basra. The name of Fāo is used by Europeans *only* for the civil station alone, but properly denotes the whole cultivated tract. By the Turks the name Fāo is also applied to a whole *Kaza* in the Basra *Vilayet* of which the administrative head-quarters are at Fāo, which is the seat of a Kaimmakam. The station at Fāo covers the riverward end of the spit between the Haji ʿAbdallah and Haji Rashīd creeks. Its frontage upon the river is about 600 yds. At high water landing is easy everywhere in the neighbourhood of Fāo; but when the tide is low landing is hampered by the muddy foreshore. There is a wooden jetty between the telegraph office and Haji Rashīd Creek. The tide	

Intermediate distance Miles	Left Bank
0	**'Abbādān** Island, also known as **Jezīret el-Khidhr**, here forms the l. bank of the Shatt el-'Arab, the boundaries of the island on the N., E., and S. being the Kārūn R., the Bahmān Shīr, and the sea respectively. It is 40 m. long, and its width varies from 1½ m. to 12 m. It is broadest at its southern end. The inhabitants are Ka'ab Arabs and number about 24,000. There are numerous villages and date-groves along the shores, but the centre of the island is desert. The only place of importance is the Anglo-Persian Oil Company's settlement and works (see m. 35). The island is in the province of Southern Arabistan and under the jurisdiction of the Sheikh of Mohammareh.
	Evidence regarding the extent of the tracts above 'Abbādān Island is very conflicting.
	Ma'āmareh tract extends from the sea for some miles up the Shatt el-'Arab to a point some distance above Fāo. It is covered with date gardens near the river bank, and has a population of about 800 living in about 150 scattered dwellings.
1¾	
1¾	Persian fort (flagstaff).
1	
	Boat creek leading to Bahmān Shīr River, a little below a large date-grove extending for about 3½ m.

Right Bank	Total distance Miles
gives a rise of some 10 ft., and under the influence of SW. winds the tide sometimes rises to 20 ft., submerging the station and surrounding country. A red fixed light is exhibited at 25 ft. above high water from a post near the telegraph offices at Fāo and should be seen from a distance of 6 m. The telegraph offices are on the river bank near the southern bank of the Haji Rashīd Creek. The former Turkish Government building, a substantial 5-roomed brick structure, is about equidistant from the two creeks and the river. Custom-house. Village of huts on Hāji ʿAbdallah Creek, about 150 souls. Marsh behind entire station. At the back of this, about 700 yds. from river, date-groves extend for some hundreds of yards towards the desert.	
Fāo, as the key of the Shatt el-ʿArab and as the point where the Indo-European Telegraph Department meets the Turkish land line, is a place of international importance. As regards climate January and February are the wettest months, but there may be some rain in any month. Total rainfall for Dec., Jan., Feb., 1904–5 was 3·65 in., in 1905–6 1·63. In summer the temperature may rise over 120° F. In winter it may fall to about 50°. During July and first half of March NW. winds ordinarily prevail with dry heat; and from the middle of July to end of September the atmosphere is damp as well as hot; in September and October there are frequently fogs at night and in the early morning.	
There is a desert route from Fāo to Basra, suitable for all arms except in wet weather, when it becomes practically impossible. Path for foot-passengers only through the date-groves to Basra (1912). See *Route* 1, Introduction.	
From Fāo to Qabdeh Point the deeper water lies generally towards the concave bank of the river bends.	$4\frac{3}{4}$
Hadd or **Mūsa** Creek, forming boundary of Fāo district.	$7\frac{1}{2}$
Maʿāmir tract begins. Pop. (1908) 1,500, of mixed tribes,	8
	$10\frac{1}{2}$

Intermediate distance Miles	Left Bank
$\frac{1}{4}$	**Qasbeh** or **Qasbeh en-Nassār** tract extends for some miles with a depth of 2–3 m. Mixed population (Ka'ab and Idan), Arabs, Persians, and negroes. Small scattered groups of mud huts, in all about 600 in 1908. Plantations then produced about 100,000 baskets of dates annually.
$2\frac{3}{4}$	Qasbeh Point. Channel runs from NW. to N.
$2\frac{1}{2}$	Square fort near N. end of a line of date-groves. Bank

Right Bank	Total distance Miles
partly Muntefiq, distributed among about 25 small hut villages, each, as a rule, on a separate little creek. The district is not fully developed, but it may be accepted that the population has increased since 1908, as also the number of live stock, estimated at that date at 450 cattle, 300 sheep and goats, 50 horses, and 30 donkeys. There are probably 7,000 date-palms in this district, the plantations towards Fāo boundary being owned by the nephews of the Sheikh Mobaraq of Koweit. Falih Nassir Pasha also owns property which is managed by Sa'ad bin Naghaimish.	
Ma'āmir fort and village, the residence of Sa'ad bin Naghaimish, is reported to lie 7 m. by road from Fāo telegraph station. Large abandoned brick-kiln a short distance below Chelebi Point.	15
	18
	19½
Qabdeh Point. The river bends gradually NNW. Lower end of Qabdeh Reach, which extends up to 'Abbādān. The r. bank is fairly steep to until about 2 m. below 'Abbadān Anchorage, where fishing-stakes and mud-banks extend about 300 yards into the stream.	21
Ma'āmir, or **Dorah** Creek, boundary of the Ma'āmir tract and the commencement of Dorah tract (authority of 1908 gives this a frontage of 4½ miles). Pop. (1908) 1,500; 12 villages, mostly Idan and 'Atub. Sālih bin Ibrāhīm owns a considerable property here. The father of Sālih was the right-hand man of the Sheikh of Koweit, but was subsequently exiled. He is now dead. A prosperous tract, containing about 12,000 prolific palms. Grapes, oranges, and figs grown. Live stock (1908), 120 cattle, 200 sheep and goats, 160 horses.	
Dawāsir district, containing the tracts of Faddāqīyeh, Sanīyeh, and Dawa'ib. This extends up to the Northern end of Ziyādīyeh Island, the uppermost 6 m. of its extent lying opposite that island, and being uninhabited (1908).	23½

Intermediate distance Miles	Left Bank
	very low with small bushes northward of fort for about two miles.
$4\frac{1}{2}$	**Manīyūhi** tract, which has an extent of some miles, and is inhabited by Muhaisin and Ka'ab Arabs. It consists of about 300 mud huts in small groups. Yield of plantation over 50,000 baskets (1908).
3	**Chelebi** Point, marked by small mound. Above Chelebi Point trees infrequent, found in isolated groups.
$1\frac{1}{2}$	River bends from NNW. to NNE.
$1\frac{1}{2}$	In Qabdeh Reach shoals and floods extend along l. bank up to Shateit.
$2\frac{1}{2}$	**Dawāsir** Islands, a chain of low and narrow islands close to the bank stretching up-stream for about 6 m., ending opposite the lower end of Ziyādīyeh Island.

Right Bank	Total distance Miles
In the whole district there are about 50 hamlets of 5 to 15 huts each, inhabited by a mixed population somewhat nomadic in its habits. One place, **Kūt el-Khalīfeh,** is inhabited by Muntefiq. The total fixed population of Dawāsir was about 2,700 in 1908. Date-palms numbered some 18,000; crop poor. Live stock, about 200 cattle, 450 sheep and goats, 112 horses, and 6 camels. Part of the tract is the property of the *Dā'irat es-Sanīyeh.*	
Ziyādīyeh Island, 5–6 m. long and 1–1½ m. broad, separated from the mainland by Ziyādīyeh Creek. The eastern bank of the island and not the western bank of the creek is the true r. bank of the river. In 1908 population was about 2,000 of various tribes. Date-trees about 100,000, besides orchards. Cattle 300, sheep and goats 500, horses 500. The whole island belongs to the Naqīb of Basra.	29½
	31
	34
Barda and **Sibiyeh** Islands, situated to r. and l. of upper entrance of Ziyādīyeh Creek. Pop. of both together, 175. About 2,300 palm-trees.	35
Seihān tract has a river frontage of about 4 m. from Barda Island to Seihān Creek. Pop. 350 (1908). There is one village (**Khast**) situated 1 m. above Barda Island. Country here more open, and there are only about 5,000 date-trees. Live stock estimated at 60 cattle, 100 sheep and goats, and a few horses.	

Intermediate distance Miles	Left Bank
6	
$1\frac{1}{2}$	**Shateit** village of 30 mud huts of Muhaisin.
3	**Buweirdeh,** 20 mud huts of Muhaisin.
1	**'Abbādān** (Jezīret el-Khidhr). In 1914 there was a colony of British subjects, 30 Europeans and 1,000 Indians. P.O. Wireless T. Telephone to Mohammareh and Maidān-i-Naftūn. Anglo-Persian Oil Company's refinery and terminus of the pipe-line from the oil-wells of Maidān-i-Naftūn. The Oil Company have a frontage on the river of one mile, renting an area of about one square mile at this, the narrowest, point of 'Abbādān Island. The whole area is covered with workshops, storage tanks, and dwelling-houses for the staff and employees. **'Abbādān** Anchorage. The 5-fathom line is reported in the *Persian Gulf Pilot*, 1915, to be about half a cable off the l. bank and a quarter of a mile off the r. bank, the channel between, with from 6 to 10 fathoms water, being $1\frac{1}{4}$ cables wide. The following description is from the *Persian Gulf Pilot*, 1915. There is a pier at the refinery and steam vessels moor alongside in 21 ft. water. A red fixed light is established at each outer end of the pier. Three buoys are moored SE. of the pier; the south-eastern buoy carries a white fixed light, but the buoy cants over with the stream, so that the light is obscured by the buoy from a vessel going with the stream until past it.

Right Bank	Total distance Miles
El-Khast Reach begins immediately above 'Abbādān Anchorage and trends W. and WSW. about 3 m. It then turns rather abruptly WNW. and NNW. nearly 6 m. to entrance of Haffār Channel.	
From 'Abbādān Anchorage to Haffār Channel keep the l. bank of the river aboard, and pass southward of the E. end of Haji Salbuq Island, then gradually cross and keep on the r. bank till abreast of the Turkish custom-house on Gatah Creek, whence proceed along the W. coast of Haji Salbuq Island and pass close off Hārseh village. Thence the track appears to lie rather on the r. bank westward of the shoal parts of Mohammareh Bar.	36¼
Seihān Creek. Country open. Date-groves round Seihān village.	39¼
Sanīyeh lands, i. e. Turkish Crown property, extend from Seihān Creek to Gatah Creek, a distance of 2 m. These lands are densely covered with some 10,000 date-trees which are attended to by some 350 cultivators of mixed tribes. Live stock estimated (1908) at 30 cattle, 100 sheep and goats.	
Gatah Creek. Date plantation on both banks of the creek. According to the *Persian Gulf Pilot* (1915) and Chart F. 067 (1914) the date-trees become scattered after this	41¼

Intermediate distance Miles	Left Bank
	NW. of the pier a small black buoy marks the wreck of a lighter, about ½ a cable off the bank.
	It is advisable to anchor above the pier in order to be out of the way of vessels going alongside it.
	The tidal rise at 'Abbādān is about 8 ft. at springs. The flood stream attains a rate of 1½ knots and the ebb a rate of 3 knots.
1¼	**Bureim** village: 50 mud houses.
	Entrance of the boat channel between **Haji Salbuq** Island and **'Abbādān** Island.
	Above the Oil Company's leased area the river takes a sharp bend W. at Haji Salbuq I., and at this point a boat channel leaves the river, forming a convenient short cut for light-draught vessels plying between 'Abbādān and Mohammareh. Both banks of this channel are thickly covered with date-groves, and there are several small villages among the trees. The length of this channel is about 5 m.; depth 8 to 16 ft.
	Haji Salbuq or **Moheileh** Island begins at the boat channel described above. It forms the l. bank of the Shatt el-'Arab for about 7 to 8 m. The length of the island is about 5 m. and its greatest breadth 2½ m.; it is very fertile and is all under cultivation, producing rice and wheat as well as dates. The whole island is cut up by irrigation ditches and canals. One creek, which however dries at low water, traverses the island from a point on the Shatt el-'Arab about 400 yds. above the lower end of the boat channel to a point a little over a mile below the NW. corner of the island on the Shatt el-'Arab.
3	
2	

Right Bank	Total distance Miles
point and the country variously cultivated, but according to an estimate of 1908 there were on an average 11,000 palms to the mile. Turkish custom-house at the mouth of the creek. Turkish guard-house 1½ m. above creek.	
Gatah tract extending for 4 to 5 m. from Gatah Creek to Mutawwa' Creek. Some 2½ m. in the middle portion of the tract are behind the islands of Gatah and Bahriyeh. Pop. 1,300; 18,000 date-palms, growing only along the river. About seven villages. Live stock, 300 cattle, 150 sheep and goats, 30 horses. Sheikh Mobaraq has property here.	
Gatah Island lies close to the bank in front of Gatah tract. Length 1½ m., breadth about ¼ m. Pop. (1908), 200 of various tribes. Date-palms, 7,000. Live stock, 40 cattle, 50 sheep and goats.	42
Bahriyeh Island, immediately above Gatah I. Length about 1 m., breadth considerably less. Pop. (1908), 80. A few cattle, sheep, and goats. 30 date-palms and a few other fruit trees. Partly the property of the Sheikh of Mohammareh.	43½
	44¾
Mutawwa' Creek, upper boundary of Gatah tract. It turns NW. and runs behind Ruweis and Umm el-Gharāb and Mutawwa' tracts. Its upper end is above the mouth of the Kārūn and about 2 m. WSW. of it, and opposite Umm er-Rasās on the island of Umm el-Khasāsif. The creek is full of fish-traps.	45½
Ruweis tract extends ¾ m. Pop. 850. Three small villages. About 20,000 date-palms. Live stock, 200 cattle, 80 sheep and goats, and 20 horses.	
Seven conspicuous palm-trees called **Es-Saba'** (the Seven). Immediately above this **Umm el-Gharāb** tract begins and extends for nearly a mile. Mutawwa' Creek is here above 1½ m. from river. Pop. 1,600, living mostly in scattered huts; but there are three small hamlets on the Mutawwa' Creek. Date-palms (1908), 30,000. Live stock, 200 cattle, 50 sheep and goats, and 10 horses.	46½
	46¾
	47
	47¼

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	
$1\frac{1}{2}$	
$1\frac{1}{4}$	Northern end of Moheileh I. and northern end of boat channel leading to 'Abbādān Anchorage.
$\frac{3}{4}$	**Hārseh** village, inhabited by Dris (Ka'ab). The fairway above Hārseh appears to lie rather on r. bank, westward of the shoal parts of the Mohammareh Bar (see below, m. $47\frac{3}{4}$). Seven cables (1400 yards) above Hārseh, mud shoal liable to shift, with $2\frac{1}{2}$ fathoms water in mid-channel, apparently a prolongation of the Mohammareh Bar.
1	
$\frac{1}{4}$	**Beit Zā'ir Mohammed** village of 20 mud huts of Dris (Ka'ab).
$\frac{1}{4}$	**Beit Zā'ir Humeyyid,** 20 mud huts of Muhaisin.
$\frac{1}{4}$	**Tuwaiqāt,** hamlet of Dris (Ka'ab).

Right Bank	Total distance Miles
Turkish police post marks southern end of **Mutawwa'** tract which extends up the bank of the river $1\frac{1}{2}$ m. Pop. about 500 (1908) of mixed tribes in small villages. 10,000 date-palms; 60 sheep and goats.	$47\frac{1}{2}$
	$47\frac{3}{4}$
Umm er-Rasās or **Umm el-Khasāsif** Island (called Dabba Island in Admiralty chart, plan 1235). The south-eastern part of this island lies opposite the mouth of the Kārūn. In length the island is about 5 m., its average breadth being less than $\frac{1}{2}$ m. There are two large villages; one, Umm er-Rasās, on the N. side near the E. end. Pop. 250; 30 cattle, 30 sheep and goats, 7,000 date-palms. Inhabitants—Sheikh Hasan tribe. The other village, Umm el-Khasāsif, situated on the south shore of the island about 1 m. from its western end. This village is well built, and is laid out in four broad parallel streets. Pop. 2,000, of Sheikh Hasan tribe; resources: 20,000 date-palms, 400 cattle, 300 sheep and goats, 10 horses, 20 donkeys (1908). The island is the property of the Sheikh of Mohammareh. In the channel between the island and the mainland lie two small islands, **Umm el-Yabābi,** opposite **Fayyādhi,** and **Rumaileh,** opposite **Baljānīyeh;** the channel was probably, in 1836, the main river; it has now silted up, and shallows to about 3 ft. (l. w.). These islands are Turkish territory.	$48\frac{3}{4}$

Intermediate distance Miles	Left Bank
$\frac{1}{4}$	**Āl Bū-Naji**, small village of Muhaisin.
$\frac{1}{4}$	**Arādhiyeh,** 25 mud huts of Muhaisin.

Bar in river known as **Mohammareh** Bar, lies from 2 to 8 cables (400 to 1,600 yds.) southward of the entrance to Haffār Channel. This shoal forms periodically, and usually between February and June. The least depth of water over it is when the Kārūn River is in flood before the Tigris, and the greatest when the contrary is the case. Caution is necessary here, especially when steaming with the stream. A depth of 10 ft. is charted in the fairway, but the depths appear to vary, and there is sometimes a depth of 16 ft. About half a mile SSE. of the quarantine flagstaff, at the southern entrance to the Haffār Channel, and nearly in mid-channel are, at times, depths of from 4 to 6 ft. hard sand.

1 Mouth of the **Kārūn** River (**Haffār** Channel).

The Haffār Channel is a mouth of the Kārūn said to be of artificial origin. It leads to the city of Mohammareh, which is on its N. bank about 1 m. from the mouth. It is about 400 yds. wide and 3 to 4 fathoms (18 to 24 ft.) deep. As one proceeds up the channel the following points may be noted:—*On the right* (S. bank): Quarantine station and Persian Government guest-house, palm-groves, Anglo-Persian Oil Company's oil stores, palm-groves, small Arab village of Kūt esh-Sheikh. *On the left* (N. bank): custom-house with walls, Messrs. Lynch's warehouse and wharf, British Consulate and post-office, palm-groves, British Club, offices and wharves of various European firms.

Mohammareh. (For further information see Gazetteer of Towns.)

Anchorage and Landing. The port of Mohammareh has two anchorages, an outer in the Shatt el-'Arab, immediately above the mouth of the Haffār Channel, and an inner, which lies up the Haffār Channel opposite Mohammareh town. The outer anchorage is that used by large vessels, and can accommodate 27 ocean-going steamers in single line. The Haffār Anchorage is for

Right Bank	Total distance Miles

Intermediate distance Miles	Left Bank
	smaller vessels. The holding ground at the junction of the rivers is not good, and a ship anchored there continually yaws from the effect of the two streams: moreover, whirlpools are formed here in the flood-season. There is said to be a good berth in the Haffār Channel just above the Consulate and E. of a permanent hulk, but it is not recommended for a short stay as it is difficult to get out of the channel unless the ship is swung to the flood tide. Vessels using the inner anchorage usually lie off the town close to the bank, but there is no room for large ships to swing, and for this reason the outer anchorage is preferred except for small steamers up to 600 tons. It appears to be high water at Mohammareh about 6 hours after high water on the outer bar at Fāo. The rise of the tide at Mohammareh is 6-9 ft. In 1915 it was reported that 3 or 4 iron lighters (60 tons), about 27 wooden barges (100 men or 40 tons), an uncertain number of *baghalahs* (100 men or 40 tons), and a large supply of passenger *bellams* were locally available. No details as to numbers, &c., of craft at present available. The Sheikh of Mohammareh owns a steam yacht, two steam launches, and a tug. Besides steamers employed for military purposes, S.S. *Nasrat* (80 tons), owned by the Nasiri Co., still runs from Mohammareh to Nāzirī. Landing-places can be found anywhere on either side of the Haffār Channel, on the Shatt el-'Arab, and on the Bahmān Shīr River from barges or launches. The l. banks of the Shatt el-'Arab and of the Haffār Channel are fairly steep in this neighbourhood. The banks are everywhere mud, their height being some 12 to 15 ft. A supply of 30-ft. planks is necessary. A landing on the banks is muddy work, but is not difficult except for animals. It should not be attempted during strong ebb-tides. There are numerous wharves along the N. side of the Haffār Channel up to Mohammareh. There are no cranes.
	From the Haffār Channel the Shatt el-'Arab trends westward for 15 m. The *Persian Gulf Pilot*, 1915, says: 'A good

Right Bank	Total distance Miles
	$49\frac{1}{4}$
	$49\frac{1}{2}$
Upper end of Mutawwa' Creek. The distance between this point and the Turkish police post at $47\frac{1}{2}$ m. along the r. bank of the river is $1\frac{1}{2}$ m., the distance in the margin being determined by the channel which follows the l. bank.	$50\frac{1}{2}$
Zain tract begins here. Pop. (1908) about 1,300 in 7 small villages, the largest of which, Zain, consists of nearly 100 huts, and is opposite Umm er-Rasāṣ village (see above, m. $48\frac{3}{4}$). Resources, estimated in 1908, 35,000 palms, 30 cattle, 50 sheep and goats, and a few horses. Practically the whole of the tract belongs to nephews of the Sheikh of Koweit.	
The tract on the r. bank is here **Fayyādhi.** Pop. (1908) 500, inhabiting 5 villages. Date-palms 5,000, below the average in productiveness. Above half the population engaged in fishing. A few cattle, sheep, and goats, and 20 donkeys. Opposite it, between r. bank and Umm el-Khasāsif I., is **Umm el-Yabābi** I.	$50\frac{3}{4}$
	$51\frac{1}{2}$

Intermediate distance Miles	Left Bank
	position for anchoring is with the palace and the British Consulate flagstaffs on the NW. side of the entrance to Haffār Channel in line, 68° true, rather nearer the Mohammareh bank than Dabba island.'
	The channel passes between Umm el-Khasāsif Island and the Persian shore, varying from 2 to 3 cables in width. The deepest water follows round the concave shore.
	Jabiriyeh, name given to the angle of land contained by the r. bank of the Kārūn and the l. bank of the Shatt el-'Arab. The Persian custom-house and residence of the Director of Customs, the British Consulate, and the premises of Messrs. Lynch, are situated here. Above this point the l. bank is intersected with numerous creeks and small villages, only the more important of which are mentioned here.
½	**Ma'mūri:** two small villages of Muhaisin. Steamers anchor off this point for Mohammareh traffic.
¼	
1	**Derbend** village, at the mouth of the large Derbend Creek.
¼	
¾	**Failīyeh,** between the Shatt el-'Arab and the r. bank of the Abu Jidi' Canal, is the head-quarters of the Sheikh of Mohammareh's government, and consists of a few hundred brick, mud, and reed houses, with some general shops and two coffee-houses. The inhabitants are Muhaisin and Arabs

Right Bank	Total distance Miles
Baljānīyeh tract. Pop. (1908) 900, mixed tribes, in 8 small villages. In 1908 three well-built brick houses belonging to local notables. 15,000 palms, 200 cattle, 100 sheep and goats, and a few horses.	$52\frac{1}{4}$
	$52\frac{1}{2}$
	$53\frac{1}{4}$
	$54\frac{3}{4}$
	55

Intermediate distance Miles	Left Bank
	of various other tribes, Baluchis, and negroes. The Sheikh's guard (about 400 Arabs and Baluchis) is quartered here. A small quay of date logs occupies the angle between the river and the canal, and about 1 m. up the Abu Jidi' is a small dock at which the Sheikh's steamers are repaired. There are two palaces here belonging to the Sheikh, who, however, does not usually reside at Failīyeh (see m. 54¾ below).
¾	Palace of the Sheikh of Mohammareh. It is not now his usual residence (see m. 54¾ below).
¼	Mouth of the **Nahr Kheyyein,** here marking the boundary between Turkey and Persia, and running WNW. behind the islands of Aqawat, Bārīn, and Kharnubiyeh.
¾	Upper end of **Umm el-Khasāsif** and lower end of **Shamshamiyeh** islands. The channel passes between these points and continues south of Shamshamiyeh and Taweileh islands. A spit extends about 600 yds. E. from Shamshamiyeh, but it is always wholly or partially visible. The Turks maintained a police and quarantine station on Shamshamiyeh, the inhabitants of which numbered in 1908 about 80, with 2,000 palms and a few live stock. On the N. side of the channel opposite Shamshamiyeh is the island of Aqawat, which is *Waqf* property, and is cultivated by some tribesmen of the Sheikh of Mohammareh.
1½	**Jezīret el-Buwarin** or **Bārīn** lying N. of Shamshamiyeh and Taweileh islands, and backed by Nahr Kheyyein. Pop. (1908) 3,500. A large village; 150 huts and several more substantial houses; lies on the **Kharnubiyeh** Creek, which forms NW. boundary of tract. 50,000 palms, 100 cattle, 1,500 sheep and goats, and 120 horses. On the N. bank of Nahr Kheyyein opposite the lower part of Bārīn is the tract of **Khumeiseh,** containing a new palace belonging to the Sheikh of Mohammareh, which is apparently now his usual residence.
¼	Lower end of **Taweileh** Island. This island is between 5 and 6 m. long, the average breadth being ¼ m. It is low-lying and covered with young date-trees. The only village is **Shirāji,** about 50 huts of Mashid, near middle of island.

Right Bank	Total distance Miles
Abu'l Fulūs tract. Pop., &c. (1908) 1,800 in about 12 villages; 25,000 palms, 300 cattle, 300 sheep and goats, 110 horses. Decaying brick industry. Small Turkish military post.	$55\frac{3}{4}$
Abu'l Fulūs Creek is a large inlet which can be ascended for some distance by steam launches. It runs into the desert in the direction of the Khōr 'Abdallah, with which it may communicate.	
Abu 'Ibgai extends up to Abu'l Khasīb Creek. Pop., &c. (1908), 2,000, mixed tribes; 8 or 9 hamlets, 50,000 date-palms, 200 cattle, 200 sheep and goats, 200 horses. The Sheikh is agent to the Naqīb of Basra, who owns most of the property in this neighbourhood.	$57\frac{1}{4}$
	$58\frac{1}{2}$
Abu'l Khasīb Creek. At the mouth is a police and customs post. This creek communicates above Abu'l Khasīb town with the creek of Abu Mogheireh.	$58\frac{3}{4}$
Abu'l Khasīb, a town situated 2 m. up the creek of the same name. Pop. 12,000 of various tribes, including Beni Malik. T. .	
The town is divided into two quarters—on the E. of the creek the Bāb Sultān, on the W. the Bāb Suleiman. Each quarter contains a large bazaar in which European goods are sold.	
The town is of considerable antiquity, and is said to have been named after a freed slave of the Caliph Mansūr. It is now of importance as a centre of the export trade in dates. Growers and exporters sometimes meet here early in September to fix season's prices. Agricultural resources were estimated (1908) at 400,000 palms, 1,000 cattle, 3,000 sheep and goats, 300 horses, 500 donkeys, and 50 camels. One of the chief residents was Sheikh Ibrāhim bin-'Abdul Wahad, who had lived at Bombay and could speak Hin-	

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	
$1\frac{1}{2}$	
$1\frac{1}{4}$	Mouth of **Kharnubiyeh** Creek. About 1 m. up this creek on its NW. bank is the village of Kharnubiyeh. 200 Muhaisin, 3,000 palms, and some live stock. The village is *Waqf* property. **Suleimāniyeh** tract begins here and extends up to mouth of Du'eiji Creek. Pop., &c. (1908), 450 'Atub (the late Sheikh of the 'Atub lived in the largest of the six hamlets); 10,000 palms, and a little live stock. The tract is *Waqf*.
$\frac{1}{4}$	

Right Bank	Total distance Miles
dustani. The town was the seat of the Mudir of the Abu'l Khasīb *Nahiye* of the *Kaza* of Basra.	
Between Abu'l Khasīb Creek and Lebāni is **Ibrāhīm** Creek.	
Lebāni, small village (three well-built houses besides huts). Pop. (1908) 350 Idan. Palms are included in estimate for the village of Nahr Khos, below ; a little live stock.	$59\frac{3}{4}$
	$60\frac{1}{4}$
Nahr Khos village, 2 m. up creek of same name. Pop. (1908) 1,300, Idan, &c. ; 120,000 palms (including those of Lebāni), 80 cattle, 250 sheep and goats, and a few horses.	$60\frac{1}{2}$
'Abdul Hamad hamlet, called after a wealthy landowner who has a well-built house here.	
Abu Mogheireh, the largest creek between Fāo and Basra, is said to extend into the desert a distance of two hours by *bellam.* It communicates with creek of Abu'l Khasīb. $2\frac{1}{2}$ m. up creek is a large village of the same name inhabited by 4,000 Beni Malik, dwellings all huts. Date-palms estimated (1908) roughly at 100,000 ; 250 cattle, 400 sheep and goats, and a few horses. Between Abu Mogheireh and Sabīliyat is **Halbi** Creek.	$61\frac{1}{4}$
Sabīliyat Creek, and village of same name on creek.	$61\frac{1}{2}$

Intermediate distance Miles	Left Bank
1	**Du'eiji** Creek. At some distance ($\frac{1}{2}$–$\frac{3}{4}$ m.) up this great creek the Nahr Kheyyein (see m. 52$\frac{1}{2}$) takes off to the E. **Du'eiji** village is about 2$\frac{1}{2}$ m. up Du'eiji Creek. The village is divided into several small hamlets. Pop., &c. (1908), 3,000 Muhaisin; 50,000 palms, 250 cattle, 600 sheep and goats, a few horses, and 20 camels. Two-thirds of village belonged to the *Dā'irat es-Sanīyeh.* There is a Turkish custom-house here. The Basra—Mohammareh land route runs through Du'eiji: see *Route* 3, m. 13.
$\frac{1}{2}$	Upper end of Taweileh Island.
$\frac{1}{4}$	**Nahr Jasīm** Creek. Village of same name $\frac{1}{2}$ m. up it. Pop. 500 Muhaisin; 10,000 palms, some live stock.
	Ajeirawīyeh I., a long, low island stretching from a point in this neighbourhood (r. bank) to a point 2 m. by river below the British Consulate in Basra. Its length is about 8$\frac{1}{2}$ m., and its average breadth $\frac{1}{4}$ m. At its northern extremity was situated the Turkish quarantine station. Pop. 1,500, Idan and 'Atub; about 30,500 date-trees. The island is separated from the r. bank by a channel known as Salhiyeh, which is navigable by launches at high water. There are about twelve small hamlets on the island. Some property on the island is owned by the nephews of the Sheikh of Koweit.
	Between Nahr Jasīm and Daheimet es-Saghīr Creek are three small villages, at intervals of $\frac{1}{4}$–$\frac{1}{2}$ m., with pop. of 60 to 100 Muhaisin; 7,000 to 8,000 palms in all, and a few cattle, sheep, and goats. A little wheat and barley.
$\frac{3}{4}$	
$\frac{1}{4}$	

Right Bank	Total distance Miles
Pop. (1908), 4,000, mostly 'Atub, in huts. Well-built and fairly large house, residence of Naqīb of Basra. 55,000 palms, 200 cattle, 500 sheep and goats, 20 horses, 5 camels, 42 donkeys. Between Sabīliyat and Sangar is **Khabābi** Creek.	
Sangar village, extending for about ½ m. up river to tomb immediately below Yahūdi Creek. Pop. (1908) 1,300 'Atub. Some of the villagers are fishermen, and there are about 20 boats. The date plantations here, though dense on river bank, are not deep. A few cattle, sheep, and goats. Pottery, boat-building.	62
	62¼
Yahūdi Creek, very tortuous, and village 1½ m. up creek. Pop. (1908) 1,600. 90,000 date-palms, 100 cattle, 200 sheep and goats, a few horses. Creek easily distinguished by tomb near its mouth.	62½
	62¾
	63
Hamdān es-Saghīr. Small hut village grouped round two well-built houses belonging to Sheikh of Hamdān.	63¼
Mouth of **Hamdān** Creek. **Fejat el-'Arab** village on l. bank of creek.	63¾
2½ m. up creek is **Hamdān** town. Pop. (1908) 11,000, mostly Muhaisin; 30 to 40 well-built brick houses, rest of dwellings huts. 150,000 palms, 2,500 cattle, 1,000 sheep and goats, 40 horses, 200 donkeys; grazing good. Between the town and the river are a tomb and a shrine visited by Shiahs and Sunnis respectively. It has been said that the Khōr 'Abdallah can be reached from Hamdān by a boat channel across the desert.	
	64¼

Intermediate distance Miles	Left Bank
½	**Daheimet es-Saghīr,** creek and village. Pop., &c. (1908), 600 Muhaisin ; 2,000 palms, a little live stock. Some barley and wheat grown.
¼	**Daheimet el-Kebīr,** creek and village, with smaller population, but about double the resources of Daheimet es-Saghīr. The date-palms in the neighbourhood of these two villages are comparatively sparse.
¼	
¼	**Kūt Suwādi,** creek and village. Pop. 600. A good view of surrounding country here obtained. Date-trees sparse (6,000) but productive. Some cattle, sheep, and goats. A few horses and camels.
¼	**Kūt esh-Sheikh,** creek and village. Land owned by Naqīb of Basra. Pop. (1908) 150 Muhaisin ; 7,000 palms, a little live stock.
¼	
½	**Kūt Ghadhbān,** creek and small village.
½	**Kūt el-Gawām** Creek. On the eastern branch of this creek is the small village of **Mohiyeh.** Half a mile up creek

Right Bank	Total distance Miles
Yūsifān, a small settlement containing three well-built houses, 600 yds. below Beit No'mān.	64¾
Beit No'mān (or Beit Na'ameh), settlement of 250 persons (1908) containing a large house with frontage of about 400 ft. lying on the river bank. This building belongs to a Mohammedan family (No'mān or Na'ameh) of Basra, which in 1908 owned the neighbouring land.	65
Resources in 1908 of Beit No'mān and Yusifān: 15,000 palms, a few cattle, sheep, and goats, 20 horses, and a few camels.	
Moheijāran Creek. Village of same name 2 m. up creek. Pop. (1908) 1,500, mainly Idan. Several brick houses. The dates grown here have a high reputation; there are 180,000 palms, 500 cattle, 1,000 sheep and goats, and 20 horses.	65½
Mahaulat ez-Zoheir. Pop. (1908) 200. Two or three well-built stone houses, 5,000 date-trees, a little live stock. Village is on river 4 m. below British Consulate.	66½
	67
Sarāji, village about 2 m. up a large creek. Pop. (1908) 2,000. As the creek is entered from the river a large house on r. belonging to a local notable, and another on the l. belonging to the agent (in 1913, Agha Ja'far) of the Bombay and Persia Steam Navigation Company. Creek almost dry at	68¼

Intermediate distance Miles	Left Bank
	is the walled village of **Gawām;** 10,000 palms, a little live stock. Between **Kūt el-Gawām** and **Kūt el-Jū'** are four small villages at intervals varying from 600 yds. to ¾ m. on creeks. Population varies from 130 to 250; each village has 5,000 to 10,000 date-palms, and a few cattle, sheep, and goats. One, viz. **Kūt-bin-Mina** (spelling uncertain), somewhat over a mile below Kūt el-Jū', is surrounded by a well-built mud-wall, 10 ft. high and 2 ft. thick.
	Yemīn, on S. shore of Ajeirawīyeh Island, contains several stone houses. Here are an ice factory and flour mills belonging to Yemīn Haroun, a Jew.
½	
¼	
½	
1	
½	**Kūt el-Jū'.** Village 300 yds. up a creek which enters the river about 3¼ m. below Tanumeh Hospital and about 1¾ m. below upper end of the Ajeirawīyeh. Pop. (1908) 1,700. Village crowded. 20,000 date-palms. Fair pasturage for live stock. Besides some cattle, sheep, and goats, a few horses and donkeys.
1¼	

Right Bank	Total distance Miles
1 m. from the river at low water. 60,000 date-trees, 300 cattle, 40 sheep and goats, and a few horses.	
Barādhīyeh, village about 1 m. up a creek, lying between the Khōrah and Sarāji creeks. Pop. 600. Village lies in very dense date plantations estimated at 100,000 palms. Some cattle, sheep, and goats, and a few horses.	68½
Khōrah Creek. Its mouth is 1 m. below British Consulate at Basra, and it is said to reach the dry desert behind. Village of same name 2 m. up creek. Pop. (1908) 4,000, of various tribes. About 30 brick houses. Estimated resources: 200,000 date-palms, 1,000 cattle, 2,000 sheep, 20 horses, and 8 camels.	68¾
Manāwi el-Pasha Creek, a short distance N. of the Khōrah Creek. The American firm of Messrs. Hills Brothers owns houses on either side of the mouth of this creek. At about ¼ m. from the river is the considerable village of Manāwi.	
Between Manāwi Creek and the British Consulate are the creeks of Serai (750 yds. below the Consulate) and Ghāzareh. Large buildings along the river. See description of Basra, p. 384.	
Basra (late British Consulate).	69¾
Anchorage. *Persian Gulf Pilot,* 1915, p. 290:	
'There is anchorage in mid-channel in Basra reach in from 34 to 48 ft. Vessels should moor with the anchors up and down the river and plenty of cable on each as the streams are strong; small local steam craft should be given a wide berth, as they usually lie at single anchor with a long scope of cable. It is better to moor near the r. bank, as vessels almost invariably swing with their sterns towards the l. bank. In the date season there are often fifteen or more steam vessels moored in Basra reach, when it is difficult to see where there is a vacant berth.'	
Not more than two vessels can lie abreast, but any number can lie up and down the Shatt el-'Arab.	
High tide at Basra is about 6½ hrs. later than at the outer bar. Tides rise 6 to 9 ft.	
Landing. Before the war there were the following wharves on the river front:—	
1. That of Messrs. Gray, Mackenzie & Co. close to the mouth of the Ashar Creek on the S. side. Length 80 yds. Height above water at high tide about 2 ft.	

Intermediate distance Miles	Left Bank
$\frac{1}{4}$	
$\frac{1}{4}$	**Salhiyeh,** on the upper end of Ajeirawīyeh Island. Turkish lazarette and quarantine station.
	For about 2 m. northward from abreast of the upper end of Ajeirawīyeh Island the left bank is bordered by a drying mud-bank, about 100 yds. in width, and shelving gradually so that the 30-ft. line is nearly 250 yds. from the l. bank. The r. bank in this neighbourhood is almost steep to.
1	

2. That at the German Consulate ¼ m. below the former British Consulate.

3. That at the dépôt of the Baghdad Railway at Magil. Has steam cranes and iron sheds.

Other wharves could easily be constructed with date-logs.

A number of piers have recently been constructed.

The neighbourhood is quite flat, and troops could easily be landed on either bank, but movement would be impeded by the numerous deep, muddy creeks.

ROUTE I B

BASRA TO KURNA (47 M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Persian Gulf Pilot*, 1915; Admiralty Chart 2483; Force 'D', Map Serial 97 (Nov. 1915); and other sources of information.

From Basra to Kurna the Shatt el-'Arab has a course of about 47 m. Between Kurna and Basra the river varies from about 250 to 600 yds. in width. Its depths at lowest river levels vary generally from 3 to 6 fathoms, but in places only 12–15 ft. may be found in a low river (see under m. 6¼ and m. 35), and on Kurna Bar 7–8 ft. (m. 44 and m. 45¼, pp. 58, 59). The details of navigation are

Right Bank	Total distance
	Miles
Basra, British Consulate.	0
(For Ashar and Khandaq creeks see Gazetteer of Towns, pp. 384–5.)	
Nahr er-Rubāt. There are some large houses on this creek. **Makinamalsus** above the creek.	1
Matibut or **Sūfiyeh** Creek, 1,200 yds. above Nahr er-Rubāt: about 1,200 yds. up the creek are the hamlets of **Mufliyeh** and **Sūfiyeh.**	1¾
A few hundred yards above the Matibut or Sūfiyeh Creek is an oil-tank on bank near a mud tower, belonging to the	

liable to be modified by changes in the channel caused by floods. Kurna Bar is the principal obstacle.

Both banks between Basra and Kurna are low and fringed with date plantations, which, however, are not here so dense or so unbroken as between Basra and Mohammareh. Among the date-groves, which are intersected by numerous creeks, lie a number of villages, little more than clusters of mud huts. In this region much rice is grown, and buffaloes, cattle, and sheep graze on the banks.

On the r. bank, the country behind the marginal fringe of cultivation is marshy and liable to inundation in the flood season. The telegraph line follows the bank. There is a land route along it: see *Route* 2. From Gurmat 'Ali to m. 17 the bank is shelving and muddy for 20–30 yds. from the water, and landing is difficult. About m. 17 good landing-places are easily found. There are now bridges across the mouth of the new channel of the Euphrates at Gurmat 'Ali and across that of the old channel of the Euphrates at Kurna. The inhabitants of the r. bank are mixed Arabs. There are hereditary Sheikhs of Deir, Sherish, and Kurna.

On the l. bank beyond the date-groves stretches an open and sandy plain, liable to floods in places, especially in the area of about 100 sq. m. behind the tracts of Kuteibān and Hamrah. Traces of old canals will be found in many places, but especially to the south of this flood-area behind the creeks of Kibasi es-Saghīr andShiyabiyeh. There are mounds and ruin-heaps marking the sites of ancient settlements. Farther north there is marshland on the banks of the Shatt es-Suweib, which enters the Shatt el-'Arab a few miles below Kurna.

Intermediate distance Miles	Left Bank
0	
1	**Girdilān** Creek and large village: some date plantations here owned by nephews of Sheikh of Koweit. Below Girdilān are large houses owned by local magnates.
¾	

Right Bank	Total distance Miles
Anglo-Persian Oil Company. River steamers take in oil fuel here.	
Jubeileh, a large creek with village of same name.	$2\frac{1}{2}$
Silq (pronounced Silij) village: date-groves belonging to Ali Pasha of Zaheir.	
Kūt el-Farangi (known by Europeans as **Magil**), on N. side of a large creek known as **Dockyard** Creek. Docks and workshops of the Euphrates and Tigris Steam Navigation Co., generally used only for small repairs: native village and some brick-kilns. British Consulate was here until about 40 years ago.	$3\frac{3}{4}$
Abus Sabūr (Magil ?) Creek, extending into the desert (1908).	$4\frac{1}{4}$
Fuliwān brick-kilns.	$4\frac{3}{4}$
Agovat Island extends for about a mile opposite Fuliwān brick-kilns and Gurmat 'Ali tract, with a breadth of from 200 to 250 yds. It lies slightly nearer to the left bank, but the channel here follows the l. bank.	
Gurmat 'Ali tract extends for about a mile up to the new channel of the Euphrates and for some distance above it: scattered groups of huts.	$5\frac{1}{4}$
Mouth of **Euphrates** (new channel). (See *Route* IV A (ii).) This is now bridged (see *Route* 2, m. $7\frac{1}{4}$).	$6\frac{1}{4}$
Island, called **Jezīret es-Saghīr,** extends from opposite north side of mouth of Euphrates for 2 m. with an average breadth of about 200 yds. For channel see opposite.	
20 brick-kilns.	
Miyādīyeh Creek apparently leads into 'Antar Creek, communicating with the new channel of the Euphrates. This creek is now bridged (see *Route* 2, m. 6).	$8\frac{1}{4}$
Hāritheh tract (in the Basra *Kaza*), a stretch of date-groves and rice-fields about $15\frac{1}{2}$ m. in length up to Nahr 'Umr. Here and there gaps appear in the palm-groves.	
Near Nahr 'Umr the palms become fewer, and on some maps this part is called Kheimah tract. It has a separate sheikh.	$12\frac{1}{4}$
	$14\frac{1}{2}$

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	**Kharāb** village on an island formed by creek.
$1\frac{1}{4}$	**Jezīret el-'Ain,** an islet opposite Kūt el-Farangi formed by a large creek, Kibasi es-Saghīr. On the mainland side of the creek is a village with date plantations inhabited by Muhaisin, 'Atub, Qatarneh, and Idan. The paramount sheikh of the Idan was reported in 1908 to live here.
$\frac{1}{2}$	
$\frac{1}{2}$	**Shiyabiyeh** Creek and village: this creek and Kibāsi es-Saghīr connect with the disused canal of Nahr Riyān, which leads NE. across the plain, and apparently connects eventually with the Sableh and Qarma canals on the r. bank of the Kārūn River in the neighbourhood of Sabeh village.
$\frac{1}{2}$	
1	**Fīrūziyeh,** village with date-groves. Channel follows the left bank past the Jezīret es-Saghīr. Depths of only 15 ft. (low-river level) are charted opposite the upper end of the island. **Saghīr** Creek extends inland for about 5 m. to a network of old canals.
2	**Shalāhi** tract extends for about 2 m.
4	**Abu'l Kilāb** Creek. **Kuteibān** tract extends up to creek of same name.
$2\frac{1}{4}$	**Kuteibān** Creek, said to join Kārūn River. Large village of same name inhabited by Muhaisin, 'Atub, Qatarneh, and Idan. **Hamrah** tract extends for some miles: it is uninhabited and open.

Right Bank	Total distance
	Miles
Mound about 20 ft. high: another of the same height about ½ m. to N., about 1 m. from river.	15½
A short distance above this mound the river begins to trend in a general WNW. direction.	16¾
	19
Nahr 'Umr. Large creek and village of same name, the property of the Naqīb of Basra. Dates and rice cultivated. On the S. side of the mouth of the creek is the shrine of Imām Sheikh 'Ali.	22
The **Deir** tract extends from Nahr 'Umr up to Nahr Shāfi. The palm-groves are here denser. Deir tract is under its own sheikh.	
Deir village, with date-groves, lies some distance back from the river.	29
	30
Yazduk Creek.	33
Shāfi Canal and village. The creek is now bridged (see *Route* 2, m. 30). 5 brick-kilns. There used to be a Turkish military post here. Above this there is open country for about 5 miles.	35
Depths of 12–15 ft. (low-river level) have apparently been found opposite the creek and for 2–3 miles above; depths then ranged from 15–24 ft. (l.w.) up to Kurna Bar.	
Sherish tract begins and extends up to Sherish village opposite Kurna. It is under its own sheikh.	36
Nahr Derbend, leading to the old channel of the Euphrates near Derbend village. (See *Route* IV A (i), m. 5.)	42
	43½
Odin Point.	44

Intermediate distance Miles	Left Bank
1	
1¼	
2¼	**Buqhah** tract extends up to Aseirij tract, below: palms begin again, and scattered hamlets appear.
3	**Aseirij** tract extends up to the Nashweh Canal.
7	
1	**Nashweh** Creek, on which is a village of the same name, inhabited by Ahl el-Jazair and other tribes: the head-quarters of a *Nahiye* in the *Kaza* of Kurna. There are two or three other hamlets in the tract. **Nashweh** tract extends for several miles above this point.
3	
2	
1	**Maiyeh** tract. The land between the upper end of Nashweh tract and the mouth of the Suweib is inhabited by Maiyeh Arabs.
6	
1½	Southern mouth of Suweib River (marked on some maps as Suweib Canal).
½	**Suweib** River (marked on some maps as Lilley Creek). On the S. bank at the mouth is Kūt el-Ajam, a mound with ruined fort and village. This river drains the Khōr Hawīzeh, the great belt of marshes which lies a few miles

Right Bank	Total distance Miles
Kurna Reach. The river here trends N. and then NNW., and broadens to about 400 yds. (low water), the water shallowing gradually from about 30 ft. to 7–8 ft. (November 1915) on Kurna Bar. Channel follows foreshore off l. bank, which is flooded in high-water season. (See under l. bank.) The r. bank is fringed by palm-trees, off which lies a foreshore of mud. In front of this foreshore, and extending from it into the river for about $\frac{3}{4}$–$1\frac{1}{4}$ cables, is shallow water (1–6 ft. in November 1915).	
Kurna Bar. Channel follows l. bank: see opposite.	$45\frac{1}{4}$
River runs WNW. to Kurna.	
	$46\frac{1}{4}$
River here about 200 yds. broad (low water). Depth in February 1915, 22–26 ft. Channel in mid-stream.	$46\frac{1}{2}$
Depth about 40 ft. in February 1915.	$46\frac{3}{4}$
Mouth of the **Euphrates** (old channel).	47
Kurna.	

Intermediate distance Miles	Left Bank
	E. of the Tigris between Kurna and Qal'at Sālih, and is fed by streams from the Persian hills, the chief of which is the considerable river, the Karkeh. The Suweib apparently enters the Shatt el-'Arab from the SE., but the country near its mouth is flooded in spring or after rain and the course of the river winds considerably in the lowest reaches, above which it flows from about NNE., running parallel to the Tigris for about 10 m. at a distance of about 6 m. to eastward. The two rivers are connected by the Rotah Creek, which enters the Tigris near Pear Drop Bend (see *Route* III A, m. 9½). The upper course of the Suweib is lost in the marshes to the N. Suweib village is about 1¼ m. up the Suweib River on its l. bank, and is surrounded by date-groves. The Maiyeh headmen live here. (For another Suweib village in the Hawīzeh marshes see *Route* 7, under m. 48.) Channel follows l. bank. Off the l. bank in this reach lies a low grassy foreshore ¾–1 cable in breadth, with a four-foot bank in low water, but covered with 1–3 ft. of water when the river is high. Beyond this foreshore are scrub and palms, and some Arab settlements.
1¼	Buoy. Depth in November 1915, 9 ft., shallowing above the buoy to 8 and 7 ft. About 100 yds. NW. of the buoy is a sunken lighter, about 130 yds. to W. of which is a patch with a depth of 6 ft. in November 1915. A conspicuous clump of palms (Cox clump) lies on l. bank about 450 yds. W. of the sunken lighter. Depths in February 1915 were 14–15 ft., with 12 ft. on the patch. Depths in high-water season (April–July) would probably be 17–14 ft. in the channel. The bar is probably liable to frequent alteration as a result of the annual floods.
1	In February 1915 there were 17–19 ft. about this point.
¼	Pier for road leading to Muzeira'ah village opposite Kurna.
¼	**Espiègle** Point.
¼	

ROUTE IC

THE NAVIGATION OF THE KHŌR 'ABDALLAH, KHŌR ZOBEIR, &c.

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Persian Gulf Pilot*, 1915; Admiralty Charts 2837 *b* and 1235; some recent information.

The **Khōr 'Abdallah** is a large inlet running NW., from the head of the Persian Gulf to Warbeh Island N. of Būbayān, between the island of Būbayān to the SW., and the mouth of the Shatt el-'Arab on the NE. A channel passing N. of Warbeh connects the Khōr 'Abdallah with the **Khōr eth-Tha'alab** and the **Khōr Zobeir,** and another channel, apparently known as the Khōr Būbayān, leads from the Khōr 'Abdallah S. of Warbeh Island to the head of the **Khōr es-Sabīyeh.**

The **Khōr 'Abdallah** is about 13 m. wide at its entrance between Ras el-Qā'id on Būbayān (with conspicuous fort), and Ras el-Bīsheh at the mouth of the Shatt el-'Arab. Its length to the E. end of Warbeh I. is 20 m., where its width is about 2½ m. The navigation channel trends NNW., and passes between the bank called Fasht el-'Aish and the flats off Būbayān to the SW., and the bank called Maraqqat 'Abdallah to the NE. (see *Persian Gulf Pilot*, 1915, pp. 156 and 280). The width of the channel varies from 1 to 4 m. between the 3-fathom contours. Depths of 4 fathoms can be carried to about 5 m. SE. of Warbeh Island (3½ m. from the Warbeh sand-bank). Thence depths of 3½ fathoms are to be found up to the channels on either side of Warbeh. The northern of these channels has apparently depths varying from 7 to 2½ fathoms, the least depth being at the western end. The southern has depths of 2–10 fathoms, but its navigation is not recommended. There are said to be good anchorages in the northern channel. Both sides of the Khōr 'Abdallah consist of low alluvial land covered with reeds and grass. Shallow flats extend a long way from both sides, but much farther from the northern shore, where the land is marshy and liable to inundation. Boat channels are believed to connect the Khōr 'Abdallah with the Shatt el-'Arab between Basra and Mohammareh at Hamdān or Abu'l Fulūs.

The **Khōr es-Sabīyeh** is an inlet of the sea running NNW. from the northern corner of Koweit Bay between the mainland on the W. and Būbayān Island on the E. A small prolongation of the Khōr passing W. of Warbeh I. joins the Khōr eth-Tha'alab leading

to the Khōr Zobeir: while another channel passing S. of Warbeh connects with the Khōr 'Abdallah (see above). The Khōr es-Sabīyeh has depths of 1–5 fathoms. The southern approach over Dhorūb Flat is very shallow. The *khōr* is about ½–1 m. wide. Its banks are swampy, but there are a good many boulders, especially on its E. side. The desert route from Umm Qasr to Koweit (*Route* 23 d) runs along its W. shore. Landing at Qasr es-Sabīyeh at the corner of Koweit Bay is difficult at all tides on account of mud.

The **Khōr eth-Tha'alab** runs for about 6 m. W. and N. from Warbeh Island with soundings of 6–9 fathoms. At 6 m. it divides, one branch (the **Khōr Umm Qasr**) running W. past Umm Qasr (see *Routes* 23 a, b, d) with only 3–4 ft. of water at low tide, and the other (the **Khōr Zobeir**) running N. Vessels of 25 ft. draught and 450 ft. length can navigate the Khōr Zobeir up to this point, but the channel is winding and navigation is not easy. The best landing-place is about 3 m. S. of Umm Qasr and about 1 m. N. of a sharp E. bend of the *khōr*. Here the slope of the bank is $\frac{1}{20}$, and at high tide light-draught native craft or barges can come close to the shore, which is firm from here to the higher ground 1 m. W., along which the track runs. Farther N. the ground between shore and track is soft. Above the Khōr Umm Qasr the Khōr Zobeir continues N. for some 14 m. to Junction Island, being navigable thus far by vessels of 20 ft. draught and 300 ft. length. Here the *khōr* divides, and the main branch is navigable 5 m. farther, to Dwerat Island, for launches of 6 ft. draught and 60 ft. length.

ROUTE II A

THE NAVIGATION OF THE KĀRŪN

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Military Report on Persia*, 1911; *Persian Gulf Pilot*, 1915; Readings of the Kārūn River Gauge at Ahwāz (below the Rapids); and other information.

High and Low Water Seasons.—The Kārūn is liable to more violent and irregular changes of level than the Mesopotamian rivers. It is generally low water from August till towards the end of November, though in the abnormal year 1914 there was a marked rise at the end of October. In December–January there are usually considerable rises, which, however, vary greatly in extent from year to year. Towards the end of January or beginning of February the river usually sinks, to rise again with the spring floods which begin at the end of February or beginning of March. Very violent and

sudden rises may occur at the end of February, or (more commonly) in March or April. In the second half of April there is the greatest mean volume of water in the river, which sinks steadily through May and continues to decline through June and July.

The difference between high and low water may be taken to be on the whole 12–14 ft., but there is a difference of 24 ft. between the highest and lowest records.

The details of navigation are subject to much alteration owing to the changes produced on the bed of the river by the floods.

Mohammareh—Bandar Nāzirī (about 110 m.)

Up to **Bandar Nāzirī** the Kārūn is in most parts, and in ordinary seasons, navigable by a vessel of 5 or even 6 ft. draught: but in the 20 m. below Nāzirī, a vessel of 3½ ft. draught may find difficulty when the river is low. Vessels of 12 ft. draught can reach **Salmāneh** bend, 14 m. above Mohammareh.

The rate of the stream in a high river is 4–6 knots, in a low river about 2 knots. The river is 2–5 cables wide, and the channel is tortuous (especially above **'Ali ibn el-Husein**, 31 m. from Mohammareh), and very narrow at the bends, where the deepest water is generally on the concave side. Sand-banks extend from most of the points, sometimes half-way across the river. The tide is felt as far as 'Ali ibn el-Husein.

As far as **Kūt 'Abdallah**, 5–6 m. below Nāzirī, the bottom is mostly sand, or sand and mud, and is generally free from rocks; though 2 m. below **Fārisīāt** village a rock covered at high river projects about 30 ft. from the r. bank. Off **Kūt 'Abdallah** are rocks with about 3 ft. of water. From this village to **Bandar Nāzirī** the river is much encumbered with sand-banks and subject to constantly changing channels. The banks from **Mohammareh** to **Bandar Nāzirī** are low, and the adjoining country consists of uncultivated plains deserted in summer and occupied by Arab encampments in winter.

From **Bandar Nāzirī** to **Ahwāz** (little more than 1 m.) there is a great rise in the river-bed, and a series of heavy rapids, generally considered unnavigable, exists. These rapids are 5 in number, with a total length of about 2,000 yds. The real obstacle to navigation is the second rapid from the top, where a reef runs out from the l. bank leaving a channel only 100 yds. broad, broken up by islets into two or three passages, of which the one nearest to the r. bank is the easiest of ascent, but has a width of only 50 yds. The water here rushes with a fall of 1 in 50. The total loss of height between

the top and the bottom of the rapids is 1 ft. in high water, and 7–8 ft. in a low river.

The rapids are said to be passable by towing, and it is stated that steamers have twice successfully ascended them under steam. Usually cargoes are landed at a small natural basin off Bandar Nāzirī, and conveyed by tram to vessels above the rapids. It is reported that a canal on the l. bank, some 2,350 yds. long, with a cutting 35 ft. deep, would be required to avoid the rapids. The formation here is sandstone. A possible alternative to this would be, it is said, the reopening of an ancient (probably irrigation) canal which runs E. of Ahwāz ; its length is about 2½ m.

For the description of Ahwāz—Nāzirī see Gazetteer of Towns.

Ahwāz—Shaleilī (about 80 m.)

The Kārūn above Ahwāz is navigable by shallow-draught steamers up to **Shaleili** (on the Ab-i-Gargar Channel 7½ m. below Shushtar).

The river between **Ahwāz** and **Band-i-Qir** is tortuous, 1–3 cables wide, flowing between banks 10–30 ft. high. The bottom from Ahwāz to **Qarāneh** Reach is rocky : above **Qarāneh** Reach it is sand, or sand and mud.

At **Band-i-Qir** the **Āb-i-Dīz** tributary comes in on the r. bank (see below) and the Kārūn divides into two channels, the western being called the **Āb-i-Shatāit,** the eastern the **Āb-i-Gargar.** The **Āb-i-Shatāit** is blocked about 1 m. above Band-i-Qir by a ridge of rocks which makes it impassable for steamers and nearly so for native boats. The **Āb-i-Gargar** is bridged at Band-i-Qir by 8 pontoons: this bridge is constructed in two halves, either of which can be removed for the passage of vessels. The stream near Band-i-Qir is 40–100 yds. wide, with depths of 3–6 ft. Under the telegraph wires which cross the river a few miles above Band-i-Qir there is a rocky ridge having a very narrow passage barely practicable for steamers. Between **Hasan Seyyid** and **Daulatābād** the channel is full of dangerous snags very firmly rooted. Khalat peak, a triangular-shaped summit of the nearest hills to the E., is an excellent mark. The banks of the river in this region are 30–40 ft. high. Steamers stop at Shaleili landing-place on the r. bank opposite an island. It is reported that a little blasting would enable steamers to go higher.

The Āb-i-Dīz Tributary

The Āb-i-Dīz has been ascended in August by S.S. *Shushan,* a stern-wheeler (80 ft. long, 30 ft. beam, and 2½ ft. draught), as

far as **Umm el-Wāwiyeh,** 20 m. by road from Dizfūl. It is reported that in spring and winter the river is navigable as far as Kūt 'Abdush Shāh. The *Shushan* entered the Āb-i-Dīz by a channel 20 yds. wide and proceeded for 1½ hrs. through a winding channel with 3 ft. of water. The channel then deepened to an average of 9 ft. except where, about every 5 miles, it was barred by long sand-banks covered by 3 ft. of water. On the third day the *Shushan* reached **Kūt Bandar.** Here a reef of rocks extends across the river, through which is a straight channel 4 ft. deep. Then passing through intricate channels the vessel arrived at **Umm el-Wāwiyeh,** about 10 m. beyond Kūt Bandar. It was found impossible to proceed farther. On the return journey much difficulty was experienced through grounding and striking in the bends. The ascent occupied 51 hrs., the descent 36 hrs.

The country on the Āb-i-Dīz is in places very well wooded, and the steamers on the Kārūn before the war drew thence their supply of wood fuel.

ROUTE II B

THE NAVIGATION OF THE BAHMĀN SHĪR

Authorities:—Lorimer, *Gazetteer of the Persian Gulf,* 1908; *Persian Gulf Pilot,* 1915.

This is a mouth of the Kārūn River, which enters the Persian Gulf about 10 m. E. of the Shatt el-'Arab and takes off from the main stream about 2 m. above Mohammareh. Its total length is about 54 m. (40 in a straight line).

Vessels of 7-ft. draught can enter the Bahmān Shīr from the Persian Gulf at low water, the least depth being 1¼ fathoms on a bar of soft mud 10 m. from the mouth. Inside the bar depths vary from 1½ to 2 fathoms. The river is navigable for about 30 m. up-stream by vessels drawing 7 ft., but in the uppermost 14–15 m. it is very shallow, the channel being obstructed by mud-flats, and in 1890 R. I. M. S. *Comet* (3-ft. draught) grounded twice in these reaches. Since then the conditions of navigation have probably become worse. Native sea-going boats cannot pass the shoals of the Upper Bahmān Shīr without assistance from the tide, the rise and fall of which make a difference of about 9 ft.

Near its mouth the stream flows through a region of shelving mud-flats covered above the water-line with coarse grass and reeds. The banks then become firm and steep, and grassy plains extend on either side of the river. About 20 m. from the sea begin the date

plantations and villages which line the banks on the rest of the Bahmān Shīr's course. Islands are easily formed in the channel by staking the stream and so causing a deposit of silt to be formed. This is frequently done, the new islands being used first for pasturage, and subsequently for cultivation.

The inhabitants of the villages on the banks are Arabs of the Ka'ab and Muhaisin tribes.

The natives apparently do not use the term Bahmān Shīr for the whole river, but have various names, taken from the villages on the banks, for the different parts of the stream. They perhaps use the term Shatt Suleik to refer to the whole stream: this must not be confused with the Khōr Silak, the name of a stream in Dauraqistan which enters the Gulf between the Bahmān Shīr and the Khōr Mūsa.

THE TIGRIS

ROUTE III A

KURNA—AMARA (92½ M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; Force 'D', Map Serials 35, 36 (July 1915); and other sources of information.

The navigation of this section is easy for shallow-draught steamers as far as 'Ozeir (Ezra's Tomb), up to which point there is a depth of not less than 12 ft. The river then begins to shallow and narrow, a large volume of water having been taken off by canals between Amara and Qal'at Sālih, especially by the Michrīyeh (m. 59½). The stream is bordered by marsh covered with high reeds. 3 or 4 m. below Qal'at Sālih the banks become more defined and the water in the channel deeper, and above that place the improvement continues to Amara. At no season in the year is navigation by river steamers impossible in this section between 'Ozeir and Amara, but when the river is at its lowest navigation in the shallower reaches becomes more troublesome and tedious, though never dangerous. There are some sharp elbow-bends between 'Ozeir and Qal'at Sālih, and on the convex shore at the river bends there are usually shoals. Details of the navigation are continually changing. Those in the following account are from charts of July and August 1915.

In the narrows between Ezra's Tomb and Qal'at Sālih, Arab

cultivators have been causing considerable deterioration in the channel, both by throwing out brushwood groynes and reclaiming the land on a falling flood, and by cutting irrigation channels at the concave sides of bends. It is reported that if these practices were checked and the narrows dredged, navigation would be materially assisted here.

2 m. above Kurna town the palm-trees cease, and between that point and Amara occur only in isolated clumps. Marshes prevail on both banks of the river to a point some 10 m. above 'Ozeir, though in places there are small areas of cultivation; above this point there are fine areas of grazing ground and cultivation and numerous Arab settlements of mat huts, sometimes collected round a large mud building, half dwelling-house, half fort.

From Kurna to 'Ozeir the banks on both sides of the river are inhabited by small and unimportant Arab tribes, the largest being,

Right Bank	Total distance
	Miles
Kurna fortifications.	0
Nuheirāt village and date gardens occupy a strip of land about ½ m. broad extending from Kurna fortifications to Fort Snipe, 1½ m. up-stream. Behind Nuheirāt plantations the ground is low-lying and is flooded every summer to a depth of 2 to 3 ft., and farther from the river gives way to permanent marsh.	
Fort Snipe.	1½
Fort Snipe Creek, 400 yds. above the fort.	1¾
Norfolk Hill, a large mound about 1 m. from Fort Snipe.	2½
	3
Barbukh Creek, a large creek 1,600 yds. above Norfolk Hill. This creek connects inland with the El-Howeir Creek, which runs into the Euphrates (see *Route* IV A (i), m. 7½).	3½
Shrapnel Hill, conical and conspicuous mound 500 yds. above Barbukh Creek and 1¼ m. from the river.	3¾
Gun Hill, long and low mound 500 yds. NE. of Shrapnel Hill.	
Alūweh (burnt, 1915), a small village. River bends WNW. for about 1 m.	4¾

perhaps, the **Beni Mālik,** under their own sheikhs, and by **Ma'adan** or marsh Arabs. Above 'Ozeir the large, well-armed, and important tribe of **Āl Bū Mohammed** occupy both banks, extending from the l. bank as far as Hawīzeh district and from the r. bank to the farthest limits of the marshes. The principal occupation of the Al Bū Mohammed is the breeding of buffaloes and cattle, of which they possess enormous herds. Their principal crops are rice, maize and *māsh.*

This section of the river passes through the *Kazas* of Kurna, Shatret el-'Amāreh (Qal'at Sālih or Jillah), and Amara, all of which belong to the *Vilayet* of Basra.

The T.L. runs on the r. bank to Qal'at Sālih, where it crosses the Tigris. From Qal'at Sālih to Amara it is on the l. bank.

For route along the river which crosses from the r. to the l. bank at Latlāteh (m. 60½ below) see *Route* 4 : for railway see p. 370.

Intermediate distance Miles	Left Bank
0	**Muzeira'ah,** a large village behind the date-groves opposite Kurna town. The village lands extend from below Espiègle Point for some 2 m. above it and from the Tigris to the Suweib. A boat-bridge now connects Kurna with the l. bank, and from the bridge-head a road has been constructed through the date plantations to Muzeira'ah village.
1½	
¼	
¾	
½	**One Tree** Hill, a very slight rise in the ground which forms an island in the flood season.
½	Humeyyān lands extending to Rōtah Creek.
¼	
1	

Right Bank	Total distance Miles
Jālah (burnt), small village. River bends N. for about 1,800 yds.	$5\frac{1}{2}$
Creek, unfordable in flood season.	$6\frac{1}{4}$
Bahrān or **Abu Aran** village: towers.	$6\frac{3}{4}$
Zachīyeh, name given to the lands N. of Bahrān. Higher ground begins immediately NW. of Bahrān, and extends about 2 m. NNW. to N., then 2,000 yds. NE., its average breadth being about 600 yds.	$9\frac{1}{2}$
Some distance above Rōtah the river bends sharply E. for about 1 m., then curves N. and sharply back again W., this remarkable loop being known as '**Pear Drop Bend**'.	10
Khoreibeh, the name given to the tongue of land contained by Pear Drop Bend, at the narrowest point only about 100 yds. across. Village at NW. corner.	$11\frac{1}{2}$
	$12\frac{1}{2}$
Muzeibileh, village near a mound at the end of the higher ground mentioned above, and on the river bank at the upper end of Pear Drop Bend.	$13\frac{1}{2}$
Creek 15 ft. deep, unfordable.	15
	$15\frac{1}{4}$
Tel Melar, large mound.	$15\frac{3}{4}$
Mouth of **Nahr Sakricheh,** a channel connecting with El-Howeir Creek, which enters the Euphrates 7 m. from Kurna. This channel is 8–10 ft. deep, 10–15 ft. wide, and is probably full of weeds. It is joined about 4 m. from its mouth by a cut which is said to connect it with the Tigris at 'Ozeir, and from its l. bank also subordinate canals apparently run to the river. For the El-Howeir Creek see *Route* IV A (i), m. $7\frac{1}{2}$.	$16\frac{1}{2}$
Sakricheh, village on N. side of entrance to creek: a date plantation on river bank 1 m. N.	
From this point up to Ghumeyyeh Gharbi, N. of Ezra's Tomb, the general direction of the river is N., with considerable windings.	
Sarīfeh village. **Nahr Shāfi** Canal.	$20\frac{1}{4}$

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	**Hallah** (burnt), a small village.
$\frac{3}{4}$	
$\frac{1}{2}$	**Kheyyābeh,** sand-hills covering about 2 sq. m. E. of the river opposite Bahrān.
	Above the sand-hills to Rōtah Creek the ground is liable to inundation in the flood season, floods being deepest in the eastward area.
$2\frac{3}{4}$	**Rōtah** Creek leaves the river just below a conspicuous group of palms, and connects with the Suweib Creek. It is 30 ft. wide and 12 ft. deep, but it quickly narrows to 10 ft. wide while remaining the same depth in the high-water season
$\frac{1}{2}$	
$1\frac{1}{2}$	**Madhūneh** tract.
1	**Itheilāt** tract.
1	
$1\frac{1}{2}$	
$\frac{1}{4}$	**Rufeyyeh** hamlet, about $\frac{1}{2}$ m. from river.
$\frac{1}{2}$	
$\frac{3}{4}$	
	Weisāj tract running up to Humeyyān lands.
$3\frac{3}{4}$	

Right Bank	Total distance Miles
	$20\frac{3}{4}$
Sharp bend SW.	$22\frac{3}{4}$
Sharp bend NNW.	$23\frac{1}{4}$
	$27\frac{1}{4}$
'Ozeir (Ezra's Tomb), a domed building. This is an important place of pilgrimage for Jews; a row of Jewish houses is attached to the precincts for the lodging of pilgrims. Some trees and gardens, but no village.	$29\frac{1}{4}$
From Ezra's Tomb to Qal'at Sālih the country on both sides is swamp, and the whole region is known as 'The Marshes'. Navigation is difficult, owing to shallows and sharp bends. Shoals are liable to change their size and positions. They are usually found at the convex side of river-bends, the channel at such points generally following the concave bank.	
About 2,000 yds. above the tomb river bends sharply SE. for about 2,000 yds. and then NNE. (sometimes described as Aks esh-Sheitān, or 'The Devil's Elbow').	$30\frac{1}{2}$
The promontory formed by the bend is low and grassy with shoal water round it in the summer of 1915.	
Muheiya'ah tract extends for about 3 m.	$31\frac{3}{4}$
	$34\frac{1}{4}$
The river bends sharply WSW. for nearly $1\frac{3}{4}$ m.; shoal at the bend in the summer of 1915.	37
Jamsheh tract extends as far as Mantāris, with village.	$38\frac{3}{4}$
River bends WNW. for $1\frac{1}{2}$ m., then NNE. for about 1,500 yds.	
A strong current sets here on r. bank; track for boats in 1915 approached r. bank at a point immediately below bend, which is marked by high scrub, and followed this bank round the bend.	

Intermediate distance Miles	Left Bank
½	Limit of effect of tide is about here. Turkish police post at southern end of Humeyyān lands which extend up river some 4 to 5 m. to the Shatt el-ʿAtīq tract.
2	
½	
4	**Shatt el-ʿAtīq** creek and tract.
2	**ʿOzeir** tract.
1¼	
1¼	
	The bank is here low and grassy.
2½	**Ghumeyyeh Sharqi** tract with canal of the same name (or Nahr Qassāreh) running NNE. towards the Khōr Hawīzeh. By this canal surplus water from the marshes returns to the river; there is little silt, and clear water at the mouth.
2¾	**Ghumeyyeh Gharbi** tract with creek of the same name (or Nahr Kharas) running NE. towards the Khōr Hawīzeh; there is a shoal which begins about 1,300 yds. below the mouth.
1¾	Shoal above and below angle of bend.

Right Bank	Total distance
	Miles
Mantāris tract begins.	41
River bends almost due W. for 2,000 yds.	
Sharp bend (Aks esh-Sheitān, or Devil's Elbow), a difficult point for navigation in 1915. (A map of April 1916 marks no promontory on l. bank.)	41½
River in 1915 curved first NNW. for 800 yds., then sharply E. for 900 yds., and then nearly due N. There was a strong current at the bends to E. and N.; the channel kept close to r. bank until bend to E., and then worked towards l. bank. **Mantāris** village, a Turkish police post, opposite the bend to E.	
Shoal in stream near r. bank in summer of 1915 began about 2,000 yds. above the bend to N. at the end of Devil's Elbow and extended for about 500 yds.; breadth 100 to 150 yds.; channel in 1915 followed l. bank.	43
Abu Rūbah at bend of river; village in date-groves; tomb near upper end of date-groves; sand-dunes.	44
River bends sharply E.	44¼
River bends from E. to NW. and then NNW.; strong current sets on l. bank.	45¾
	46¼
River bends from NNW. to NW.; shoal on r. bank at bend in 1915.	47¾
Abu Tamr tract. Abu Tamr Canal running SW.; village 1¼ m. from mouth on S. side.	49¼
River bends from NW. to NNE.	
	50¼
River bends WNW.	50½
Sand-dunes running NW. from bend.	
	50¾
From mouth of Abu Muzeiwīyeh Creek channel follows l. bank.	52¼
Nufeikh village and tract; low, cultivated ground.	
Shoal on r. bank began in 1915 1 m. above point opposite Abu Muzeiwīyeh Creek and extended for about 700 yds.	53¼

Intermediate distance Miles	Left Bank
$2\frac{1}{4}$	
$\frac{1}{2}$	Promontory formed by Devil's Elbow in 1915; but see opposite.
$1\frac{1}{2}$	Channel in 1915 followed l. bank.
1	**Hisān** tract, fort, and village in date-groves which begin opposite N. end of shoal in stream (1915).
$\frac{1}{4}$	Shoal at bend to E. (1915).
$1\frac{1}{2}$	Three creeks run into river at the bend; hamlets. **ʿAbdallah ibn ʿAli** tract running to Abu Muzeiwīyeh tract.
$\frac{1}{2}$	Shoal on l. bank began in 1915 immediately above third creek and extended for about 900 yds.
$1\frac{1}{2}$	Line of sand-dunes about 1,000 yds. long. Tomb of **Imām ʿAbdallah ibn ʿAli,** a place of pilgrimage, on a sand-dune about 800 yds. E. of northern end of the larger line of sand-dunes.
$1\frac{1}{2}$	Shoal in 1915 began at point of bend and extended for about $\frac{1}{2}$ m. to a point opposite two conspicuous trees.
1	Creek about 700 yds. above end of shoal.
$\frac{1}{4}$	Creek surrounded by date-groves leading to village about 800 yds. from mouth.
$\frac{1}{4}$	Creek 500 yds. up-stream from that last mentioned.
$1\frac{1}{2}$	**Abu Muzeiwīyeh** tract and creek. Channel follows l. bank.
1	

Right Bank	Total distance Miles
Bitarbitīyeh, creek and village ; creek runs S.	54
River bends N., then WNW. opposite date-groves on l. bank, then WSW. to Qal'at Sālih.	54½
Bidhah village lies among date-groves at bend of river to WSW.	56¼
Date-groves; **Hofeifeh** Canal opposite upper end of Qal'at Sālih.	57
From Qal'at Sālih to Amara the navigation channel usually follows the concave shore round the numerous bends. Shoals are still frequent, and liable to change in size and position. They are often to be found on the convex bank where the river bends.	
River bends from WNW. to N. ; creek at bend.	58 59½

Intermediate distance Miles	Left Bank
¾	**Abu'l Chayah** (?) tract; date-groves opposite Bitarbitīyeh Creek extending about 1,200 yds.
½	Shoal in 1915 at river-bend to N., extending from above date-groves for 1,000 yds.
1¾	
¾	**Qal'at Sālih** or **Shatret el-'Amāreh** or **Jillah.** Pop. 4,000. P.O. T. (Basra—Baghdad line). The town was before the war an occasional stopping-place for river steamers. It is divided into two portions by a canal, and consists of brick houses and huts. It has one Sabian and three Mohammedan schools. The Turkish Imperial Estates Department (*Dā'irat es-Sanīyeh*) had an office here. There are some dates, and the chief local products are rice, maize, millet, sesame, cucumbers, onions, and radishes. The bazaar is well stocked with cotton, cloth, sugar, coffee, and tea. The people, said to be largely of Central Arabian origin, are nearly all Mohammedans, Sunnis greatly predominating; but there are some 400 Shiahs, about 50 Jews, and a small Sabian community. The Sabians here are goldsmiths and makers of *mashhūf* canoes. The surrounding Arabs are the Al Bū Mohammed. Qal'at Sālih is the head-quarters of the *Kaza* of Shatret el-Amāreh in the *Sanjaq* of Amara; the *Kaza* has no administrative subdivisions. The chief Turkish official here was a Kaimmakam. The town is of recent origin; on the site was a fort of the Āl Bū Mohammed tribe. During the last twenty years the place has grown out of a small village through the pacification of the country and the development of the rice trade, of which it is a centre. The T.L. here passes from the r. to the l. bank.
1	
1½	**Michrīyeh** Canal, extending E. towards the Khōr-el-'Azīm. It has been recently reported (summer, 1916) that nearly half the flow of the Tigris has been passing down the Michrīyeh Canal, and it has been recommended that a weir should be built across this. Turkish police post on N. bank a short distance from mouth.

Right Bank	Total distance
	Miles
A bridge of boats crosses river, which above the bridge bends round to SW.: shoal at bend on r. bank in 1915.	60½
River bends from SW. to NNW.	62
Mūzāniyeh Creek running SW. from angle of bend; round tower on lower side of entrance.	
Mounds and a high bank about 2,000 yds. above Mūzāniyeh Creek.	62½
River bends from N. to NW.	64½
Head of canal at angle of bend, with large mound on N. side of the entrance.	
Direiwīshi tract.	
	66½
Rubeiheh tract.	67½
Ūkāshi tract with three creeks; shoal in 1915 on r. bank between second and third creek.	69
River bends ENE.	70
River bends N., and then E. and NE.	70½
Siyāyid tract.	
River winds in a general N. direction for 2 m.	72
Channel in 1915 followed concave shore.	
Mound.	72¾
Grassy mound. General direction of river for about 9 m. is NW., with many windings.	74
Barbūgeh village: opposite huts 300 yds. above grassy mound.	74½
Trees.	76¼
Huts.	76½
	78
Majarr (or **Mijarr**) **el-Kebīr,** large canal: conspicuous trees on lower side. It runs SW. to Hammār Lake (60 m.). Unnavigable for fly gunboats.	79
Village.	79¾
	80
Mound.	80¼
Jawwār tract, creek, and village.	81½
Grassy mound; in 1915 a shoal began on this bank a short way above the mound and extended past the ruin on l. bank.	82
From this point the general direction of the river is almost directly N.	
	82½

Intermediate distance Miles	Left Bank
1	**Latlāteh** tract.
1½	Shoal immediately above bend mentioned opposite extended in 1915 for about 600 yds.
½	**Dhuleimeh** tract. Shoal in 1915 opposite high bank extending for about 600 yds.
2	Creek.
	Basātimeh tract.
2	**Dhuwā** tract.
1	
1½	
1	Huts.
½	
1½	Fort with four towers.
	Siyāyid tract.
¾	
1¼	
½	Shoal began in 1915 at point opposite middle of Barbūgeh village and extended for about 900 yds.
1¾	Island.
¼	
1½	**Umm Jemāl** tract and canal.
1	
¾	
¼	Shoal in 1915 opposite huts on l. bank.
¼	
1¼	
½	Ruin.
½	Village.

Right Bank	Total distance
	Miles
Abu Hallān Canal is marked on some maps as leading to Majar es-Saghīr (about 4 m.).	83¼
Ubeiji village.	84¼
Abu Tabr Canal, the mouth of the **Majarr es-Saghīr,** which runs SW. across the marshes, and is believed to lead to the Hammār Lake (about 50 m. ?).	85¼
Abu Tabr, hamlet.	86¼
Ūfīyeh tract, much intersected with canals, of which the southernmost appears to connect with Abu Tabr Canal; village.	87¼
Village.	88¾
Rumeilī village.	90¾
Date-groves, intersected by numerous canals, up to Amara town (**Bahādil** tract).	91
	92½

ROUTE III B

AMARA TO KUT EL-AMARA (151½ M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf* (1908); Force 'D', Map Serials 42 (Amara—'Ali el-Gharbi, June 1915), 121 (Amara—'Ali el-Gharbi, November 1915), 70 (Kut district, November 1915), 104 (Kut district, January 1916); and other sources of information.

River and Navigation.—Between Amara and Kut el-Amara the river runs in a general direction NNW. to 'Ali el-Gharbi (*78½ m.) and thence about WNW. to the neighbourhood of Orah (*117½ m.) and SW. to Kut. The breadth of the stream is from 325 to 285 yds.; the velocity of the current (l.w.) 1 to 1¼ m. per hour. The river is

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	
1	Palm-trees and village.
1	
1	Ruin.
1	
$1\frac{1}{2}$	
2	Date-groves extending to Amara town.
$\frac{1}{4}$	
$1\frac{1}{2}$	**Amara.** ***Landing and Anchorage.***—A good embankment or wharf faced with brick runs the whole length of the town, more than $1\frac{1}{2}$ m., and steamers can tie up to this at the upper end of the town; lower down they must anchor some yards out in the stream as the bank is not steep to. The width of the river is about 195 yds., with depths from $13\frac{1}{2}$ ft. (high water) to $6\frac{1}{2}$ ft. (low water).

navigable for river steamers of from 3 to 6 ft. draught, according to the season. There are shifting banks in the river, especially, it seems, between 'Ali el-Gharbi and Sheikh Sa'ad, where the river widens considerably. Here arrangements have been made for keeping the best channel marked and buoyed.

Banks.—It was said in 1908 that between Amara and 'Ali esh-Sharqi (m. 43) there is always 8 ft. of water even in a low river. Between 'Ali esh-Sharqi and Kut there are three or four bad reaches. In this section the height of the banks rises steadily from 4 ft. to $16\frac{1}{2}$ ft. at Kut. Up to 'Ali el-Gharbi the water of ordinary floods freely overflows. Creeks and canals are numerous. Above the **Musharreh** and **Jehāleh** canals (see Gazetteer of Towns, **Amara**) the principal outlets on the r. bank are the **Biteireh, Sofeir, Dujeileh,** and **Sufeihāt,** all below 'Atāh, m. 52, and the **Orah** or

Tumman about *40 m. below Kut. The largest of these canals have a breadth of 40 to 55 yds.; they contain little water in l.w., but may become considerable rivers in h.w. (For the bar at the mouth of the Jehāleh see m. 0, below.) Unsuccessful attempts were made before the war to control the heads of the canals, and they occasionally drown out the crops which they have fertilized. On the l. bank between Fileifileh and 'Orah numerous streams bring saline water from the Persian hills. They are swollen by rain or melting snow and dry at other times.

Near the banks on both sides marshes alternate with cultivable areas in which wheat, barley, and rice are sown, the yield varying with the amount of rainfall and flood. The areas under cultivation are protected by low dykes which are occasionally breached. Beyond the immediate neighbourhood of Amara trees are scarce, but increasing in number. Sheep abound everywhere. Ruins and mounds marking sites of former settlements are common.

For the routes along the Tigris banks to 'Ali el-Gharbi see *Routes* 5 a, b. The T.L. follows the r. bank till a point *6 m. below Kut, where it crosses to l. bank.

Beyond the immediate neighbourhood of the bank on both sides are large patches of swamp, often salt, the size of which varies according to the season. The great marshy area N. and NE. of Kut, which comes down close to the river bank, is specially noticeable. Running S. from the Tigris at Kut to the Euphrates is the Shatt el-Hai (see *Routes* V and 19 a, b).

As 'Ali el-Gharbi is approached the course of the river runs closer to the **Pusht-i-Kūh** range. At 'Ali el-Gharbi the foot-hills are only ϒ14 m. distant NE. From that point onwards the river gradually recedes from the mountains, which in the neighbourhood of Kut are some 50 m. away. From the hills flow numerous brackish streams, which, however, dry up except after rain, when some of them reach the Tigris. Beyond the neighbourhood of the river the country is desert as far as the mountains, except for the oases of Jessān, Bedrah, and Zorbatiyeh, N. of Kut. For routes to N. and W. see *Routes* 8 c–e, 19 a.

Right Bank	Total distance Miles
From **Amara** the river bends sharply W. by N. The *Nahiye* of 'Ali el-Gharbi begins. T.L. follows r. bank, cutting off bend.	0

Inhabitants.—From Amara up to Sheikh Sa'ad the **Beni Lām** tribe are on the l. bank of the river; to the S. of Sheikh Sa'ad they are also found on the r. bank. From this point they are succeeded by the **Beni Rabī'ah** tribe, of which a section known as the **Maqāsīs** extends along both banks, being intermingled on the l. bank with the **Kawām** subsection of the same tribe. The Beni Lām are the largest and most powerful tribe in Irak next to the Muntefiq. Their number is estimated at 45,000, of which 15,000 are said to be fighting-men, who are well supplied with modern rifles and are good shots. The proportion of mounted and unmounted men is said to be about equal. Their main habitat is the plain between the Tigris and the Pusht-i-Kūh, but sections of the tribe are found to N. and W. in the districts of Bedrah and Mandali, and E. and SE. in Persian Arabistan around the Karkeh River and Hawīzeh. To the NE. they are in contact with the **Faili Lurs,** with whom they have frequent feuds. They are a pastoral people mainly engaged in agriculture, but retain nomad habits to the extent that they have no houses, but live in hair-tents and migrate to the hills in cold weather. Their camels and horses are said to be the best in Irak; they also own buffaloes, cattle, sheep, and donkeys. They are almost all Shiahs; some speak Persian as well as Arabic. They have great respect for their own sheikhs. They have a reputation for predatory habits, but in fact the majority of the tribe lead a peaceful life. The Beni Rabī'ah are a strong and prosperous tribe, but not so numerous as the Beni Lām. No estimate of their numbers can be given, but it is said that about a quarter of their fighting strength is well mounted. They are engaged in agriculture, and are rich in sheep, cattle, horses, and camels. All except the Kawām section are Shiahs. The Maqāsī section are respected as *Seyyids* and wear their hair long. This section and one called **Kināneh** are addicted to brigandage.

Territorial Divisions.—This part of the river passes through the *Kaza* of Amara of the *Vilayet* of Basra and the *Kaza* of Kut el-Amara of the *Vilayet* of Baghdad. The boundary is between 'Ali el-Gharbi and Sheikh-Sa'ad.

Intermediate distance Miles	Left Bank
0	**Amara.** Immediately above the town is the single mouth of the Jehāleh and Musharreh canals crossed by a boat-bridge. These canals now take off far less water

Right Bank	Total distance Miles
Daffās tract extends for about 2½ m. to bend of river (see m. 2½ below): village and date plantations.	
Tomb at upper end of tract.	
River bends generally NNW. for about *2½ m., with a sinuous course, and then in a general SW. direction.	2½
Falhīyeh tract.	
	4½
Daneināt tract.	5
Biteireh tract stretching to Biteireh Canal. Walled enclosure opposite ruin.	8
Biteireh Canal, 90 yds. wide, 35 ft. deep (June 1915); never dry: flows S. and SE., drawing off a considerable volume of water from the river.	11
Here T.L., running directly W. from Amara, comes close to river. **Saqlāwīyeh** tract above canal. River takes general WNW. direction.	
Sofeihah tract.	13
	13½
Sofeihah Canal, 29 yds. wide, 7 ft. deep (June 1915); dry later; current, 2 m.p.h.	14
Dahāmīyeh tract.	
'Ofeinīyeh tract. River bends to NE. for a little over a mile and then turns in a general NNW. direction to Kumeit.	15
Sofeir Canal, 20 yds. wide, 3 ft. deep (June 1915); dry later.	17½
Ruins scattered along r. bank in this neighbourhood.	18
	19½
Canal.	21
Kumeit tract.	24
	27
Well-built mud fort.	28¼
Kumeit village: about 50 mud buildings: about 20 shops. It is the property of the *Da'irat es-Sanīyeh*, and is a market for the surrounding tribes, exporting wheat, barley, and maize. The population is mixed. The place was founded only about 12 years ago. Turkish military post of 100 men was stationed here.	28½

Intermediate distance Miles	Left Bank
	than they did a few years ago, owing to the recent formation of a bar at their mouth.
	Abu Shiteib tract: cultivated land with date plantations.
2½	
2	**'Arrīs.** Date gardens.
½	**Mikāleh** tract: date plantations cease.
3	Ruin. Numerous small creeks. **Qabr el-'Ulwīyeh** tract.
3	**Ruhūm** tract: two small creeks immediately below Biteireh Canal; ruins; mud fort, well built.
2	**Jebīleh** tract.
½	Creek 25 ft. wide, 4 ft. deep (June 1915).
½	
1	
2½	**Fudeyyin** tract: ruins.
½	**Dār el-Farātiseh** tract.
1½	**Nahr Sa'd?**
1½	
3	Ruins. **Qal'at Sultān** tract.
3	Break reported in bund; 86 yds. wide, 3 ft. deep (June 1915).
1¼	**Qal'at Sultān** ruins.
¼	

Right Bank	Total distance Miles
Conspicuous brick-kilns to NW. T.L. bends NW. and runs to mouth of Dujeileh Creek.	29
Akeishiyeh tract. Ruins.	30
River bends in general direction from NNW. to W.: first reach SW.	32½
	33
Silāl tract.	33½
Fort in a tract called **Khirbeh.**	36½
Dujeileh Canal, running S. from river at bend: 72 yds. wide, 8 ft. deep (June 1915). Khirbeh village apparently lies on the W. side of the canal mouth of this creek.	38
Dujeileh tract: from this point marshes are within 1¼ m. of river, and are marked as stretching NW. to point about 2 m. W. of 'Atāh, m. 52.	
River bends in general direction from W. to NW. up to 'Ali esh-Sharqi.	
	39½
Ruined fort. **Mudalīl** tract.	40½
	42½
River bends in general direction from NW. to N. to Umm es-Samsam on l. bank.	43
'Ali esh-Shārqi Canal, running SW., 12½ yds. wide, 2½ ft. deep (June 1915). Immediately above, creek running W., 25 ft. wide. A sand-hill rises between canal and creek.	
Gurmat es-Seyyid 'Ali tract: canal 20 yds. wide, 4½ ft. deep (June 1915): in low water dries up. Above the junction with river, ruined fort and four low watch-towers. T.L. close to river at canal junction, and continues so as far as Sufeihāt Gharbi.	45
	46
Sufeihāt Sharqi tract.	46½
Sufeihāt Gharbi tract: ruins. T.L. turns sharply W. by N. away from river.	47½
River bends WSW.	49½
River bends sharply from WSW. to general direction NNE. as far as Mis'adeh (m. 56).	51
At this bend, mouth of creek marked on maps as **Gurmat es-Seyyid Ali** or **Nahr el-Gureimeh,** 30 ft. wide, fordable. Here T.L. comes close to river.	

Intermediate distance Miles	Left Bank
½	Bund reported broken for ½ m. (June 1915).
1	**Wailshiyeh** tract.
2½	
½	Fort with four towers.
½	**Abu Khiseiwah** tract; canal; mound *1 m. below, two mounds ¼ m. above, canal. Fort with two towers.
3	
1½	
1½	Creek 10 ft. wide.
1	
2	Creek 10 ft. wide.
½	**'Ali esh-Sharqi** tract and village: head-quarters of *Nahiye* of same name in Amara *Kaza*. Shrine of **Imām 'Ali esh-Sharqi** in grove of trees on river bank. Government 'reserved forest' in neighbourhood. Some grain exported
2	
1	**Mukarrameh** tract. Fort, two towers. Ruins.
½	
1	**Umm es-Samsam** tract: ruins.
2	
1½	

Right Bank	Total distance
	Miles
'Atāh tract and village; conspicuous trees.	52
Almeh Creek, branching NW., 15 ft. wide; fordable.	53½
Seyyid Creek, opposite Mukarramāt tract, runs NW., 60–66 yds. wide, 8–14 ft. deep (June 1915). Dries up in low water.	55
High telegraph post.	
Shāfi tract: several canals.	
River bends to NNW., two small mud forts at bend.	56
Sikhariyeh tract.	
Umm Sherīsh tract. River bears NNE.	57½
Ruwāshdūyeh tract. River bends sharply W., and then N.	58½
Mifsil Fileifileh tract. **Fahādiyeh** Canal, 95 yds. wide, 20 ft. deep. T.L. after crossing this runs directly N., away from river, to 'Ali el-Gharbi.	61
River bends from N. to E. by N. for 1 m.	
River makes a loop, N. 1 m., then E., then SSE. 1½ m. See opposite under m. 62, l. bank. A map of November 1915 marks Fileifileh village on the r. bank, at bend to SSE.	62
River bends E. and then NNE.: promontory formed by this bend is included in **Jisr Fileifileh** tract.	64½
	66½
River bends to NNW.: just above angle of bend ruins of brick bridge.	67
Handhal (Dār esh-Shuyūkh) tract: ruins.	70½
Kireināt tract.	73½
River bends opposite ruins on r. bank WNW. for about 1¼ m.: then N. trending to NE. for 2 m.	
River bends NW.: tomb.	76½
River bends W. to 'Ali el-Gharbi town.	77½
'Ali el-Gharbi, a town with plantations above and below: 300–400 houses. River steamers used to stop here. Wheat and barley are grown for export in surrounding country, the place being the market town of the Beni Lām tribe: *ghi*, wool, skins, and other products from Kurdistan can be obtained here. The inhabitants are of mixed origin,	78½

Intermediate distance Miles	Left Bank
1	**Mukarramāt** tract.
$1\frac{1}{2}$	
$1\frac{1}{2}$	
1	**Mis'adeh** tract. Swamp comes close to river opposite to Sikhariyeh and Umm Sherīsh tracts.
$1\frac{1}{2}$	
1	
$2\frac{1}{2}$	**Fileifileh** tract. Group of houses: old **Mis'adeh** village.
1	**Fileifileh** village(?): 50 Arab mud huts with small gardens and a few date-trees. (In a map of November 1915 Fileifileh is marked on the r. bank about $1\frac{1}{2}$ m. farther upstream.)
$2\frac{1}{2}$	**Surūd** tract, N. of Fileifileh in angle between river and Husein Creek.
2	**Husein** Creek runs 1 m. SE., then forks into two, one running SSE., the other E. separated 1 m. in 1 m. 36 ft. wide, 4 ft. deep, June 1915. Marshy, dries up.
	Sufeij tract: swamps marked about 3 m. E. of river extending NW. Conspicuous hill to E. of tract.
$\frac{1}{2}$	
$3\frac{1}{2}$	**Subeiheh** tract.
3	
3	
1	
1	

Right Bank	Total distance Miles
almost entirely Shiahs. While most of the dwellings are of mud, there are some brick houses belonging to merchants and officials. There are two khans. The place was the head-quarters of the *Nahiye* of the same name in the *Kaza* of Amara. Under the Turkish régime there were here a custom-house and a *zaptieh* post. The town takes its name from a mosque dedicated to 'Ali, a son of the Imām Mūsa.	
The river here is 300–350 yds. wide and above 'Ali el-Gharbi the banks slightly increase in height. The Pusht-i-Kūh range on the Persian frontier is here not more than 30 m. distant NE.	
From 'Ali el-Gharbi river takes a general direction WNW. with many curves. Marsh, 10 m. wide, 4½–6 ft. deep in spring, 1 m. W. of town.	
T.L. is on r. bank and runs WNW., cutting off river bends as far as Dār es-Seyyid 'Abbās tract.	
Mighail tract.	80½
Zakhāwīyeh tract: ruins on promontory at upper extremity formed by bend of river from NW. to SW.	83½
'Omaiyeh tract: ruins on promontory formed by bend of river NW. to SW. Three small water-cuts.	88
Dār es-Seyyid 'Abbās tract. Ruins.	92
Minthār tract. Map compiled in 1915 includes Minthār in Dār es-Seyyid 'Abbās tract.	
Ruins. T.L. turns WSW. parallel to river to end of tract and then W.	
	96
Abrupt bend of river for about ¾ m. S.	98¼
Musandaq tract. River bends W. Breach 150 yds. wide, 6 ft. deep, strong current (April 1916) forming Musandaq or Suniyeh Marsh ; northern part dry in l. w.	99
	101
Long canal running generally S. for 1 m. and then SW. apparently to join the Dujeileh Canal, ᵀ17 m.	103
T.L. turns WNW. to point about 1½ m. below Sheikh Sa'ad village.	
River bends in generally NW. direction.	
Ruins.	105

Intermediate distance Miles	Left Bank
2	**'Ali Jebel** tract.
3	**Qubeir** tract: ruins on promontory at bend of river from W. to NW.
4½	**Handhal** tract.
4	**Dawwāyeh** tract. Swamps marked within 1 to 1½ m. extending (May 1916) to end of Mandalīyeh Gharbi tract.
4	**Mandalīyeh Sharqi** tract.
2¼	
¾	
2	**Mandalīyeh Gharbi** tract.
2	
2	**Abu Sabkhāyeh** tract: canal. Extensive marshes are indicated (1914) 1–2 m. N. of river.

Right Bank	Total distance Miles
Abu Dā'ūd tract.	
Sharp bend of river from NNW. to SSW. for $1\frac{3}{4}$ m.	$109\frac{1}{4}$
Sheikh Sa'ad village: 50 to 100 houses of sun-dried bricks and about 25 shops: T.L. $1\frac{1}{2}$ m. S. Trade resembles that of 'Ali el-Gharbi. Adjoining Arab tribes are Āl Bū Darrāj on E. and the Beni Rabī'ah on W.	$109\frac{3}{4}$
River bends from SSW. to general NW. direction: T.L. turns NW. to the Orah ruins.	$110\frac{1}{2}$
Umm Jidā tract. Ruins.	$113\frac{1}{2}$
Orah Canal, running SW. to the Umm el-Brahm marsh, 5 m. distant, dry in summer.	$115\frac{1}{2}$
Swamp marked along upper end of tract 1 m. from river.	
Ruins in **Orah** tract. Canal.	$117\frac{1}{2}$
River bends SW. T.L. turns generally WSW.	120
Trees with ruins adjoining.	
Canal in **Umm el-'Urūq** tract.	122
Swamps marked $1\frac{1}{2}$ m. from river, extending from point S. of mouth of Umm el-'Urūq Canal to end of Ghataireh tract.	
River bends NW.	$123\frac{1}{2}$
River bends W. and then S. by W.	$124\frac{1}{2}$
On promontory enclosed by bend are mounds marking ruins of ancient settlement.	
Sanīyet tract. Abu Rummāneh mounds.	$128\frac{1}{2}$
Ghateireh tract. Two canals. **Beit Ayessa.**	$130\frac{1}{2}$
Hawā'i tract.	$132\frac{1}{2}$
Chaheleh mounds.	133
General direction SSW.	$133\frac{1}{2}$
Yeddu, square fort.	$135\frac{1}{2}$
Saffa mounds.	$136\frac{1}{4}$
River bends SSE. or SE.	$136\frac{1}{2}$
River bends SW.	$137\frac{1}{4}$
Ferry.	$138\frac{3}{4}$
Broad high-level canal with high banks (**Es-Sinn**) running SE. About $\frac{1}{2}$ m. behind it, running SSE., is **Nasafi** Canal. An old canal-bed (**Dujeileh**) also winds behind Es-Sinn in a general E. by S. direction. (See m. 38, and *Route* 19 b, iii.)	

Intermediate distance Miles	Left Bank
$4\frac{1}{4}$	
$\frac{1}{2}$	
$\frac{3}{4}$	
3	**Na'aseh** village.
2	**Widyān** tract.
2	**Wādi,** mouth of large wadi running from NE.
$2\frac{1}{2}$	**Umm el-Hanneh** tract. **Khōr Suweikīyeh** to NW.
2	
$1\frac{1}{2}$	
1	**Falāhiyeh** tract.
4	**Sanīyet** tract.
2	**Abu Rummāneh** tract.
2	**Nakhailat** village. **Suwādeh** Marsh (undrinkable water) lies about 2 m. NW.
$\frac{1}{2}$	
$\frac{1}{2}$	
2	**Nabā'ah** village (deserted, autumn 1915). Canal runs from Tigris N. to Suwādeh Marsh. If bund at its mouth were broken, the Tigris in flood would fill the marsh, and overflow would spread between Suwādeh and Nakhailat.
$\frac{3}{4}$	
$\frac{1}{4}$	
$\frac{3}{4}$	**Daqq el-Hajjāj** tract (? on r. bank).
$1\frac{1}{2}$	Tomb. About 1 m. to NNW. is a semicircular swamp area known as Horseshoe Marsh.

Right Bank	Total distance
	Miles
River bends S. by E.	139½
River bends SSW.	140¼
Maqāsīs. Mouth of **Dujeileh** Canal. River bends NNW.	141¼
River bends SW.	143
El-Abreh, nearly ½ m. from the bank.	144
	145½
Bridge of boats: tomb of Mohammed Abu'l Hasan at S. end.	147¼
River bends round to S. by W. Mounds on r. bank.	147¾
River bends SE.	148¾
In this neighbourhood there are shifting sandbanks in the river.	149½
River bends S. by W. Mounds running ESE.	150
River bends W. Mounds on bank.	150¾
Umm Hallanal tract.	151½

ROUTE III C

KUT EL-AMARA—BAGHDAD (204 M.)

Introduction

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; Survey by Lieut. A. Hamilton, R.I.M., and Lieut. Gardner, R.I.M., 1906–1907; Force 'D', Map Serial 101 (Ctesiphon, Nov. 1915).

River.—From **Kut el-Amara** to **Baghdad** is a distance 100 m. NW., about 204 m. by river and 112 m. by road. The general direction of the river is first NW. to a point a few miles below **Ctesiphon** and then NNW., but its windings are frequent, the bends sharp, and the reaches long, so that it forms large loops, sometimes narrow, sometimes broad. The width of the river is on an average between 330 and 440 yds.; the depth (l.w.) about 5 ft., considerably less than the depth in the former section: the velocity is about 1 to 1¼ m. (l.w.). The height of the banks above the level of low water averages about

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	
$\frac{3}{4}$	
1	
$1\frac{3}{4}$	**Nahrawān** Hill about $\frac{1}{2}$ m. W. running W. by S. Western extremity of Suwādeh Marsh to N.
1	**Rumeilāt.** ? Native fort. Ground now much intersected by canals.
$1\frac{1}{2}$	**Guwam.** ? Native fort.
$1\frac{3}{4}$	
$\frac{1}{2}$	Large nullah.
1	
$\frac{3}{4}$	
$\frac{1}{2}$	
$\frac{3}{4}$	Shoal rather nearer the l. bank. Lower end of Kut town.
$\frac{3}{4}$	**Kut el-Amara.**

18 ft. Up to the confluence of the Diyāleh and Tigris there are no adequate protective works against inundation. See Appendix B.

Navigation.—The river is navigable for river steamers, but the bends and shifting sandbanks make navigation troublesome, and there are several difficult reaches, especially between 'Azīziyeh and Diyāleh, which are noted in the itinerary: in these reaches at l.w. the depth of the river may decrease to 3 ft. Up-stream navigation otherwise than by steamer is slow with a head-wind: it takes roughly 10 hrs. to make 16–18 m. There are numerous minor creeks and canals from both banks: the most important is the **Kharr,** a few miles below Baghdad on the r. bank. In this section the Tigris receives one of its three most important tributaries, the **Diyāleh** River.

Banks.—Along the banks stretches of cultivated land are met with here and there, but the greater part is under shrubs and grasses. Up to a point some 20 m. below Ctesiphon, overflows of the Tigris, which are not retained by dykes, do considerable damage and are never drained off, and the evaporated waters leave their salt behind. Wild liquorice grows everywhere and is of commercial value. Between Ctesiphon and Baghdad in winter, wheat and green barley are

grown : irrigation for these crops is effected by *cherrads*. In summer millet, sesame, &c., are raised on the land irrigated by canals. Date plantations become a normal feature again a few miles below Baghdad. Sheep and goats are numerous everywhere.

Throughout this section the land route and T.L. from Kut el-Amara to Baghdad follow the general line of the l. bank, but by cutting the bends diminish the distance to nearly a half of the distance by river.

Beyond the immediate neighbourhood of the river the country on the l. bank is still a flat plain leading up towards the Persian hills, from which a number of streams flow. Most of their water drains into a great belt of swampy ground, flooded in spring, which extends from the neighbourhood of Mandali about ϒ50 m. S., and then turns SE., joining the Khōr Suweikīyeh about ϒ15 m. N. of Kut el-Amara. Nearer to the Tigris are two or three considerable patches of marsh, near Bogheileh and ʿAzīziyeh. This country is hardly cultivated at all, and evaporation tends to leave the land salt.

For the country between this section of the Tigris and the Euphrates see pp. 14, 15, 149, 150, *Routes* 20 a, b, 21 a, and App. B.

Canals.—The dry courses of ancient canals are noticeable features in the plains on both sides of the river. The most important of these canals are broad troughs, the bottom of which may be 50–60 yds. wide, and is usually above the level of the surrounding country, with banks which may be 30–40 ft. high. From the courses of the main canals numerous branches diverge.

Inhabitants.—The principal tribes in this section are the **Beni Rabīʿah,** the **Zobeid,** and the **Shammār Tōqah.** The **Beni Rabīʿah** (for particulars see Introduction to *Route* III B) are found on both banks of the river up to Bogheileh, and their territory runs inland to a depth of 20 to 25 m. on either side. They appear sporadically in other places, as for instance at Mahmūdiyeh.

Right Bank	Total distance Miles
Kut el-Amara.	0
Above Kut el-Amara the river runs NW.	
Saub el-Gharāf tract, extending from the W. side of the entrance of the Shatt el-Gharāf (Shatt el-Hai) Canal, to the beginning of Yūsufiyeh tract.	
Liquorice factory opposite upper end of Kut town.	½

The **Zobeid** occupy the whole length of the r. bank from Bogheileh to Baghdad, and their territory stretches as far W. as the Euphrates: a few sections are found also at places on the l. bank of the Tigris. Their most important sections, which are sometimes regarded as independent tribes, are the **Ba'aij**, the **Dāwar**, the **Battār**, the **Kasraj**, and the **Jebūr**, divided into the subsections Al Bū Khattāb and El-Wāwi. They are all Shiahs except two sections, the **'Agīl** and the **'Azzeh**, who are Sunnis and live in the Kazimain district. The Zobeid are cultivators, and grow wheat, barley, rice, and maize, and breed horses, camels, cattle, and sheep, but no buffaloes. They live chiefly in black tents. Their chief in 1908 was Rāshid Beg, living 10 to 12 m. W. of Suweireh. They are at feud with the Northern **Shammār** on the l. bank of the river, and are closely allied with the **Dilaim**, who live principally in the country between Baghdad and Hīt, but are sometimes found in the Kazimain district.

The **Shammār Tōqah** occupy the l. bank of the Tigris from Bogheileh to Baghdad, their territory extending for about 25 m. towards the Persian hills and including part of the Diyāleh Plain. They are a branch of the Northern Shammār: they were originally Sunnis, but are now entirely Shiahs. Like the Zobeid tribe, the Shammār count among their sections a **Dāwar** and a **Battār**. Two other sections, the **Qufeifān** below Khanāseh and the **Manāsīr** below Ctesiphon, are also sometimes reckoned as Zobeid, while the **Dafafir**, usually regarded as an independent tribe, are sometimes counted as Shammār. The **'Atbah** and **Salmāt** sections are found in the Kut *Kaza*. The Shammār grow wheat, barley, maize, and sesame, and breed cattle and camels. They live mainly in tents and sometimes wander in spring. In 1908 they were not strong in horses. The recognized chief of the whole tribe was then Seyyid Sufūkh.

Territorial Divisions.—The *Kazas* in this section are those of **Kut el-Amara**, **'Azīziyeh**, **Kazimain**, and **Baghdad**.

Intermediate distance. Miles	Left Bank
0	
½	**Kūt Saba** tract. T.L. runs NW. along river bank.

Right Bank	Total distance Miles
River bends from NW. to SSW.	3½
Yūsufiyeh tract: canals, ruins, and hamlet at lower end.	
River bends from SSW. to N.	7
Umm el-Binni tract.	9
River bends from N. to WNW.	11
Battār tract.	
River bends from WNW. to S.	15½
Huseini tract begins towards the upper end of this reach.	
River bends from S. to WNW. Brick-kiln on W. side of entrance to a canal a short distance above the bend.	19
River bends from WNW. to NNE.	22
(**Nufaishīyeh** tract ?)	
River bends from NNE. to SW.	25
Umm el-'Ajjāj tract, much intersected by canals. Arab encampments generally found here on r. bank.	
River bends from SW. to NNW.	30¾
River bends from NNW. to NE.	32¾
Abu Himār tract.	
River bends from NE. to NW. and W.	35
Mounds on river bank.	38
River bends from W. to SW.	39
Maftūl el-'Ajam tract.	
Bada'ah Canal at upper extremity of Maftūl el-'Ajam tract or lower end of Bogheileh. It flows SE. into swampy ground.	44
River bends from SW. to N.	
Bogheileh. Pop. about 2,000. Centre of a cultivated tract watered by the Bada'ah Canal and producing much wheat, barley, oats, rice, sesame, maize, millet, beans, and *māsh*: in 1908 there were no dates, but fruit gardens had been laid out. Sheep numerous: larger animals scarce.	44½

Intermediate distance Miles	Left Bank
3	T. L. here strikes WNW. for about 21 m., cutting off the river-bends. Canal NE. to Ataba Marsh; dry July (1916).
	Abu Dhakar tract.
$3\frac{1}{2}$	**Shumrān** tract.
2	Fort. Dry canal running NE. by E.
2	**Zoweir Hammād.** T.L. runs along bank through this tract.
	El-Qāyet esh-Sharqi tract begins towards the upper end of this reach.
$4\frac{1}{2}$	
$3\frac{1}{2}$	**El-Qāyet el-Gharbi** tract begins in the course of this reach.
3	About the middle of this reach is a ruin, about $\frac{1}{2}$ m. above which is a large house.
3	
	Umm el-ʿAjjāj tract.
$5\frac{3}{4}$	
2	**Zowiyeh** tract.
$2\frac{1}{4}$	**Imām Mahdi** tract intersected by water-cuts. T.L. on bank.
3	**Qalʿat Shādi** tract. The *Dāʿirat es-Sanīyeh* owns this tract, including the **Mamlaheh,** or salt-field.
1	Swamps are marked as approaching river at a point $1\frac{1}{2}$ m. above the angle of the bend mentioned opposite. They extend for about 6 m. inland. They continue behind the neighbouring tracts of Hamrāʿiyeh and Mamlah.
	At the river bend **Sheikh Jaʿād** (?): ruins, monkey village.
	Hamrāʿīyeh tract begins in the course of this reach.
5	**Mamlah** tract.
$\frac{1}{2}$	

Right Bank	Total distance Miles
Bazaar of about 50 shops: some supplies brought from the Euphrates Valley. More than one-third of the population are Kurds, and a majority are Shiahs. The town is on the boundary between the territory of the Beni Rabī'ah and that of the Zobeid. It belongs entirely to the *Dā'irat es-Sanīyeh* department, the local manager of which is said to be the executive authority: the Arabs in the neighbourhood are mainly employed as cultivators on the Imperial estate. There is a small police post. Trade and cultivation are on the increase.	
Route from Bogheileh to Hilla, along the line of the Shatt en-Nīl: see *Route* 20.	
Fruit gardens above Bogheileh.	
River trends NNW. **Nu'mān** tract.	46½
Ruins and mounds (? Tel Nu'mān).	47½
River bends SW. **Siharshar,** or **Sharīsh,** tract.	51½
River bends NNW.	54¼
At angle of bend is a canal (with branches) running S. Mound near river on the W. side of entrance to canal.	
River trends NNE. Navigation difficult in l.w. season.	55¾
The river is here making a long, narrow loop to N. The promontory on r. bank formed by the bend is apparently called **Muzaiyir.**	
River bends SW. and then S. and SW. Ruin mounds near bend.	60¾
River bends from W. to WNW.	64½
Umm es-Salāim tract: old marsh ground full of holes behind tract.	
River bends from WNW. to NE.	68¾
Fort at angle of bend.	
River bends from NE. to general direction WNW. for 7 m.: a long, shallow reach: troublesome navigation in l.w. **Shā'ūreh** tract.	73¼
Tineh tract.	77½
Tawīl tract. About 30 families of the Zobeid encamp in tents and cultivate wheat and barley.	79¾
River trends from WNW. to NW. Canal.	80½
Immediately above angle of bend **Tawīl** mounds about ½ m. to 1 m. from river, extending for about 1 m. **Baghal** mound nearly 1½ m. due W. of Tawīl mounds.	

Intermediate distance Miles	Left Bank
2	
1	
4	**Summar** tract.
$2\frac{3}{4}$	
$1\frac{1}{2}$	
5	**Nahr Kellāk** at lower end of **Dabūni** tract, said to be the private property of an Armenian family : water-cuts.
$3\frac{3}{4}$	
$4\frac{1}{4}$	*For a more recent itinerary, miles* $68\frac{3}{4}$–$113\frac{1}{2}$, *see* note at foot of following page.
$4\frac{1}{2}$	**Shidheif esh-Sharqi** tract. Ruins. T.L. near river bank.
$4\frac{1}{4}$	**Shidheif el-Gharbi** tract.
$2\frac{1}{4}$	**Umm et-Tubūl** tract.
$\frac{3}{4}$	

Right Bank	Total distance Miles
River bends SW. (creeks on r. bank). **Zaljah** tract: eight canals.	84
River bends in general direction NW. for *6 m.	86¼
Khōr Khubat en-Nār, swamp at about 2 m. SSW. of angle of bend, extends in SE. direction for about 6 m. A few mounds rise out of it, and it reaches on its SW. side to the old bed of the **Shatt ed-Darb,** 5 m. SW. of angle of river bend. Both sides of the Shatt ed-Darb are lined by an almost continuous series of mounds. **Khubat en-Nār,** a mound with remains of old temple lying NW. of marsh, is about 4 m. W. of angle of bend.	
Shineimīyeh tract.	91
After about 1 m. the river curves round to WNW. and then N.	
Brainij tract.	94
Mounds.	95
River bends E. It is here forming a large pear-drop loop, at the N. end of which is 'Azīziyeh. Isthmus of promontory formed by loop is about ½ m. broad.	96
River bends NE. for about 2¼ m., and then trends to NW., for 1½ m. to 'Azīziyeh.	98¼
	101½
	102

NOTE.—A map dated May 24, 1916 (T. C. 40), gives different points, distances, and names of tracts between m. 68¾ and 113½, as follows :—

Right Bank.—Above m. 68¾ **Umm Zuneim** tract. 73¾ m. **Khaseimeh** tract. 76¾ m. **Rājībīyeh** tract. 77¾ m. **Hamadiyeh** tract. 79¾ m. **Tawīl** mounds. 81 m. **Tawīl** tract and canal. 83 m. **Khasereh** tract. 84½ m. **Baghal** mounds about 2 m. from river. 91½ m. **Sharhān** tract. 95 m. **Brainij** tract. 100 m. **Khalīj** Island. 104 m. Mounds. 106 m. **'Abdallah** tract. Canals.

Left Bank.—68¾ m. **Libanni** tract. 73¾ m. **Shidheif esh-Sharqi** tract. 76¾ m. **Shidheif el-Gharbi** tract. 83 m. **Qabr Hadbeh.** 91½ m. Lower end of old river-bed, making loop to E. 93 m. Upper end of old bed. 95 m. **Humālnah** tract. 99½ m. **'Azīziyeh.** 102½ m. **Ghalidu** tract. 110½ m. **Sanad** tract. 113½ m. **El-Qutnīyat.**

This map also shows considerable differences in the course of the river.

Intermediate distance Miles	Left Bank
$3\frac{1}{2}$	
$2\frac{1}{4}$	**Sharhān** tract.
$4\frac{3}{4}$	**Humālnah** tract. Here are the traces (not visible from the river) of a former loop in the course of the stream. Some conspicuous mounds within it.
3	
1	
1	**Rāwiyet es-Zareh** tract.
$2\frac{1}{4}$	
$3\frac{1}{4}$	Ruins called **Medā'in** about 4 m. from bank.
$\frac{1}{2}$	**'Azīziyeh.** Pop. under 200 (1908): about 30 mud houses and a few shops (1916). P.O.: mails by steamer. T.: double wire to Baghdad, single to Kūt. For camping-ground, &c., see *Route* 5 c, m. 61.

River steamers call here. There is no cultivation in immediate neighbourhood owing to lack of irrigation, and the supplies of the town are drawn from the neighbouring Shammār Tōqah tribe: there is some export of liquorice.

'Azīziyeh is no longer the head-quarters of the 'Azīziyeh *Kaza*, which have been transferred to **Salmān Pāk**; but it is the centre of a *Nahiye* administered by a Mudir.

'Azīziyeh was formerly larger and more prosperous, the population in 1884 being estimated at 1,000. It was then under the management of the *Dā'irat es-Sanīyeh*. The decay of the place in the last 30 years is partly to be explained by inroads of the river upon the bank. In the neighbourhood there is a Government reserve on the Tigris bank.

The country behind 'Azīziyeh is flooded in the spring.

Right Bank	Total distance Miles
River bends opposite 'Azīziyeh from NW. to SW.	
Khalīj Island ½ m. in length.	102½
Abu Ma'ālif tract on the W. side of the promontory which is formed by 'pear-drop' loop.	
3 m. above upper end of Khalīj Island the isthmus of promontory is ½ m. wide.	106
River bends from SW. to NW. **'Abdallah** tract.	107¼
River bends NNE. for 3 m., and then turns SSW. for 1½ m., forming a narrow loop. **Rumeileh** tract: brushwood.	110½
(River bends SSW.)	113½
Zoweir el-Joz tract. River bends NW. and gradually trends to W.	115½
Minthar tract.	117
River bends N. to form long, narrow loop.	119
Baghdādiyeh tract.	119¾
Baghdādiyeh (Yenijeh Baghdad) village: ruined fort. T. branch line running NNE. to join main line.	120½
River bends NW.	122½
River bends round to S.	123½
Suweireh tract.	
River bends W. and then immediately takes a northerly direction.	128½
At bend of river, ruins of **Old Suweireh.**	
Immediately above is the **Nahr Reshādiyeh** marked as running in SE. direction for about 15 m.	
Mounds to S. of the river bank.	
Nahr Suweireh.	129½
Suweireh village (also known as **Hamīdiyeh Jezīreh, Jumeiseh,** or **Juwaimiseh**). Pop. about 750: Turkish river steamers stop here to deliver and take up mails. T. Soil of tract is productive, but means of irrigation are inadequate: wheat and barley are the usual crops, but when the river overflows maize, sesame, and peas are also grown. Other agricultural supplies are generally brought from Hilla *Kaza*: liquorice grows in abundance. Bazaar contains about 50 shops, and there were in 1908 three substantial merchants. A proportion of inhabitants are Faili Kurds: there are a few Jews and Oriental Christians. Suweireh is the head-quarters of	

Intermediate distance Miles	Left Bank
$\frac{1}{2}$	**Rādidāt** tract: several creeks.
$3\frac{1}{2}$	
$1\frac{1}{4}$	**Sanad** tract.
$3\frac{1}{4}$	**Huweileh** tract.
3	**Qutnīyat esh-Sharqi** tract. Small thick wood at bend.
2	**Qutnīyat el-Gharbi** tract.
$1\frac{1}{2}$	
2	
$\frac{3}{4}$	Sandbank $\frac{1}{2}$ m. in length.
$\frac{3}{4}$	**Hafr** tract.
2	Old canal: ruins.
1	**Zeur** or **Robaideh** at bend. Compare *Route* 5 c, m. 76 (about 2 m. beyond Zeur is Mohammed Pasha Daghistāni's house): **Ruwaibiyeh** tract.
5	
1	

Right Bank	Total distance Miles
the Jezīreh *Kaza*, and the seat of a Kaimmakam, who has a few civil police under him. The most important person in the neighbourhood was in 1908 Mohammed Pasha Daghistāni, who then owned much land on the opposite bank and had considerable influence with the local Arabs, and was sometimes employed to mediate between them and the Government. The *Dā'irat es-Sanīyeh* was said in 1908 to be intending to acquire land in the neighbourhood: there is a Government reserve forest in the vicinity on the l. bank.	
	132
Juwaimiseh tract.	133½
River bends W.	135
River bends S.	136¼
Jubail tract.	
River bends WNW.	139¼
Mounds along river bank for 3½ m.	
Rahmānīyeh tract.	141½
River bends NNW.	141¾
River bends NNE.	143¼
River trends N.	145¼
River trends NNW. Navigation difficult in low water. **Seibāneh** tract, much intersected by canals.	148¼
	149¾
River bends SW.: in this reach navigation is difficult in l.w.	150¼
Village of **Seibāneh** above angle of bend.	
Ghannāmīyeh tract: canals, mound, and village 1½ m. beyond.	152¾
River bends W., NNE., and NNW.: a shallow part of the river, known as the **Khanāseh** Reach, difficult to navigate in l.w.	154¼
Diwāniyeh tract begins at the point where the river bends from W. to NNE.: hamlets on river bank.	157¼
Row of mounds extending NNW. for 2¼ m.	
	159¼
Huweish tract: the river bends sharply SW.	163¼

Intermediate distance Miles	Left Bank
$2\frac{1}{2}$	**Mihāch** tract.
$1\frac{1}{2}$	
$1\frac{1}{2}$	**Dāwar esh-Sharqi** tract: a Government forest in this tract.
$1\frac{1}{4}$	Ruins and village.
3	**Dāwar el-Gharbi** tract.
$2\frac{1}{4}$	**'Owein** tract: village.
$\frac{1}{4}$	
$1\frac{1}{2}$	
2	
3	**Lajj** tract.
$1\frac{1}{2}$	**Nahr esh-Shahail** Canal running NE.
$\frac{1}{2}$	
	Village of **Lajj**, above angle of bend.
$2\frac{1}{2}$	**Khanāseh** tract. There are sometimes a few Arab tents on bank. There is a grain store here, and some horses are kept: the land has recently been taken up for cultivation. There is good black partridge shooting in the neighbourhood.
$1\frac{1}{2}$	
3	
2	**Safi** tract.
4	**Dariyeh** village? This may perhaps be the same place as

Right Bank	Total distance Miles
Island between ½ and ¾ m. long.	163¾
The river here curves round to W. and then N. in a narrow new channel cut recently by the Turks. This cuts off a loop about 8 m. long, reported still navigable, and passing **Hurīyeh** tract (see *Route* 21 a, Appendix).	166¼
Saiyāfiyeh Fort, due W. of the new cut, in a tract of the same name. A T.L. runs from the fort connecting with the Baghdad wire some 7–8 m farther on. See below.	
	168¾
Barūdeh tract.	
The area which now begins is known on both banks of the river as **Medā'in** (The Cities).	169¾
Above this point, close to the bank, are the remains of the ancient city of **Seleucia.** Little is now left beyond numerous low heaps of ruins.	
History.—The two Greek cities of Seleucia and Ctesiphon go back to the time of the Macedonian successors of Alexander. Seleucia was founded by Alexander's marshal Seleucus, who took the title of king in 306 B.C. and ruled over Syria, Mesopotamia, Armenia, and Eastern Asia Minor. Ctesiphon was founded by his successors and was for some time subordinate to Seleucia. The Greek Seleucidae were succeeded towards the end of the second century B.C. by the Parthian Arsacidae, who established the Parthian Empire in Mesopotamia. Ctesiphon, which had now become the more important town, was the winter residence of the kings: Seleucia, however, remained for long a centre of Greek culture.	
In the second century A.D. the towns were captured by the Roman Emperor Trajan, who punished the inhabitants of Seleucia for a rising after the town had surrendered by reducing it to ashes.	
In the middle of the third century A.D. the Arsacidae were replaced by another Persian dynasty, the Sassanids, who enlarged Ctesiphon and adorned it with great buildings.	
Around the ruins of Seleucia corn is grown, but ½ m. W.	

Intermediate distance Miles	Left Bank
	Bustān, in the tract of that name. The T.L. here leaves the river, running NNW. direct to Baghdad.
$\frac{1}{2}$	Conspicuous high bank about $\frac{3}{4}$ m. inland.
$2\frac{1}{2}$	
	Jirf el-Batteh tract.
$2\frac{1}{2}$	**Dhahab** pier. **Tel Dhahab** about $\frac{1}{2}$ m. from the bank. About 1,500 yds. farther up-stream is a second pier of the same name. (These piers are marked on a Turkish map of Nov. 1915.)
1	Tomb on the bank.
	About $\frac{3}{4}$ m. NE. from this point on the edge of a reed-grown marsh are the remains of the great Sassanid palace of **Ctesiphon** (now called **Taq Kisra,** Arch of Chosroes). There are still standing the remains of the Great Hall, lying E. and W., and of the S. wing of the Eastern Façade. The hall is 148 ft. long, 76 ft. broad, and 85 ft. high: the N. and S. walls are practically complete. The hall had a great vaulted roof (built without the use of centring beams), of which the middle part remains. A large portion of the western wall is also standing: the walls are said to be 23 ft. thick. The total length of the façade was 270 ft., but only the S. wing is now standing: it is 86 ft. high and 23 ft. thick. The E. end apparently lay open to the rising sun or was sheltered by a great curtain, of which the Arabs who sacked the city seem to have discovered part. The front of the façade (E.) has one open arched door, flanked by blind arches: above this four rows of shallow niches like blind windows with engaged columns. The material is for the most part brick.
	For notes on History see opposite.

Right Bank	Total distance Miles
of it the means of irrigation cease and crops are dependent on winter rains, which sometimes fail.	
Seleucia and Ctesiphon were taken by the Mohammedan army which destroyed the Sassanid dynasty in A.D. 637. The Arabs, who did not adopt this site as the capital of Irak, knew the two cities together under the name Medā'in. In the tenth century it was still a flourishing town.	
The river from Seleucia upwards to Quseibeh is known as **Quseibeh** Reach : navigation is difficult in the l.w. season.	
	170½
Gunpowder factory: disused (1911): saltpetre found in the vicinity.	171½
Bridge and steamer jetties.	172
River bends NNE. **Azumbārāniyeh** tract begins.	172½
	173¼
River bends WNW.	174½
Island about ¼ m. long in mid-stream.	175¼
Azumbārāniyeh Canal.	176¾
Trees and house.	
River bends N.	179¼
Qal'at Salmān.	
Tomb of Ja'far.	180
Ja'far tract. The country behind this tract is liable to floods in spring, which render impassable *Route* 21 a to Museyib, which passes about 6½ m. W.	
River curves NE. to Diyāleh.	182
Abu Jīhash tract.	183
River bends W. by N. **Abu 'Asōfir** tract.	184

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	Mudir's house. This is connected by a T.L. with the Baghdad line about $2\frac{1}{2}$ m. farther N.
	Between $\frac{3}{4}$ and 1 m. E. (another authority gives SE.) of this house is the small modern settlement of **Salmān Pāk,** the head-quarters of the 'Azīziyeh *Kaza.* It does not seem to be a flourishing place. No supplies or fuel. There is the tomb of Salmān, the Companion of the Prophet, said to have been his barber.
1	
$\frac{1}{2}$	? **Sharai Salmān** tract.
$\frac{1}{2}$	**Bāur** tract.
$\frac{3}{4}$	Cemetery due E. about $\frac{3}{4}$ m. from the bank. T.L. from **Saiyāfiyeh** Fort crosses river between $\frac{1}{2}$ and $\frac{3}{4}$ m. higher up.
$1\frac{1}{4}$	
$\frac{3}{4}$	**Quseibeh** village, connected by T.L. with the Amara—Baghdad line.
	Ja'āreh tract.
$1\frac{1}{2}$	**Qal'at Ahmed Chaladi.**
	Pumping station.
$2\frac{1}{2}$	Dead tree. ? **Sheikh Mohammed** village.
$\frac{3}{4}$	**Tuweitheh** tract, much intersected by canals.
2	Ruins along the river bank.
1	**Daraidar** tract.
1	**Diyāleh,** small village inhabited by mixed tribes.
	Diyāleh River, which, followed up-stream, leads N. to a point ϒ7 m. above **Bāqūbeh** (ϒ36 m.) and then in a general

Right Bank	Total distance Miles
Hillawiyyīn tract: several creeks with deep cuttings traversed by bridges passable for pack animals.	185
River bends N.	186
Houses and plantations stretching towards **Qarāreh** on both banks.	187
Dibaiyih tract.	188
River bends W. and then SW. **Abu Rumeil** tract.	190½
	191½
	192½
Jardreh tract.	193½
River bends NW.	195
Bad'ah tract.	

Intermediate distance Miles	Left Bank
	direction NNE. to the **Hamrīn** Hills: its source is among the mountains of the Persian province of **Ardelan**. Between the Tigris and the Hamrīn Hills it runs through a soft clay plain in a trough about 55 to 65 yds. wide and about 19 ft. deep. When the Tigris is in flood, the Diyāleh overflows its banks near Baghdad. The river is navigable from the beginning of December to the end of April as far as **Bāqūbeh**: for the rest of the year it is a shallow stream of no consequence. Besides the bridge of boats at the mouth, there are boat ferries at **Abu Arūj** and at **Bahrīz**, and a bridge at **Bāqūbeh** (see vol. iii, *Routes* 28 a–30). The banks near the mouth, except just at the bridge, where there is a ramp, are precipitous and rise 30 ft. above the stream in the low-water season: they are covered with low tamarisk brushwood.
	Boat-bridge (13 to 16 pontoons) over the Diyāleh carrying 'Azīziyeh—Baghdad route, which from this point runs direct NW. to Baghdad. (See also vol. iii, *Route* 31, m. 9.)
1	**Rustamiyeh** tract.
1	**Dadawiyeh** tract.
1	
1	**Si'adeh** tract.
2½	**Qarāreh,** †3½ m. from Baghdad. Boat-bridge: 36 to 45 pontoons (the seven boats nearer l. bank are swung downstream to let vessels pass: in a high river the bridge may be removed). Road branching from 'Azīziyeh—Baghdad route crosses boat-bridge and runs SW. 7 m. to join Museyib—Baghdad route.
	Date plantations in this neighbourhood mostly owned by inhabitants of Baghdad, who have summer residences here.
	Four distilleries which supply nearly the whole of Irak with native liquor: no shops. A few police.
1	**Hineidi** tract.
1	Factory.
	Jirf er-Rōt tract.
1	
1½	**Gharāb en-Nejef** tract.

Right Bank	Total distance Miles
Channel in 1907 apparently followed l. bank past **Gharābeh** I.: but the broader waterway is that by the r. bank, and recent maps seem to indicate this as the main channel. Distances here measured by r. bank.	
Kharr tract begins opposite the upper end of the SW. side of Gharābeh Island.	196
River bends N. and then bears round to NE.	197
Route and T.L. Museyib—Baghdad touches bank opposite W. side of Gharābeh Island. Behind them network of old canal beds.	
The **Kharr** Canal runs into the r. bank channel opposite the N. side of Gharābeh Island and due W. of the beginning of Karrādeh tract opposite. Its general direction is NNW. for 3½ m., and it joins the **Mas'ūdiyeh** Canal which runs to Lake **'Aqarquf**. The Kharr Canal drains the desert W. of **Baghdad**: in spring it is filled by reflux water of the Tigris to a depth of 10 ft. (max.): in summer it is dried up. 1 m. from its mouth it is crossed by an iron bridge on the route Museyib—Baghdad (*Route* 21 a).	198½
Immediately above the canal date plantations and fruit gardens begin.	
	199
Mouth of **Mas'ūdiyeh** Canal.	201½
River bends N. and NNW.	202
	203
	204

Intermediate distance Miles	Left Bank
1	**Khalīj** tract.
	Gharābeh (or **Khalīj**) I., a triangular island, thickly wooded, the base of which ($1\frac{1}{2}$ m. long) is separated from l. bank by a narrow channel, which in 1907 was apparently that used by navigators. The SW. side of the island from lower end of base to apex is about $1\frac{1}{2}$ m. in length, its N. side about $1\frac{1}{2}$ m.
1	
$1\frac{1}{2}$	**Karrādeh** tract.
	Walled date plantations and fruit gardens begin.
$\frac{1}{2}$	Upper end of channel between l. bank and Gharābeh Island (see above, m. 196).
$2\frac{1}{2}$	**Gharābeh** village.
$\frac{1}{2}$	
1	**Albāh esh-Sharqi** tract.
1	Suburbs of **Baghdad**. There are here a good many large houses, lately constructed, belonging mostly to Jewish families.
	Former British Residency, **Baghdad**.

THE EUPHRATES

ROUTE IV A

KURNA—NĀSIRĪYEH

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*; *Routes in Arabia*, 1915, no. 190 and other sources of information.

The Old and New Channels.—The country through which the Euphrates runs from Nāsirīyeh to its junction with the Tigris is the southern part of the great marshes of Lower Irak, which occupy roughly the triangle between Basra, Nāsirīyeh, and Amara. The main channel in 1915 was that which runs (as followed up-stream) from Kurna to Chubeish, thence across the N. part of the **Hammār** Lake, and so by the **Haqiqeh** Cut to a point about 2 m. above **Sūq esh-Shuyūkh.** This is the so-called Old Channel, which in 1915 was reported practicable for river steamers of 5-ft. draught in the months January–July. The water in the Hammār and the bars at Chubeish and in the Haqiqeh Channel has fallen to 1–2 ft. These shallows are being dredged: see Appendix C (pp. 470–472). In recent years the waters of the Euphrates have been forming a new channel which lies to the S. of the old, and runs (as followed up-stream) from **Gurmat 'Ali** on the Shatt el-'Arab to the neighbourhood of **Harir,** where it enters a great area of open water and reed-grown marsh. Across this waste of waters, which is of great extent during the spring floods, the channel is very indefinite. In 1915 it was apparently necessary for steamers following the New Channel to enter the Hammār Lake and ascend the Haqiqeh Cut in order to reach Sūq esh-Shuyūkh, as the mouth of the **Mezlaq** Channel to the S. of the Haqiqeh was closed by a bar to vessels larger than ordinary *maheilehs* or large *bellums*. (See section ii of this route.)

In the flood season there is a perceptible current from N. to S. *across* the Euphrates water in the Hammār Lake. Probably the Euphrates above Haqiqeh finds its way into the Hammār Lake by the Haqiqeh and other channels, and the Hammār water then to a large extent drains into the Shatt el-'Arab at Gurmat 'Ali.

The Haqiqeh Channel has now been closed to navigation (1917).

and the Mezlaq channel opened. See further Appendix C, pp. 469–470.

It is impossible to give the course of the channels with certainty where they pass through lakes and swamps.

From Sūq esh-Shuyūkh, though the swamps are close at hand on the N. and the desert on the S., the river runs in a firm bed through a belt of date plantations for 20 m. in a general NNW. direction to Nāsirīyeh.

The Banks.—When the channel of the river is running through lake or swamp it is manifest that it has no immediate banks, though in the low-water season patches of submerged ground appear as marshy islands and promontories: some of these patches, indeed, notably those between the Hammār and the S. water-belt, are permanently dry, and contain hamlets, rice-fields, and date plantations. Yet even in these settlements whole families have been found during the high-water season living in canoes floating inside the huts, and in most years the floor of the hut has to be raised during the floods by bundles of reeds to keep the occupants out of the water. Wherever the bed of the river is firmer, the banks on either side are cultivated, date-groves are planted, and villages and hamlets are frequent. It will thus be seen that the New Channel has no banks except for a short stretch at its lower end, while the Old Channel is cultivated and populated from Kurna to Chubeish, and the section of the main river from Sūq esh-Shuyūkh to Nāsirīyeh has a belt of almost continuous date-groves on either bank, with villages and settlements following one another in quick succession. Beyond the immediate neighbourhood of the river the country on the N. is throughout the whole route a swampy waste traversed by the great canals of the **Majarr es-Saghīr** and **Majarr el-Kebīr** running SW. into the Hammār Lake from the Tigris, and the **Nahr Beidhā** or **Bed'ah** and the **Nahr Hamzeh** running SE. from the Shatt el-Hai. To the S. the swamp stretches away to the line Gurmat 'Ali—Khamsīyeh, and at its SE. corner the floods spread in spring to the plain between Basra and Zobeir. In the stretch from Sūq esh-Shuyūkh to Nāsirīyeh the desert lies behind the date plantations with occasional swampy areas. The country between the Old and New Channels—an obtuse-angled triangle with its base formed by the Shatt el-'Arab—is entirely swampy, and is traversed by the Nahr 'Antar, the Nahr Sālih, and numerous other creeks running from the Old to the New Channel.

For the route from **Basra** to **Nāsirīyeh** and **Nejef,** which runs across the desert to the S. of the swamp-area, see *Route* 13 a.

The telegraph (Kurna—Hilla line) runs along the N. edge of the Old Channel, first WSW. direct from Kurna to Chubeish, then making

a détour to N. round the border of the Hammār Lake, and rejoining the river at the upper end of the Haqiqeh Channel. Thence it follows the l. bank to Nāsirīyeh.

Inhabitants.—In the marsh country and in the dry desert to the S. the Muntefiq tribe is still by far the most important; but in recent years its influence seems to have suffered a considerable decline, partly, perhaps, owing to Turkish policy. The Muntefiq properly so called are still the core of a loose confederacy of clans (held together by ties of blood or political association) to which the name Muntefiq in a wider and vaguer sense is given. But at the present time not only have the Muntefiq been separated from their former section the Beni Malīk (on the lower Tigris), and almost entirely displaced from those parts of the Shatt el-'Arab below Basra which they used to occupy, but in the area now under consideration their once subordinate allies, and possibly kinsmen, the **Beni Mansūr** and **Ahl el-Jazāir,** who live intermingled along the Euphrates above Kurna as far as the Hammār Lake, are now entirely independent. These Beni Mansūr and Ahl el-Jazāir are Shiahs by religion. That they are now scattered over the *Kaza* of Kurna and over a large part of the *Kaza* of Sūq esh-Shuyūkh is the result of a Turkish punitive expedition, which was provoked about fifteen years ago by the murder of some Ottoman officials. The main portion of the Beni Mansūr live on the S. side of the Old Channel of the Euphrates from about 1 m. above Kurna to the Nahr 'Antar (m. 11¾). Other tribal groups in this neighbourhood are the **Beni 'Asad,** who live interspersed among the Beni Mansūr and Ahl el-Jazāir (as at Chubeish) and inhabit some of the marsh villages S. of the Hammār Lake, and the **Duaiyish,** who are to be found along its NE. shores.

The authority of the Arab sheikhs from Kurna to Chubeish is distributed as follows:—

The Sheikh of **Kurna** claims control over Kurna, Muzeira'ah, opposite Kurna on the l. bank of the Tigris, over the villages above Kurna on the Tigris (r. bank) for about 3 m., over all the settlements on the N. bank of the Euphrates from Kurna to El-Howeir Creek, and on the S. bank from the boundary of Sherish opposite Norfolk Creek to a creek on the border of Medineh.

The Sheikh of **Sherish** used to be subject to Kurna, but is now independent, and controls the Sherish tract between the Beni Mansūr lands on the W. and Deir on the r. bank of the Shatt el-'Arab to the S.

Under **Medineh** are the country on the S. bank from Nahr 'Antar to Nahr Sālih, and the N. bank of the Euphrates from El Howeir Creek towards Chubeish, including El-Khas and Turābeh.

The Sheikh of **Chubeish** controls the country from the W. border of Medineh to the Hammār Lake.

To W. and NW. of the Hammār Lake live the **Beni Keigān**, who command the lower end of the Haqiqeh Channel.

With regard to the political organization of the Arabs on Hammār Lake and up to Sūq esh-Shuyūkh, it may be said that every Arab who owns or can build a tower pretends to the dignity of independence. The balance of power is constantly changing as strong characters arise and disappear.

The **Muntefiq** proper have their head-quarters in the country round Sūq esh-Shuyūkh and Nāsirīyeh, and extend for some distance W. and N. of the latter place. The Bedouin of the desert in this region are mostly Muntefiq, and even the settled members of the tribe frequent the desert pastures in spring with their numerous camels and other live stock. The powerful **Dhafīr** tribe, whose head-quarters are in the desert SW. of the Muntefiq, occasionally appear in the neighbourhood of Nāsirīyeh town.

The inhabitants of the swamps outside the patches of cultivation are **Ma'adan.** They and their families and live stock lead an amphibious existence, their water-buffaloes feeding and swimming apparently for days in the deeper marshes, and the other cattle feeding in the shallower parts on grasses which grow under water. The Ma'adan huts are frequently built on floating bundles of reeds, but patches of dry ground exist, and on them the cattle are milked, and clusters of huts are built. The huts are called *sarifeh*, and are constructed of reeds and reed mats. They can be erected in a day, and can easily be removed to another site, the material being trasnported in canoes. The Ma'adan take small interest in anything outside their own affairs, and give little trouble. They are looked down upon by the agricultural tribes. They have no sheikhs of their own, and attach themselves to the sheikh of the nearest Arab tribe, and pay him a tribute in kind for protection.

Right Bank	Total distance Miles
(i) THE OLD CHANNEL FROM THE JUNCTION OF THE TIGRIS AND THE EUPHRATES AT KURNA TO THE JUNCTION WITH THE MEZLAQ CHANNEL ABOVE SŪQ ESH-SHUYŪKH.	
The Old Channel, as a whole, is practicable for river steamers up to 5-ft. draught in the high-water season, but in low water the soundings in the Hammār Lake sometimes give only 18 in.	
From Kurna to Chubeish Bar (m. 27) the river is easily navigable by steamers loaded down to 10 ft. at all seasons of the year. The width varies from 180 yds. to 60 yds.	
Date plantations continuous to mouth of Derbend Creek.	
Junction of Euphrates and Tigris.	0
Sherish village opposite Kurna. Bridge of boats across river.	$\frac{1}{2}$
Country of the Beni Mansūr begins. General direction of course between WSW. and SW. River bank artificially heightened by dykes locally known as *sudd*. The palm-belt which stretches along the bank begins near the water-side and stretches back for about 400 yds. in the direction of Derbend Creek (see below, m. 5) and the marsh-country to S. In the neighbourhood of the bank the trees do not grow close together, and the plantations are usually sown with grain for the spring harvest or with rice for autumn harvesting. Farther back from the river-front the trees are dense, and there is a narrow strip of slightly raised ground, on which huts and houses are built. From the river it is only possible to obtain occasional glimpses of Beni Mansūr dwellings, which are scattered through the plantations in clusters or in lines or singly. The various tracts, each of which is under its own Mukhtar or headman, have boundaries not distinguishable by a stranger. **Hindaur** and **Mezraf** are given as the names of villages lying between Sherish and Derbend.	$\frac{3}{4}$
	$1\frac{3}{4}$

Intermediate distance Miles	Left Bank
	T.L. runs along this bank S. of Kurna town. Belt of palms borders river from Kurna to the village of Nahr el-Pasha.
0	**Kurna.**
½	Boat-bridge.
¼	**Norfolk** Creek enters from N. Depth near mouth given as about 4 ft. in the flood season, 1915. The creek is apparently connected with the creek which enters the Tigris a little above Fort Snipe.
1	**Nahr el-Pasha,** a large creek: general direction about NW. Depth near mouth given as about 5 ft. in the flood season, 1915. Believed to communicate eventually with El-Howeir Creek or Barbukh Creek (see m. 7½ below, and *Route* III A, m. 3½).

Right Bank	Total distance Miles
	$2\frac{1}{2}$
	3
Derbend village and mouth of **Derbend** Creek. This creek is reported as turning a short distance above its mouth to run behind the palm-belt above described. It is said to carry water in flood-time to the Shatt el-'Arab, which it joins at a point a short distance below the mouth of the Suweib River on the opposite bank (see *Route* I B, m. 42).	5
Above the mouth of the Derbend Creek the marshes join the river. Course runs about W. for some distance. For about 1 m. the only signs of cultivation are two or three small clumps of date-trees, about 1,000 yds. from the S. edge of the channel, which contain Beni Mansūr dwellings.	
	$5\frac{1}{2}$
Opposite Senīn mounds, the date clumps become larger, though the margin of the river is still marsh.	$6\frac{1}{2}$
From the mouth of El-Howeir Creek (see opposite) the direction of the river up to Medineh is first SW., then between SSW. and S., then W., NNW., and NW., thus forming on l. bank a kind of pocket of land called El-Khas (see opposite). The clumps of date-trees here become a continuous belt meeting and following the river bank, which here rises again above the water, and is well defined. The palm-belt continues, varying in depth, from this point to above Medineh (see m. $13\frac{1}{2}$ below).	$7\frac{1}{2}$

Intermediate distance Miles	Left Bank
$\frac{3}{4}$	**Nahr el-Pasha** village. Palm-belt here ceases: and besides a few plantations of young trees there are no date-groves till El-Howeir Creek is reached.
$\frac{1}{2}$	Beginning of **Kheit,** the temporary village of Sheikh Gubashi of Kurna, which stretches along river bank for over a mile. The country behind this village is covered with tall reeds, and though comparatively dry in winter is flooded in the high-water season to a depth of 3–5 ft.
2	
$\frac{1}{2}$	Mouth of **Rumeileh** Creek, running in a general NNW. direction: connected with El-Howeir Creek.
1	**Senīn** mounds, some distance back from the river.
1	**El-Howeir** Creek enters Euphrates: direction at its mouth about NW. The course of the creek winds in a generally northerly direction. Up to a point at least ~$3\frac{1}{2}$ m. from the Euphrates it was reported in May 1915 to be 30–10 ft. wide and 8–10 ft. deep. The channel was reported choked with weeds at about ~2 m. from the mouth. It is believed to be connected with the Barbukh Creek (see *Route* III A, m. $3\frac{1}{2}$), and by other water-cuts with the Tigris at Sakricheh (see *Route* III A, m. $16\frac{1}{2}$), and with the same river at Amara. **El-Howeir** village about 1 m. (?) up the creek. Peninsula of **El-Khas.** Here dense clumps of palms and clusters of dwellings are scattered thickly throughout a deep marsh in which they appear as islands. The T.L. runs WSW. from El-Howeir across the El-Khas bend, rejoining the river near Medineh. From El-Howeir Creek

Right Bank	Total distance Miles
In this neighbourhood, mouth of creek leading to **El-Hawā** village, about *½ m. from river.	8¾
Above this creek begins a tract of the Beni Mansūr country called **Cheri.**	
In this neighbourhood river bears westerly. **Cheri** village.	10¾
Near this point a building called **Khutweh 'Ali,** a monument of a Sheikh 'Ali who is said to have stepped across the river at this point. River bears NW.	11½
Mouth of **Nahr 'Antar,** a creek dividing the Beni Mansūr country from the land of the Sheikh of Medineh. The Nahr 'Antar is believed to communicate with the Shatt el-'Arab in the neighbourhood of Gurmat 'Ali and with the Khōr or open water through which the New Channel of the Euphrates runs. About 1½ m. up the creek is the Beni Mansūr village of **El-Halef** on the E. side. Apparently a short distance above El-Halef, the Nahr 'Antar is joined by a creek which enters from W., flowing from the creek mentioned under m. 15½ below, and communicates eventually with the Nahr Sālih (see m. 19 below).	11¾
Above Nahr 'Antar, the direction is about NNW. **Dawās** tract (territory of Sheikh of Medineh).	12
	13
River bends W.	13¼
Medineh town begins. Population variously estimated, an authority of 1909 giving 'perhaps 2,500', an authority of 1915 'about 500'. A small town with a few shops and several coffee-houses. In an open space W. of the town is a large brick building, which used to be the Turkish barracks, affording accommodation for 200 men. Mats, reeds, and a small amount of maize are exported to Basra by the inhabitants of the Medineh district. In El-Khas (see m. 7½ above) there are a number of *maheilehs,* whose owners make a living in the carrying trade. The Sheikh of Medineh is reported (1915) as able to raise some 1,500 men armed with breech-loaders. His authority stretches from El-Howeir Creek to some point between Turābeh and	13½

Intermediate distance Miles	Left Bank
	the l. bank is under the authority of the Sheikh of Medineh.
1¼	
2	
¾	Building commemorating the legend of Sheikh 'Ali (see opposite) over against the similar building on the r. bank.
¼	
¼	
1	In this neighbourhood the palm clumps of El-Khas cease. Open marsh stretches along river to Chubeish. T.L. runs along bank.
¼	
¼	Creek enters from NNW. About 4 m. up it is **Turābeh,** a solitary clump of palms in which is a group of dwellings belonging to Sheikh Hamud of Medineh and his relations.

Right Bank	Total distance Miles
Chubeish on the l. bank, and from the Nahr 'Antar to the Nahr Sālih on the r. bank.	
In this neighbourhood the palm-belt on the r. bank ceases. The marsh comes down to the river. Only here and there the hut of a Ma'adan Arab is visible.	15½
Creek running S., believed to be connected by cross-cuts with Nahr 'Antar near El-Halef village and with the Nahr Sālih.	
In this neighbourhood mouth of **Nahr Sālih:** a creek running S. or SW., believed to rēach the lake area through which the New Channel of the Euphrates flows, and to be connected by a cross-cut with the creek mentioned immediately above. About 1 m. from its mouth is Nahr Sālih village, with date plantations, and about 1 m. farther up is apparently El-'Amāyeh village.	19
Creek (apparently called Nahr Bakhātireh).	22¼
Near this point very shallow water reported in January 1915.	24
Creek. Inland lie some small villages.	25
Chubeish Bar in this neighbourhood. It is said to be just above a bend, where the course up-stream changes from WNW. to WSW. Water formerly very shallow (2 ft., Aug. 22, 1916): channel dredged to 7 ft., Sept. 1916.	27
Channel bears round to SSW. past Chubeish village.	29
[NOTE.—According to an account based on reports of 1915, the distance between the E. end of Chubeish village and the Hammār Lake is 10½ m., Chubeish village extending 6 m. along the bank of the river.]	
The channel in 1916 bore about W. here. Depth from here to Hammār Lake of over 9 ft. in April, May, and June, and about 4½ ft. in the low-water season (so reported in 1915). Reeds on both sides clearly define the channel, which is 75-100 yds. in width.	32
Entrance to **Hammār** Lake: channel here about 40 yds. wide and 5 ft. deep on March 2, 1915. It widens farther on to about 200 yds. Depth here may be 7 ft. in high flood, and 1-2 ft. in l.w. unless dredged: see Appendix C. The Hammār is a tract of open water lying in the midst of swampy country, much of which is itself covered during	38

Intermediate distance Miles	Left Bank
2	? Creek, a short distance up which is **Benān** village. In some maps this village is marked as situated up a creek opposite the Nahr Sālih.
$3\frac{1}{2}$	
$3\frac{1}{4}$	Creek.
$1\frac{3}{4}$	
1	
2	
2	**Chubeish** village begins in this neighbourhood. This is a considerable settlement inhabited by Beni 'Asad, extending for some miles along the bank, intersected by creeks and surrounded by date-groves.
3	T.L. runs about parallel to the general direction of the channel.
6	

Right Bank	Total distance Miles
flood season. It is therefore difficult to estimate the size or to define the boundaries of the lake, but it may be said roughly that it is about 6 m. broad from N. to S., and 12 m. long from E. to W. On its northern and southern sides are belts of island-villages. Northward from the northern islands is a shallow inundation area, southward of the southern are marsh and thick reed-beds dividing the Hammār Lake from the open water of the New Channel. On the N. the Hammār Lake is fed by the two great canals known as the **Majarr el-Kebīr** and **Majarr es-Saghīr,** which run from the r. bank of the Tigris between Qal'at Sālih and Amara. On the NW. it is entered by the **Nahr el-Beidhā** and the **Nahr Hamzeh,** which run from the Shatt el-Hai, the former from a point a few miles N. of Shatreh, the latter from about half-way between Shatreh and Nāsirīyeh. For the navigation of the Beidhā and Hamzeh see *Route* V. The Old Channel of the Euphrates enters the Hammār Lake on the W., and crosses it in a broad curve to N., leaving it at a point SE. of Beni Huteit.	
The Hammār Lake is fed by the Old Channel of the Euphrates (called Haqiqeh), by the canals above mentioned, and by other channels on the W. and N., and is drained partly by the old bed of the river already described, and partly also by the channels running SW. and SSW. to the open water through which the new main channel of the Euphrates runs to Gurmat 'Ali.	
In October 1916 it was intended to survey the Hammār Channel. See further Appendix C.	
All the villages to S. of the lake are marked by palm-groves, and appear as islands in the midst of swamp or open water. Their names, order, and relative positions are very differently given in various recent maps.	
Many kinds of wild-fowl abound in the lake, including coot, mallard, widgeon, and pochard.	
In the spring of 1915 the following was given as the description of the course of the channel through the lake. The general direction of the channel was first NW. and then W. and WSW. From the point where the river first broadens into the lake the channel was at first some 200 yds. wide, and was marked on either side by reeds, those	

Intermediate distance Miles	Left Bank

Right Bank	Total distance Miles
to the N. being thin and scattered. It proceeded about W. by N. for 1½ m. to a point where twenty tall isolated palms, about 700 yds. to the N., were passed, and it then bent N. by W., and continued in this direction for 1½ m., running parallel to the reeds on the SW. and at a distance of about ½ m. from them. When due W. of Beni Huteit Island the channel turned W. by S. and struck across the lake in this general direction for about 11 m. In this 11-m. stretch the width of open channel was about ½ m., and there is no clearly defined channel bed. The details of the channel may by now have altered considerably. Depth, Sept. 1, 1916, 1¾–2 ft. The water shallows towards the N. and S., where the island-villages are situated.	39½ 41
The course winds through reeds in a northerly direction, leaving the mouth of the Mezlaq Channel and the Mezlaq villages on the port bow. For the Mezlaq Channel see note at the end of section ii below.	55
Channel in 1915 here turned NW. into the **Haqiqeh** Channel. At this point occurred the worst shallows of the entire route, soundings in a low river occasionally shoaling to 18 in. The channel was here some 400 yds. broad. As it proceeded W., it narrowed to about 200 yds. For some 4 m. it was marked on the N. by a narrow belt of low reeds, and on the S. by thick reed-beds extending to the dry land, on which are scattered the numerous villages and mud towers of the district of **Jawābir.** Soundings along the reach were 5–6 ft. in June 1915, and 3–4 ft. two months later. There is a 2–3 knot current during flood season. *	57½
Hereabouts is apparently the flood season's western limit of the Hammār Lake. Near this point **Rufādiyeh** Creek, navigable for *bellams,* joins the Haqiqeh. It leaves the Mā Shā'īreh Creek (see m. 64¾) 4 m. down the latter's course and takes off a large proportion of its water. *	61½ 62½
From here the course bears SW., and the channel, which from this point westwards is more commonly known as the **Gurmat Safheh,** is clearly defined and is about 180 yds. wide.	
* The remains of the **Haqiqeh** Dam. See introduction to this route, p. 114, and Appendix C, p. 469. A navigable channel, 75 ft. wide, has been cut through this dam, and the	63¼

Intermediate distance Miles	Left Bank
$1\frac{1}{2}$	Group of 20 tall palms 700 yds. to N.
$1\frac{1}{2}$	**Beni Huteit,** island-village, lies due W.
14	
$2\frac{1}{2}$	* **The Haqiqeh Channel is apparently now closed to navigation** (Jan. 1917). See p. 135, and Appendix C, pp. 469–470. **Haqiqeh** Bar. A later report on this bar (i. e. the shallows referred to on opposite page) shows that depth at end of August 1916 was 1 ft. 3 in.; bottom soft mud. At beginning of September 1916 a channel was cut through the bar, 1,150 yds. long, 2 ft. deep (l.w.), breadth at N. entrance 50 ft., elsewhere 20 ft.
4	
1	* About here is another bar of hard silt and mud (autumn 1916). Depth 1 ft. 9 in. for 600 yards (beginning of September 1916). It was intended to cut a channel through it.
$\frac{3}{4}$	* The accompanying description refers to conditions before the completion of new works which were expected to close the Haqiqeh Channel to navigation in Jan. 1917.

Right Bank	Total distance Miles
current runs through the cutting with great force, making it necessary for upgoing steamers and boats to be hauled through with ropes. The sounding at this cutting was 5 ft. 6 in. in June 1915, but it may in time scour deeper.	
[The Haqiqeh Bund when intact deflected the water into canals which irrigated the country in the S., and in some cases a limited area to the W.]	
Above the Haqiqeh Dam the channel takes a winding course in a general WSW. direction (depth 4–7 ft., August 1915). It is bordered on both sides by well-irrigated and valuable tree-growing land. There is much rice cultivation. Numerous Arab towers are visible from the channel. The land to the N. has been in recent years under water from January to May, but this state of affairs may have been altered by the destruction of the Haqiqeh Dam.	
Mā Shā'īreh or **Mujaihishīyeh** Creek joins the channel. This creek leaves the main stream of the Euphrates above Sūq esh-Shuyūkh (see section iii, m. 5). In 1915 it was reported unfit for anything bigger than light *bellams* or motor-boats. To N. of its E. end is a large expanse of open water, about 7 m. long by 3 m. broad. The T.L. runs along the N. side of the creek.	64¾
From the junction of the Mā Shā'īreh Creek the channel continues in a W. direction with an average width of 100 to 150 yds. for 6½ m. to Mohammed el-Hābi. The depth of water along this 6½ m. reach is ample, and belts of date-palms extend along both banks. Outside these belts the country is liable to inundation, richly cultivated, and dotted with villages.	
Junction of channel with main course of the Euphrates.	71¼

(ii) THE NEW CHANNEL FROM GURMAT 'ALI TO THE JUNCTION WITH THE OLD CHANNEL. NOTE ON THE MEZLAQ CHANNEL.

The depths given in the following account are taken (except where otherwise stated) from a map of April 1915.

This channel in April 1915 followed a general NW. direction for some 75 m. from its mouth at **Gurmat 'Ali**

Intermediate distance Miles	Left Bank
$1\frac{1}{2}$	
$6\frac{1}{2}$	**Mohammed el-Hābi** village.

Right Bank	Total distance Miles
(see *Route* I B, m. $5\frac{1}{4}$, $6\frac{1}{4}$) to the point where it joined the Old Channel at the W. end of the Hammār Lake.	
Gurmat 'Ali. Bridge across the mouth of the New Channel. The northern section can be swung open to allow boats to pass. See *Route* 2, m. 4. At the mouth the channel bifurcates, the northerly branch being the Āsafīyeh Creek. The navigation follows the branch to SW.	0
According to the survey made in April 1915 the channel passes **Beni Hāweh** on the r. bank, leading at first SW. for about 1,500 yds., and then bending NW. About 1,200 yds. from this bend it has **Nahr Kharawi** on the S.	2
The S. bank is liable to inundation. There are date plantations which become gradually fewer on both banks. Near this point the channel enters a large expanse of shallow water which extends from the marshes round the Nahr 'Antar on the W. to the higher and firmer ground of the desert on the S. The area under water varies at different seasons. In the spring the low desert round Basra may be flooded, and farther W. continuous dry ground be reached only on the line Nukheileh, El-Lawi, Ratāwi, Gubashīyeh, Legatteh. The lake-area is, however, interrupted by the large islands of Abu Salabik (Sandy Island) and Chirbashi ('Blockade Point'). The channel takes a general direction towards NW. as far as the Straits of Muzafferi (see m. 42 below).	6
Mud banks to W. and SW.	11
Sulimi tower some distance to W. The channel after this apparently bears more to the W., passing to N. of the tower.	
Sulimi tower directly to S.	15?
Depth 6–$7\frac{1}{2}$ ft., April 1915.	
About S. of this point is **El-Lawi,** the best landing-place from the New Channel. Muzafferi Straits lie NW. Course of channel uncertain. Depth in April 1915, 7 ft.	25?
Channel passes through the Straits of **Muzafferi** between the long sandy island of Abu Salabik on the S. and swamp on the N.	42?

Intermediate distance Miles	Left Bank
0	**El-ʿAli.**
2	At about 800 yds. above Nahr Kharawi (see opposite) is the upper end of Āsafīyeh Creek on the N., and at 1,200 yds. the Shitaweh Creek, and at 2,100 yds. it has **Nahr Khōr Karah** on the N. Apparently the **Nahr ʿAntar** joins the channel between 3 and 4 m. above Gurmat ʿAli.
4	**Harir**, an island to N. of channel.
5	
4 ?	
10 ?	
17 ?	

Right Bank	Total distance Miles
Abu Salabik, or Sandy Island, stretches SW. for about 12 m., its southern end lying close to the edge of the dry desert opposite the village of **Gubashīyeh,** to which boats can approach fairly close in the flood season. The village has a mosque. W. of the southern end of Sandy Island lie some patches of low marshy ground, which, at least in the flood season, are separated from the mainland by water. The largest of these islands is called Chirbashi. Its N. end, known as Blockade Point, is about W. by S. of the N. end of the straits. S. of Blockade Point on the NE. side of the island is the deep indentation known as Molesworth Bay, and at its SE. end another inlet called Trafalgar Bay. The village of **Chirbashi** lies on the SE. end. Between Chirbashi and Abu Salabik lies the island of **Jalat Sālih.** About 6 m. W. of Chirbashi Island is the mound rising from the marshes called Hampshire Hill.	
W. and SW. of the straits towards Blockade Point depths of 7½ ft. are charted (April). The direction of the channel is uncertain. It perhaps trends W. and then NW., passing through the swamp and between the island-villages that lie on the S. side of the Hammār Lake (see section i under m. 38, p. 124). In the Hammār Lake the Old Channel is joined. (*Maheilehs* and *bellams* coming from Gurmat 'Ali can reach the Mezlaq Channel by ascending the Umm Naklah cut, the mouth of which is 3–4 m. S. of the mouth of the Mezlaq. See below, under Mezlaq Channel.)	
Junction with the **Old Channel** in the Hammār Lake.	75 ?
Entrance to **Haqiqeh Channel.**	79

Mezlaq Channel. *

About 3 m. S. of the mouth of the Haqiqeh Channel is the entrance to the Mezlaq Channel, leading to Sūq esh-Shuyūkh. It is difficult to locate in flood season. There is at the entrance a bar 150 yds. in length, composed of soft black mud, with a depth of only 15 in. of water in August as against a minimum of 3 ft. throughout the rest of the channel. (The Mezlaq Channel has also a SE. mouth called the Umm Naklah leading into the open water of the New Channel: see m. 6¾ below.) It is not practicable for steamers, but is much used by '*maheilehs*' (large *bellams* ?), which ascend the New Channel from

Intermediate distance Miles	Left Bank
33 ? 4	
	* The Mezlaq Channel was expected to be opened to navigation in Jan. 1917, taking the place of the Haqiqeh Channel.

Right Bank	Total distance Miles
Gurmat 'Ali to Sūq esh-Shuyūkh. The place where the Umm Naklah debouches into the open water of the New Channel is difficult to find. The banks of the Mezlaq Channel are low and flooded in the high-water season. The advantages of this channel, however, over the Haqiqeh Channel are that it is somewhat shorter and not subject to rapids as is the latter near the site of the Dam. It also possesses a good tow-path running the whole way from the Hammār Lake to Sūq esh-Shuyūkh. It is the normal route followed by large *bellams* plying between the lake and Sūq esh-Shuyūkh. For the first 2 m. above the bar the channel is only 25 yds. wide, with a depth in August of 3 ft.	
Mouth of Mezlaq Channel.	0
Rice cultivation.	1
Depth above this point early in August, 4 ft.	$2\frac{1}{4}$
	3
Depth in August, 7 ft.	$4\frac{3}{4}$
Depth in August, 4 ft.	5
Gurmah village. Gravel bar, with depth of 4 ft.	6
Depth in August, 12 ft.	$6\frac{1}{2}$
Upper end of **Umm Naklah** Channel leading to open water of New Channel of Euphrates. See above.	$6\frac{3}{4}$
Umm el-Kalleh Canal, leads to Khamīsīyeh.	
Depth in Mezlaq Channel, 18 ft.	
Wreck of *safīneh* obstructed waterway in August 1915. Navigation channel followed l. bank. Depth in August, 5 ft.	$7\frac{1}{4}$
Mouth of **Khurmashi** Creek. Depth in Mezlaq Channel, 8–7 ft.	8
Depth in August, 22 ft. Up to Atabīyeh Creek depths vary from 17 ft. to 27 ft.	9
Walled date gardens.	$10\frac{1}{2}$
Atabīyeh Creek, leading to Khamīsīyeh. Depth in Mezlaq Channel, 7 ft. (August). Above this to the beginning of Sūq esh-Shuyūkh depths of 7–12 ft. are found.	$11\frac{1}{2}$
	13
Date plantations on both banks.	$13\frac{1}{2}$
Sūq esh-Shuyūkh town begins.	$14\frac{1}{2}$
From Sūq esh-Shuyūkh a narrow water-channel, 3–6 yds broad, with depth of 3 ft. in January, and passable by *bellams*, leads to **Khamīsīyeh** on the Basra—Nejef and Basra—Nāsirīyeh Routes (*Routes* 12, 13 a, 13 b).	

Intermediate distance Miles	Left Bank
0	
1	Straggling village of **Mezlaq** begins.
$1\frac{1}{4}$	
$\frac{3}{4}$	
$1\frac{3}{4}$	
$\frac{1}{4}$	
1	
$\frac{1}{2}$	
$\frac{1}{4}$	Date plantations. Above this point they are dense.
$\frac{1}{2}$	Channel follows l. bank past wreck.
$\frac{3}{4}$	
1	
$1\frac{1}{2}$	
1	
$1\frac{1}{2}$	Walled gardens.
$\frac{1}{2}$	
1	

Right Bank	Total distance Miles
Details from Khamīsīyeh (times taken by *bellam* poled by two men. The authority estimates the speed of the *bellam* at 5 m.p.h.):	
Hours.	
0 Khamīsīyeh. Direction N., channel 6 yds. broad. Open desert on either side.	
1 Direction NW. Marshland and high reeds on both sides.	
1½ Village on island to E.	
2 Direction E. Water-channel branches to W.	
2½ Large piece of open water, with channel debouching N. and S.	
3 Direction N., channel 6 yds. broad.	
3½ Open desert to W., marsh to E. Channel narrows to 3 yds., and ends in village of reed huts.	
3¾ By narrow path through gardens to **Sūq esh-Shuyūkh.**	15
Upper end of Sūq esh-Shuyūkh. Channel turns N. Average width 175 yds. Palm-groves on both banks.	16
	18

(iii) Sūq esh-Shuyūkh—Nāsirīyeh.

The distances between and relative positions of the places here mentioned are very uncertain.

The average width of the river is 150–200 yds., with ample depth at all seasons. Current, 2½–3 knots. Creeks, with the exception of the Mā Shā'īreh (see below, m. 5), are used merely for irrigation purposes. River steamers can moor alongside the banks at most places. The l. bank has palm-groves and low-walled enclosures, with scattered villages almost throughout its whole length. The date-groves vary from 150 to 250 yds. in depth, are protected from flooding by *sudd*, and are intersected by numerous small irrigation ditches, which are, however, passable for infantry and mules. Behind the date-groves are marshes. The r. bank is similar to the l. for the first 13 m. and for the 3½ m. before Nāsirīyeh. The intervening portion is taken up with marsh and cultivation.

Sūq esh-Shuyūkh.	0
Direction of channel is somewhat E. of N.	
Direction of channel changes to WNW.	2
	3½

Intermediate distance Miles	Left Bank
$\frac{1}{2}$	Suburb of Sūq esh-Shuyūkh.
1	
2	Upper end of **Haqiqeh Channel.**
0	
2	Upper end of **Haqiqeh Channel.**
$1\frac{1}{2}$	**Mohammed el-Hābi.**

Right Bank	Total distance
	Miles
	5
River bends SSW. immediately above Towāreh Creek.	16½
River bends W. ¾ m. above Towāreh Creek: anchorage.	17¼
River bends NW.; at bend, **Musaffeh** Creek (40 ft. broad, 5 ft. deep), dam 300 yds. up; four more creeks within the next 1¼ m., of which the last (**Umm es-Sabiyān**, about 600 yds. above a village on the l. bank (Haji Ahmād ?)) leads to a broad, reedless channel running NW. through the marsh, passable for *bellams* of 2½ to 3 ft. draught.	17½ 18¼
River bends N. ('Thorneycroft Corner') ¼ m. above Atabīyeh Creek; at the bend, **Majīnīneh** Creek, running W. (45 ft. broad, 5 ft. deep).	19¼ 19½
	20
Direction of river changes from N. to W. Palm-groves begin again and continue up to Nāsirīyeh.	20¼
	20¾
	23¾

ROUTE IV B

NĀSIRĪYEH—SAMĀWEH (79½ M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; 'Indian Degree' map series, correction to 3 E, 3 I (April 1916); and other sources of information.

NOTE.—The positions of the villages, creeks, &c., on the river between Nāsirīyeh and Samāweh are very uncertain.

From Nāsirīyeh to Samāweh is a distance of about 81 m. The river runs in a general direction WNW. with a number of minor bends and a considerable turn towards the N. above El-Khidhr. According to an authority of 1908 the width of the river, about 300 yds. at Nāsirīyeh, gradually decreases up to Durāji, between

Intermediate distance	Left Bank
Miles	
$1\frac{1}{2}$	Upper end of **Mā Shā'īreh** Creek: see section i above, m. $64\frac{3}{4}$.
$11\frac{1}{2}$	**Towāreh** or Sultān Creek, a large canal (50 yds. broad, 15 ft. deep) running in northerly direction with many branches towards the W. Date plantations continuous from Towāreh to Sadanawiyeh Creek.
$\frac{3}{4}$	
$\frac{1}{4}$	
$\frac{3}{4}$	Village (Haji Ahmād ?).
1	**Atabīyeh** village, on a large creek of the same name, a little over 1 m. above village on l. bank last mentioned.
$\frac{1}{4}$	
$\frac{1}{2}$	**Miyādīyeh** village, standing back from the river in the palm-groves, nearly 1 m. above Atabīyeh.
$\frac{1}{4}$	
$\frac{1}{2}$	Mouth of **Nahr Sadanawīyeh,** leading to the Shatt el-Hai (see *Route* V).
3	**Nāsirīyeh.**

which place and Samāweh it varies from 50 to 120 yds. This estimate of the width above Durāji is confirmed by the latest map (April 1916). A report based apparently on information of 1912–13 gives the width of the river between Nāsirīyeh and Samāweh as 150–200 yds. Navigation appears to be fairly easy. Good running was made on this section of the river by the E. & T. S. N. Co.'s steamer *Ishtar*, drawing 3 ft., at the beginning of February 1912. The river, however, does not appear to be so deep here as between Sūq esh-Shuyūkh and Nāsirīyeh.

It was reported in 1905 that up to Durāji the swamp on the N. and the desert on the S. come right up to the banks. According to a recent map, however, there is marshy ground on the southern bank for about 15 m. above Nāsirīyeh. Above Durāji the banks

are 7 to 14 ft. high in the low-water season: irrigation is carried on by means of skin buckets, and scattered but fairly extensive crops are cultivated.

Beyond the immediate neighbourhood of the banks, the character of the l. bank is determined as far as Durāji by the **Khōr Huseiniyeh,** which is connected by a number of creeks and channels with the Euphrates and renders the whole country swampy: W. of the Huseiniyeh stretches desert land, broken only by occasional *tels* and the traces of old canals running northward. On the S. the valley is bounded by the low ridge which constitutes the northern edge of the Arabian desert. About ʷ16½ m. S. of Samāweh are the hills of **Jebel Barr,** where there is said to be a rock-salt deposit, W. of which lie the gravel hills of **Jebel Zurgah.**

There appears to be an easy route along the southern edge of the

Right Bank	Total distance
	Miles
Date plantations on r. bank above Nāsirīyeh.	0
Tomb among date plantations. Several canals in the next few miles.	3
Low sand-hills, with nine palms. Tomb beyond sand-hills on canal running SW.	8½
Small island.	11½
'Abbās Saghīr tomb.	13½
Ghafleh. Small creek above this place.	14¼
	15
Husein el-Sheikhān.	19
Hubeirim. Island opposite this place.	19½
Muthaimineh Creek on the concave side of a river bend. Above it lies Zabin village and fort among palm-groves. Villages with palm-trees occur about every 2 m. above this point as far as Guwwām. Cultivation.	22
Baghai el-Mateir village and palm-groves. Not far above it is **Butaiheh** with palm-grove.	26½
Irrigation plant.	30½
Guwwām.	32
Naif el-Ajil.	36
Subeikh.	39

valley from Nāsirīyeh to Samāweh. The T.L. runs on the l. bank except for a short stretch between Durāji and El-Khidhr (see m. 41 and m. 57½).

The greater part of the country on the r. bank of the river between Nāsirīyeh and Durāji is inhabited by **Muntefiq,** and above Durāji the bank is occupied by smaller Shiah tribes, settled cultivators and stock-breeders. In the desert to the W. of Samāweh are the powerful nomad **Dhafīr,** who visit the towns on this part of the Euphrates for supplies. The neighbourhood of Durāji, and apparently of El-Khidhr, on both banks is inhabited by a settled Shiah tribe called **Al Bū Muhsin.** On the l. bank the **Budūr** are apparently found about 20 m. above Durāji. The members of this and other small tribes on the l. bank are all settled Shiahs. In the desert N. of Samāweh live the strong tribe of **Khaza'il** (see pp. 151–2).

Intermediate distance Miles	Left Bank
0	**Nāsirīyeh.** Abu Jedaha bund runs N. from the river bank at the upper end of the town. See *Appendix.*
3	**Bazal** Canal. Beyond this point marshy ground extends NW. not far from the river bank as far as Nukrain inlet (m. 13½). Villages on river bank between this point and m. 8½.
5½	**Baksum** inlet. Several canals above this point leading into marsh.
3	
2	**Nukrain** inlet, running to the Khōr Huseiniyeh.
¾	
¾	**Ānah** (old fort).
4	
½	Creek. **Māi'ah** village above it.
2½	
4½	Irrigation plant.
4	Tower.
1½	Shrine in palm-groves (Khidhr Dardash). Above it is **Salakheh** Creek. Tower about ½ m. above creek.
4	Irrigation plant.
3	

Right Bank	Total distance Miles
Gardens and island opposite Durāji. River above here varies from 50 to 120 yds. in width.	41
Humūd el-Hazzām village in palm-groves. Above it is a canal leading S.	43
T.L. crosses from l. to r. bank.	48
Island just above village on l. bank.	49¼
	50½
Manyash. T.L. recrosses to l. bank.	52½
Two villages (Abu Rishan and 'Ain) between here and El-Khidhr. Some palms above Abu Rishan.	
Gurmat ibn-Daud.	57½
Ferry according to latest map (April 1916) is 3½ m. above El-Khidhr. It probably changes its position according to the state of the river.	
	69½
Date plantations begin.	75½
Samāweh. Bridge of boats. Map of 1915 (B) gives the distance from El-'Othmān to Samāweh as about 8 m.	79½

Intermediate distance Miles	Left Bank
2	**Durāji** (or **Qal'at Durāj**): a small village. T. (The *Gazetteer* estimates the distance from Nāsirīyeh to this place as 50 m. by river.) Track leading NE. to Shatret el-Muntefiq or Shatreh. (See *Route* 19 a, under m. 37.) This village marks the western boundary of the territory of the Muntefiq on both banks of the river; it is also the first place of importance within the Baghdad *Vilayet*. About 11 m. N. of Durāji, on the end of an old canal which branches S. from the Shatt el-Khār, lies the ruins of **Warkā,** the ancient Babylonian city of Erech, the capital of Nimrod. The remains are more extensive than those of any other Babylonian city, and cover an area of about 5 m. by 3 m. They consist of a number of mounds, many of them still partly faced with burnt brick; the largest of these mounds (**Tel Euweriyeh**) lies to the E.; from the top of it there is a wide view including **Tel Sanqareh** to the E. (12½ m.) and the palms of Durāji to the S. The old canal-bed apparently connects with **Shatt el-Khār** at a place called **Mellāheh.**
2	Ruins.
5	
1¼	**Jabbār's** village.
1¼	Mouths of two creeks on concave side of river-bend.
2	**Jabr esh-Shīhan.** T.L. again runs on l. bank. Two or three villages between here and El-Khidhr. Willows along river bank.
5	**El-Khidhr.** A village of about 100 mud houses; the inhabitants are cultivators, boatmen, and traders, and are mostly Āl Bū Muhsin. For Ferry, see opposite. Samāweh lies WNW. of El-Khidhr.
12	**El-'Othmān** village.
6	
4	Above this point date plantations of Samāweh begin.

ROUTE IV C

SAMĀWEH TO MUSEYIB

Authorities :—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Military Report on the Region between Baghdad and the Persian Gulf*, 1911; *Field Notes on Mesopotamia*, 1915; other information from various sources.

From **Samāweh, Museyib** lies about NNW., and between the two towns the Euphrates runs in two great branches, the distance by river being on the westernmost or **Hindiyeh** Branch about 167 m., on the eastern or **Hilla** Branch about 173 m. The navigation channel before the war followed the Hindiyeh Branch.

Hilla and Hindiyeh Branches.—This great bifurcation of the river is of very ancient date, and may be traced back as far as the history of the country is known. The volume of water has at different periods shifted from one branch to the other, according as one or other of the channels has silted up or its mouth become obstructed.

Some forty years ago the Hilla Branch carried by far the larger proportion of the water and was universally regarded as the main channel of the Euphrates: the Hindiyeh Branch was looked upon as little more than an irrigation channel. The closing of the head of the Saqlāwiyeh Channel, a short distance above Fellūjeh, increased very considerably the volume of water flowing past Museyib. The result was that the mouth of the Hindiyeh Branch gradually widened, and by 1886 was reported to be 85 yds. broad. In spite of the efforts of the Turkish Government, which constructed a dam of loose rubble and cement a short distance below the site of the present barrage, by 1903 the mouth of the Hindiyeh Branch had reached the width of 200 yards. The immediate effect of the Turkish Government's barrage had been to raise the level of the Hilla Branch by some 6 or 7 ft., and to cause one-third of the total volume of water to pass down it, though two-thirds still pursued the course of the Hindiyeh. This rectification was completely neutralized by the bursting of the new dam in July 1903, in consequence of which the water rushed at once into the Hindiyeh Branch. The result was that the Hilla Branch was left dry, except for a few weeks in the high-water season, and the boat-bridge at Hilla was seen in September 1903 lying on the dry bed of the river. This state of things at once proved disastrous for cultivation along the Hilla Branch, and the Government engaged Sir W. Willcocks (who had recently constructed the great barrage on the Nile at Assouan) to

make a survey with a view to checking the damage. He published his preliminary report in 1905, and closed the opening in the Old Barrage in 1909; but, this proving insufficient, he further proposed the construction of a new barrage about ½ m. above the old dam with a head regulator for the Hilla Branch: work was begun on this barrage in 1910 and completed in 1913 (see further, on the barrages and regulator, Appendix C, p. 464).

These changes have greatly affected not only the actual course of the water, but the cultivation on its banks and the population of the district. In the days before its drying up the Hilla Branch had passed through a thickly inhabited region with many villages on its banks, and much cultivation of cereals and fruits: Hilla itself was a flourishing town and a great centre of agricultural commerce, and Diwāniyeh was also prosperous. But the shifting of the water to the Hindiyeh Branch had produced a great change: cultivation practically ceased except in the immediate neighbourhood of Hilla, villages were deserted and fell into decay, Hilla itself lost most of its prosperity, and the population gradually moved westwards towards the Hindiyeh Branch, which, however, is much less suited to support cultivation owing to the great *khōrs* through which it runs and the near neighbourhood of the desert on its western side. The erection of the New Barrage and the regulation of the water-supply ought to bring back the district into cultivation and renew its former prosperity, but how far this process may have advanced at present it is impossible to say, and conditions can only be reported as they were before the completion of the barrage. It is improbable that its erection will have a beneficial effect on the Hindiyeh Branch, as the great amount of water which must be passed through the barrage in flood-time will help to swell the great marshy areas lower down.

The Hindiyeh Branch.—(*a*) *Course.* The **Hindiyeh** Branch immediately above **Samāweh** enters on the region which in mediaeval times was the upper or broader portion of the Great Swamp. The swamp is represented in modern times by a series of *bahrs* or *khōrs*, large marshy areas through which the river takes an uncertain course with a tendency to larger or smaller bifurcations. The first of these areas, consisting of the **Khōr Allāh** and **Khōr ʿUwaineh,** lies N. of the l. bank of the main channel, but a large branch (the navigation channel), known as the **Shatt Khansār,** runs through the *khōr*, itself bifurcating and forming channels connecting with the Hindiyeh. Through the middle of the next swamp, the **Bahr-i-Shināfiyeh,** the river runs in an ill-defined channel, and enters it at its northern end in two distinct branches, the **Kūfeh** and the

Shāmiyeh channels, which separate at **Kifl** and enclose between them a third swamp known as the **Khōr el-'Abbāsiyeh**: to the east of them, and between them and the Hilla Branch, lies yet a fourth swamp, the **Khōr Abu Nejm.** Above Kifl the two channels are again united in the Hindiyeh Branch, which leads NNW. past a sixth *khōr* on the l. bank to **Tawarīj,** where it takes a turn NNE. and runs through firmer ground to the junction below **Museyib.**

(*b*) *Navigation.* In most parts of this branch the river is navigable only for very small craft, except from March or February to the beginning of July, when it is practicable for craft drawing 3-3¾ ft. The last occasion before the war on which a steamer, the *Ishtar*, ascended this branch was in the first week of July 1913: the vessel drew 3 ft. 2 in. The Shatt Khansār is tortuous and difficult: its width is 80–100 yds. From its upper end to Shināfiyeh the river is 150 yds. wide and navigation is fairly easy. At Shināfiyeh there seems to be a bar, on which at the beginning of February 1912 not more than 2 ft. 2 in.–2 ft. 5 in. of water was found, though on the 14th of February the river had risen sufficiently to allow the passage of a vessel drawing 3 ft. Large *bellams* fully laden cannot navigate the Bahr-i-Shināfiyeh in l.w. Above this lake the Shāmiyeh arm is better for navigation than the Kūfeh Channel, which is now practicable only for quite small craft. The Shāmiyeh arm is 150 yds. wide except where islands reduce the breadth of the channel to about 50 yds. Navigation is hampered here and up to the barrage by native irrigation dams. From Kifl to the Hindiyeh Barrage the width is about 200 yds. The lower (old) barrage is almost impassable, and the lock on the New Barrage is only 26 ft. wide. See Appendix C.

(*c*) *Country along Hindiyeh Branch.* The Euphrates valley is bordered on its SW. and W. sides by a sandstone ridge which forms the edge of the Syrian Desert. From Samāweh to the Bahr-i-Shināfiyeh the old river-channel keeps close underneath this ridge, which reaches here a height of 50 to 100 ft. From this point for some 25 m. the edge of the desert recedes, and the river flows through lake and marsh. A few miles below Kūfeh the desert ridge again comes near the course of the river, in the form of a tongue or promontory, on which **Nejef** stands; it then runs NW., receding from the river and leaving between itself and the stream a low plain constantly liable to flood, backed by a desert of sand and fine gravel. In this plain stands Kerbela, 20 miles W. of the Euphrates. On the edge of the desert W. of the Bahr-i-Shināfiyeh and in the neighbourhood of **Kerbela** are a number of oases, the largest of which is **Shifātheh,** about 30 m. W. of Kerbela.

East of the Hindiyeh to the Hilla Branch lies a plain containing

large areas of marsh (see above). In the neighbourhood of the river cereals and dates are cultivated. The moist character of much of the country favours the growth of rice.

The Hilla Branch.—(*a*) *Course.* The **Hilla** Branch runs in a single channel. The marshes have gradually shrunk towards the west, and left the country on the Hilla Branch comparatively dry. The branch, which has apparently of recent years abandoned the mouth by which it used to join the other branch some 5 m. below Samāweh in favour of a détour to the W., takes a general NNW. direction (as followed up-stream) with many windings and a sharp bend W. some 20 m. above the **Shatt Dighāreh,** and again NNW. about 10 m. below **Hilla.**

(*b*) *Navigation.* The Hilla Branch is now navigable, in h.w. at least, for large *bellams,* and probably for small steamers if the regulator be left open. In l.w. it might be navigable if as much water as possible were turned down it. The lock at the regulator is 26 ft. wide. The Branch could be deprived of all its water at any season by the closing of the regulator. The Hilla Branch was unnavigable before the completion of the new Hindiyeh Barrage: it was indeed dry for some months every year. Before the barrage was finished the channel was cleared of silt for 50 miles from its upper end, and when the regulator was opened, 5 ft. of water had reached Hilla within 38 hours. Unfortunately, all the 50 to 60 more or less important distributary canals leaving the Hilla Branch between the barrage and Diwāniyeh are without regulators, and the amount of water taken off by them must so reduce the current in the branch that its bed may be now to a great extent silted up again, and without concerted effort by the tribes along the banks a recurrence of the old trouble is inevitable. The Hilla Branch is narrow, the channel being only 40-50 yds. wide between Samāweh and Imām Hamzeh, and 90-95 yds. near Diwāniyeh. There are native irrigation dams near Diwāniyeh and Hilla.

(*c*) *Country along the Hilla Branch.* On the E. side there is open country throughout its course, which stretches away to the Shatt el-Hai and the Tigris, with some pasture in spring and a little cultivation supported by winter rains, but for most of the year bearing only camel-thorn. The plain is broken by frequent trenches of old canals and by eminences, sometimes sand-hills, more often the ruin-heaps of dead cities. Here and there are *khōrs,* but the marshes have probably decreased in the last 20 years. Thirty years ago much of this country was irrigated by large canals from the Hilla Branch, but some of these apparently failed with the drying of the Hilla Branch. According to the latest information (1916), in the

flood season the Shatt el-Khār is continuous from Diwāniyeh to the Butnijeh Lake N. of Nāsirīyeh, but it is dammed about 2 days' journey from Diwāniyeh by the *bund* called Sagban. Over this *bund* no craft can be taken, and the water E. of it for 10 miles is shallow even in the wet season, and navigable then only for *bellams* up to $1\frac{1}{2}$ tons; in the l.w. season it is dry. After these 10 miles the channel deepens and it is always possible to reach the Butnijeh Lake by water. In the neighbourhood of Diwāniyeh this canal is apparently known as the Nahr Yusufīyeh. Above Diwāniyeh the **Shatt Dighāreh** takes off water to the SE. into the **Khōr 'Afej,** and forms what is apparently still a fertile region of cultivation and villages. SE. of the *khōr* some of its water reaches the Shatt el-Khār. Above Hilla lies the district between Euphrates and Tigris, which was in ancient times fertilized by the system of canals (see vol. i, pp. 112 *seqq.*), of which the lowest, the **Shatt en-Nīl,** runs E. from the ruins of Babylon to the neighbourhood of Kut el-Amara. W. of the Hilla Branch the country stretches away to the marshy ground of the great *khōrs* which lie along the Hindiyeh Branch, but there is always, even in the narrowest part, a considerable margin of ground comparatively free from flood. The Hilla Branch thus runs through country which with proper regulation of the water-supply ought to be, as apparently the greater part of it was until recent years, both fertile and populous. But the drying up of the river has done immense harm, and before the building of the 1914 barrage the condition of the country was becoming more and more desperate. Up to the Shatt Dighāreh there was apparently little cultivation except occasional patches of arable land and the date-groves round **Rumeitheh** and **Diwāniyeh.** The *shatt* itself watered a comparatively fertile area, but was an additional danger to the Hilla Branch, as it carried off much of the little water which came down it. Above the *shatt* there seems to have been at one time an almost continuous stretch of date plantations with populous villages right up to **Hilla**—at any rate on the l. bank—but the limit of these has been gradually receding until it is doubtful now whether it stretches much more than 10 m. below **Hilla.** The existence of the barrage and regulator should restore prosperity to the country on the Hilla Branch. But an efficient scheme of control is needed for the irrigation. Under existing circumstances this cannot be expected, and the gradual decay and waste of irrigation works is certain, unless a new régime takes the place of the old at an early date.

Land Communications.—See *Land Routes.*

The main T.L. (Basra—Hilla—Baghdad) runs from **Samāweh**

through **Diwāniyeh** and **Hilla** to **Museyib**: a branch line goes from **Hilla** to **Tawarīj**, and thence branch lines run to **Nejef** and **Kerbela.**

Administrative Divisions.—This region lies in the *Vilayet* of **Baghdad** and includes the following *Kazas*:—

1. The *Kaza* of Samāweh, which extends for some distance N. of Samāweh and includes Rumeitheh on the Hilla Branch.
2. The *Kaza* of Shāmiyeh, from the N. border of Samāweh W. of the Hindiyeh arm to the S. border of Hilla; it includes Shināfiyeh and Hamīdiyeh towns.
3. The *Kaza* of Diwāniyeh on the Hilla arm round Diwāniyeh town and the Dighāreh Canal on the Khōr 'Afej.
4. The *Kaza* of Nejef, including besides the town of Nejef the town of Kūfeh.
5. The *Kaza* of Hilla, on both banks of the Euphrates round the town of Hilla, and extending for some distance above the Dighāreh Canal to a short distance below Museyib. It is a *Kaza* of the first class.
6. The *Kaza* of Hindiyeh, on both banks of the Hindiyeh Canal from some distance above Kūfeh to a little way below Museyib. It includes the town of Kifl.
7. The *Kaza* of Kerbela, which includes, besides the town of Kerbela, Museyib and the oases in the desert to the W.

Inhabitants.—The country between Samāweh and Museyib is occupied by a complex mass of tribes, or more or less independent tribal sections, whose positions and relations cannot be exactly determined here. In general the inhabitants may be described as Shiah Arabs, cultivators and stock-farmers, living in tents, or in mud or reed villages often containing mud or brick towers which are the dwellings of sheikhs or places of refuge for the villagers in case of attack. The following account mentions only the more important of the tribal groups.

The **Khazā'il** are the principal, though not the only, inhabitants of an area which stretches approximately from Kūfeh to Samāweh through the intervening marshes, and includes both a portion of the adjoining desert to the S. and the region E. of the lower course of the Hilla Branch. Their more considerable sections are called **Mo'allim, Āl Bū Hasan, Lāmlūm,** and **Beni 'Aridh.** They are partly settled, partly nomad. The agricultural members of the tribe apparently used to dwell mainly in the neighbourhood of the Hilla Branch, but have probably for the most part been driven westwards in recent years owing to lack of water. These agricultural Khazā'il grow rice, barley, and wheat, but a large number of them follow the desert

life with their horses, sheep, and camels from January to June. The nomad sections are well mounted, and many Khazā'il are carriers and camel-dealers. Those who dwell in the marshes depend for locomotion, both in peace and war, on their *mashhūf* canoes. The Khazā'il are said to be good fighters though not naturally pugnacious. They levy a tribute from the **Anazeh** and Northern **Shammār**, to whom they are not well disposed, when these come to camp in their territory.

The **Shibil** tribe (estimated at 7,000 persons with about 1,000 horses) are generally allied with Khazā'il and hostile to Anazeh and Shammār. The Shibil live mainly in the Shāmiyeh *Kaza* (between the two branches of the Euphrates) near Ja'āreh and the Ghāmas district; and here they cultivate rice and other grains and breed cattle: but part of the tribe are nomads living in the desert W. of Kerbela town. Some of their sections have the reputation of being robbers. The **Ghazālāt** (2,000 fighting-men), mostly in the Nejef *Kaza*, are also allies of the Khazā'il.

The **Zeyyed** tribe (about 11,000 souls, rice-growers and cattle-breeders, possessing 1,500 horses) are apparently intermingled with Khazā'il in the Shamīyeh *Kaza*. The **Jebūr el-Wāwi** section of the Zobeid tribe are found in the Samāweh and Shāmiyeh *Kazas*, and also near Nejef. Other sections of the tribe are found in the neighbourhood of Museyib.

N. of Diwāniyeh in the marshes of the Dighāreh and the Khōr 'Afej are two groups of mixed tribes, known as the **'Aqra** and the **'Afej**. The former live in the Dighāreh villages on the Dighāreh Canal, and at the W. end of the Khōr 'Afej, while the 'Afej live in the collection of villages of the same name at the E. end of the *khōr*. These people are said to be courageous and independent, but constantly engaged in feuds and inclined to brigandage. They have few or no horses, and use *mashhūf* canoes for moving about the swamp.

Another community with a bad reputation for brigandage are the **Wisāmeh** (500 fighting-men) on the r. bank of the Hilla Branch between Hilla and Diwāniyeh.

The **Beni Hasan** (10,000 souls, 200 horses: about $\frac{1}{5}$ of the tribe semi-nomad) dwell for the most part N. of Kūfeh and W. of the Hindiyeh Branch in the *Kaza* of Nejef, though some of these sections are to be found E. of the Hindiyeh River. They are divided into numerous sections, more or less independent. Several smaller tribes (**Mawash**, **Qoreish**, **Beni Taraf**, **Budeir**, **Humeidāt**, and **Mauleh**) in the Shāmiyeh, Nejef, and Hindiyeh *Kazas* are closely associated with the Beni Hasan, as are the cattle-breeding **'Ayāsh**

(about 9,000), who live chiefly in the Shāmiyeh *Kaza*. The Beni Hasan are at feud with their neighbours the **Baraji** (400 fighting-men : Hindiyeh *Kaza*), and are variously reported as the friends or enemies of the tribe of **Āl Bū Fatlah**, an agricultural people numbering about 10,000, living mainly between Hilla and Tawarīj but extending also farther south into the Shāmiyeh district. The Āl Bū Fatlah are allied with the **Jalīheh** (about 3,000) in the *Kazas* of Diwāniyeh and Hindiyeh, and with the **Qarait** (1,500 fighting-men), a well-armed tribe of cultivators and cattle-breeders living W. of the Hindiyeh Branch, above and below Tawarīj.

The Hilla *Kaza* is mainly populated by the **Āl Bū Sultān**, a sedentary tribe, poorly armed, with few horses, some of whom are found in the *Kaza* of Nejef. They are said to be on bad terms with the **Juheish**, a much smaller group near Kerbela.

The **Āl Kināneh**, a small and quiet community W. of the Hindiyeh Branch between Suleimāniyeh village and the Abu Khasāwi branch of the Duweihīyeh Canal, are apparently of some importance, as several of the neighbouring tribes (e. g. the **Da'ūm** and **Āl Bū Samām**) are said to be dependent on them.

The **Mas'ūd** live on both banks of the Huseiniyeh Canal, and also on the Meshārab Canal, and possibly on the left bank of the Euphrates a little above Museyib. The bulk of the tribe live in reed or thorn huts, but the sheikhs own brick-built towers. They number about 7,000 souls, and have a good reputation for courage and generosity. They are agriculturists and graziers, owning buffaloes, sheep, cattle, and about 1,000 horses. Only the sheikhs were reported (1908) to possess modern firearms. They are generally at feud with the **Yasār** (8,000), a scattered tribe living partly near Hilla, partly E. of Kerbela. Both Mas'ūd and Yasār were before the war exempt from conscription for Turkish military service.

The powerful desert tribe of the **Anazeh** visit the neighbourhood of Kerbela for two months in the year, and some of the Northern **Shammār** seek pasturage at certain times in the country to the E. of the Hilla Branch.

A noticeable feature in the population of those towns in this region which are Shiah Holy Places is the number of **Persians**, who actually form the majority in Kerbela. See *Gazetteer of Towns*, Kerbela, Nejef.

These cities also contain about 3,000 **Balūchis**, who are said to have migrated from Balūchistan about 100 years ago, and some so-called **Barbaris**, who are believed to be of Afghan descent.

(i) HINDIYEH BRANCH.

The distances given below are quite uncertain. The latest map of the river, made to illustrate the course of the *Ishtar* in 1913, disagrees with the W.O. map even as to the positions of Shināfiyeh and Kifl. It does not appear to

Right Bank	Total distance Miles
	0
The river runs in a general WNW. direction to Shināfiyeh. Date plantations continue for some miles above Sāmāweh.	
	$2\frac{1}{2}$
The navigation channel follows the Shatt Khansār (see opposite), though it is very sinuous and presents considerable difficulties. Its width varies from 80 to 100 yds. It runs through marshes (**Khōr 'Uwaineh** to the N. and **Khōr Allāh** to the S.) and a number of side channels take off from it. Arab villages and forts are scattered along its banks. It rejoins the main branch of the Hindiyeh arm near the village of **Seyyid Masqūf** (or Sheikh Muskhur). Apparently about $\frac{1}{2}$ m. below its upper end is the site of an old dam.	5
Navigation channel rejoins main arm of Hindiyeh Branch.	50 ?
From the upper end of the Shatt Khansār to Shināfiyeh the channel is about 150 yds. wide, and navigation is reported not to be difficult.	
	$50\frac{1}{2}$
The river appears to be shallow at **Shināfiyeh** (less than $2\frac{1}{2}$ ft. was reported early in February 1912, just before the rise of the river). Apparently there is a bar at the entrance to the Bahr-i-Shināfiyeh.	63

be correct as regards distances, though in other respects it is probably a considerable improvement on the W.O. maps, which are based mainly on surveys of 1849-60.

For a general account of navigation see p. 148.

Intermediate distance Miles	Left Bank
0	**Samāweh.**
	Date plantations continue for some miles.
2½	Mouth of the **Shatt esh-Shināfiyeh,** the Hilla Branch of the Euphrates. (See HILLA BRANCH, below.)
2½	Lower end of the **Shatt Khansār,** an arm of the Hindiyeh Branch.
45 ?	Upper end of **Shatt Khansār.**
½	**Seyyid Masqūf** village.
	Near this place are the ruins of Old Shināfiyeh.
12½	**Shināfiyeh.** Pop. (1908) 3,500. This place is described as standing mainly on the l. bank of the river. The town, which is composed mainly of huts, has a bazaar of about 60 shops. Among the people of the place are said to be included most of the former inhabitants of Lāmlūm village (now deserted) on the Hilla arm of the Euphrates (see Introduction to this Route). Shināfiyeh is the head-quarters of a *Nahiye* of the same name in the Shāmiyeh *Kaza*, and is therefore the seat of a Mudir.
	Routes—
	1. To **Basra** (234 m.) *via* **Samāweh** (36 m.) on S. side of the Hindiyeh Branch. (See *Route* 12.)

Right Bank	Total distance Miles
	63½
Channel enters the **Bahr-i-Shināfiyeh.** In 1908 it was stated that the inhabitants of Shināfiyeh maintained, or had formerly maintained, a kind of primitive lighthouse at the southern end of the lake. This *bahr* is a large swampy area the present size of which it is impossible to determine exactly from the evidence available: it may be 10–12 m. from N. to S., and 9–15 m. broad. In October 1915 it was described as a large shallow lake. In 1908 it was said that the *bahr* was a lake from January to May, but was steadily silting up, so that during the other months the greater part of it dried up. The water is said to be almost undrinkable owing to the gypsiferous soil. The *bahr* is largely covered with reeds and is studded with small reedy islands. In the upper portion are several larger islands rising to some height, of which the principal are known as the **Tel Terumbah** and the **Qal'ah es-Sāqi.** Some of the islands contain Arab forts. On the E. lies an area liable to flood, through which runs the **Shatt er-Rumāhiyeh.** On the SW. the desert plateau runs close to the border of the marsh for 11 m. to a point where a large wadi runs into the *bahr* from SSW.: between it and the mouth of the **Wādi el-Khār** (or Umm Kusair) (2½ m.) lie the wells and palm-groves of **'Ain Biyār** and **'Ain Ederi.** About 2½ m. N. of the Wādi el-Khār are the village and palm-groves of **Rahbeh,** with a good spring in a date plantation about 2 m. to the W. N. of Rahbeh is a line of hills running NW. along the edge of the **Bahr-i-Nejef** with brushwood and pasturage.	65
Large *bellams* drawing 3–3¾ ft. can cross the *bahr* in h.w., except perhaps for some days after the flood has begun to go down, when the channels are badly silted up (see p. 465). In l.w. they have to tranship two-thirds of their cargoes to small *bellams.* Followed up-stream the course steered by the *Ishtar* in July 1913 lay apparently NW. from the entrance to the lake for nearly 3 m.; then somewhat W. of N.	

Intermediate distance Miles	Left Bank
	2. To **Diwāniyeh** (40 m.) on the Hilla Branch. (See section ii, below, m. 75½.)
	3. To **Nejef.** (See *Route* 12.)
½	Mouth of the **Shatt er-Rumāhiyeh,** a canal-bed which is apparently dry except in the flood season.
1½	

Right Bank	Total distance Miles
for about 8 m., then about NNE. for about 3 m., and lastly about E. for 6 m. to the mouth of the Shāmiyeh Channel. The main course of the river used to run in the westernmost or **Kūfeh** Channel, but this is silting up; and recent authorities recommend the navigation of the **Shāmiyeh** Channel.	
SHĀMIYEH CHANNEL	
The lower end of the **Shāmiyeh** or **Hamīdiyeh** Channel of the Hindiyeh arm is entered at a point about 6 miles east of the mouth of the Kūfeh Channel. It is described (1915) as being about 150 yds. wide, except in two places where the width is reduced to 50 yds. on both sides of an island. Apparently in July 1913 a depth of 4–5 ft. of water was found about 2 m. above the mouth, thereafter increasing to 5–7 ft. The channel is said to be easily navigable (in the flood season?) by steamers of the ordinary type found on the Mesopotamian rivers, but navigation is hampered by native irrigation dams, which are built out from the banks and have only a narrow fairway with a strong current. The banks are low and marshy with tall reeds here and there. Villages occur on the banks. *Tels* and Arab forts rise here and there above the plain.	85 ?
	103 ?
	105
Upper end of Kūfeh Channel.	127 ? 128

Intermediate distance Miles	Left Bank
20 ?	
18 ?	**Shāmiyeh** or **Tel Umm el-Bar'ūr** (?). The village was formerly the head-quarters of the *Kaza* of **Shāmiyeh,** but has now been abandoned by the administration on the ground that it is unhealthy: its place has been taken by Hamīdiyeh. If Shāmiyeh exists at all now, its population is very small.
2	**Hamīdiyeh,** now the head-quarters of the *Kaza.* It is said to contain 800 houses, 150 shops, 10 granaries, 3 khans, a Government *serai* and barracks, and has a bridge of boats. The river here is 5–6 ft. deep. Above Hamīdiyeh the channel leads through the marshes of the **Bahr Abu Nejm** past **Qal'ah 'Abbāsiyeh.**
22 ?	
1	**Kifl.**

Right Bank	Total distance Miles
Kūfeh Channel	
[Mileage calculated from entrance to Bahr-i-Shināfiyeh, m. 65. Distances very uncertain.]	
Entrance to the **Kūfeh** Channel from the **Bahr-i-Shināfiyeh,** reported to be about 6 m. W. of the entrance to the Shāmiyeh Channel. The Kūfeh Channel is said to be navigable only by small craft. It is narrow and sinuous.	82?
Ja'āreh, described in 1908 as a prosperous village, the property of the *Dā'irat es-Sanīyeh,* with about 1,500 inhabitants, some of whom are Persian Balūchis, and about 100 shops.	87?
Mouth of **Nahr Tājiyeh.** It runs SSW. between the **Bahr-i-Shināfiyeh** on the SE. and **Bahr-i-Nejef** on the NW. Several minor channels connect the **Nahr Tājiyeh** with the **Bahr-i-Nejef,** which is a large sandy depression liable to flood in spring. On the edge of the Bahr-i-Nejef, perhaps about 4 m. from the *nahr*, is (or was) the village of **Mohassein** standing in rice-fields.	88?
Abu Sukheir, fort and village, head-quarters of a rich tract of country known as **Mashkhab** belonging to the *Dā'irat es-Sanīyeh.*	89?
Mouth of the **Hamīdiyeh** Canal running to Nejef (see p. 417).	
Islands.	
From this point the channel runs NNW. for about 10 m. to a point immediately below Kūfeh. On the r. bank the channel is bordered by a long wedge of the desert plateau, on which Nejef stands.	
Kūfeh.	99
The river at Kūfeh is about 150 yds. broad, and is crossed by a bridge of 16 boats, each 30 ft. long, 10 ft. wide, and 4 ft. deep, with a roadway 8 ft. wide, and a hand-rail 3 ft. high on each side. In 1908 the bridge was reported to be in bad repair. There are two small wooded islands, one 200 yds. above, the other 150 yds. below, the bridge. About ¼ m. above the bridge the river widens to 300 yds. The greatest depth of the river at Kūfeh is near the r. bank, where a depth of 6 ft. may be found even in winter.	

Intermediate distance Miles	Left Bank
17 ?	**Tel As-sā'ī.** Some distance to the r. of the entrance to the Kūfeh Channel.
5 ?	
1 ?	
1 ?	
	Above this point on the l. bank lies the **Khōr el-'Abbāsiyeh.**
10	Date plantations.

Right Bank	Total distance Miles
Direction of river above Kūfeh, for about 9 m., is NW. Date plantations continue for some distance.	
Islands.	101
The river here narrows to about 80 yds.: the banks rise to 10 ft. above water. River takes a general N. direction. Lower mouth of **Nahr Abu Ru'yeh** (?), which is marked on a map corrected to January 1915 as running in a NNW. direction along the foot of the hills for 25 m., and then NE. for 7 m. to Hindiyeh (32 m.). (But see m. 153.)	105½
	107½
Village of **'Amrān,** described (1908) as 'a few Arab tents and a walled and fortified enclosure'.	109½
Baghdad—Nejef road here runs close to the r. bank (see *Route* 21 a).	110½
	113
	114½
HINDIYEH BRANCH (*continued*)	
[Mileage continued from Shāmiyeh Channel, m. 128.]	
Long island, or islands (?).	129
Fortified towers and reed hut villages of Beni Hasan Arabs lie from 1 m. to 4 m. from river.	
	133
Creek leading SW. to N. end of Khōr Beni Hasan ᵀ3 m. SW.	134
	135
	138

Intermediate distance Miles	Left Bank
2	
4½	
2	**Qal'ah 'Abbāsiyeh,** on the E. side of the Shāmiyeh Channel.
2	
1	
2½	Upper end of Shā niyeh Channel.
1½	**Kifl.**
1	
4	**El-Jāmi'** village.
1	
1	Large shallow *khōr*.
3	3 m. E., across *khōr*, **Birs Nimrūd,** on promontory on E. side of *khōr*; site of the great Babylonian city Borsippa, which flourished between 2000 B.C. and the time of Alexander. On summit of hill, 100 ft. high, rises a pointed mass of vitrified brick split down the centre, over 40 ft. high, about which lie other masses of vitrified brick, some as much as 15 ft. in diameter. This tower is according to tradition the 'Tower of Babel', but was in fact that of a temple of Nebo, called E-Zida. NW. of the tower is another ruin-mound, lower but more extensive, known as Tel Ibrāhīm Khalīl. A group of mounds stretches NE. for several miles in the direction of Hilla.

Right Bank	Total distance Miles
Course bends NNW. Width here and up to the barrage about 200 yds.	143
Head of **Shatt el-Mulla,** a large canal which within a few miles of its head is 40 yds. wide and 8 ft. deep. Not far from the river it throws off a considerable distributary called **Zibdīyeh,** or Zibdīyāt, which is about 12 yds. wide and 3 ft. deep. A little below the point of separation of these two canals there was in 1908 a village of the Qarait tribe, standing on the Shatt el-Mulla.	149
Tawarīj or **Hindiyeh.**	152
Head of **'Abd 'Auniyāt** Canal, identified on map corrected to January 1915 with the upper entrance to the Nahr Abu Ru'yeh (see note on Kūfeh Channel, m. 105½).	153
Āl Bū Sahweh village: 450 inhabitants; gardeners, cultivators, and boatmen.	154½
Mouth of **Duweihīyeh** Canal: about 25 yds. wide with banks 7 or 8 ft. high, 3 or 4 ft. of water in winter. A little S. of canal **Umm Jemāl** village: 400 inhabitants: cereals, dates, and melons. Near canal **Beni Sālih** village: 200 inhabitants: wheat and barley. On canal, N. of the Kerbela—Tawarīj route, villages of **Seyyid Jōdeh** (pop. 400) and **Beni 'Aufi** (pop. 100): wheat, barley, *māsh*, millet. On both sides of canal are Mauleh Arabs, who own date-groves and work as boatmen. This canal throws off a branch to NW. called **Abu Khasāwi,** which communicates with the swamps of **Suleimāniyeh,** a village 6–7 miles from the river consisting of 40 mud huts, and standing on a mound in country frequently flooded from the Duweihīyeh and other canals. The people own some buffalo, sheep, and donkeys, the last let for hire to pilgrims to Kerbela: some inhabitants work as boatmen when the country is flooded.	156
Mouth of **Meshārab** Canal, sometimes dry: bed 15 to 20 yds. broad, 10 ft. deep. Much water runs to waste through this canal and helps to flood the country round Suleimāniyeh. The substitution of rice for barley on the lands irrigated by it and the progressive enlargement of this mouth, which is unscientifically constructed, have resulted in a gradual increase of the damage done by this canal.	157
Old Hindiyeh Barrage, which practically blocks up-	163½

Intermediate distance Miles	Left Bank
5	*Khōr* recedes from river, running about 5 m. NE.
6	Tract of land known as **Mannāwiyeh,** watered by canal of same name, producing wheat, barley, millet, mash, and beans.
3	
1	
$1\frac{1}{2}$	
$1\frac{1}{2}$	
1	
$6\frac{1}{2}$	For a fuller description of the Hindiyeh Barrages and Regulator, see Appendix C.

Right Bank	Total distance Miles
stream navigation (see Appendix C).	
	$163\frac{5}{8}$
	164
	$164\frac{1}{4}$

(ii) HILLA BRANCH

See Introduction to this Route.

The Hilla Branch of the Euphrates parts from the l. bank of the Hindiyeh Branch at a point $2\frac{1}{2}$ m. above **Samāweh.** In the lower part of its course it is known as the **Shatt esh-Shināfiyeh.**

Mouth of **Hilla** Branch. Course runs NE.	0
T.L. apparently crosses river from l. bank to r. and runs NW. to **Imām Hamzeh.**	$\frac{1}{2}$
Date plantations cease.	1
Course runs ENE.	2
	11
Course runs in general direction NW. to **Imām Hamzeh** with numerous windings.	
	$12\frac{1}{2}$
	15
	20
Rumeitheh. Pop. (1908) 2,500. Gardens and date plantations.	27
River bends N.	$31\frac{1}{2}$
Abu Qawārīr village in date plantations. Ferry. About 80 houses (1908) inhabited by Beni 'Aridh (Khazā'il). Headquarters of a *Nahiye* of the same name. Above this point	$33\frac{1}{2}$

Intermediate distance Miles	Left Bank
	Brick minaret about 200 yds. above old barrage, a mound, the top being 50–60 ft. above ground-level.
$\frac{1}{8}$	Earth dam, 150–200 yds. wide, across old head of Hilla Branch. Old bed contained water in 1914.
$\frac{3}{8}$	**New Hindiyeh Barrage,** a straight brick dam 275 yds. long. It is provided with 36 gates or openings 9 ft. 10 in. wide, so that the height of the water held up can be controlled ; and there is a lock on the E. side 26 ft. 3 in. wide. A broad earthen dam was constructed at its western end to block the old channel.
$\frac{1}{4}$	New junction of **Hindiyeh** and **Hilla** branches.
0	
$\frac{1}{2}$	
$\frac{1}{2}$	Date plantations cease.
1	
9	Lower branch of **Shatt esh-Shināfiyeh** is marked on map as running S. from this point for $5\frac{1}{2}$ m. to join Euphrates at **El-ʿOthmān.**
$1\frac{1}{2}$	**Muwāserah** village.
$2\frac{1}{2}$	**Umm Dukkān** village.
5	**Dawālim** village. Rice cultivation in neighbourhood.
7	**Rumeitheh.** See opposite. Gardens, date plantations ; old stone fort.
$4\frac{1}{2}$	
2	

Right Bank	Total distance Miles
up to Diwāniyeh the villages were in 1908 mostly deserted, and the country unoccupied owing to the drying up of the Ḥilla Branch.	
	41½
	47½
Mud fort.	53
River runs in general direction N. to **Diwāniyeh.**	
Imām Nebi Medyūn shrine.	65
Above this point numerous small canal-beds.	
Date plantations begin.	74½
R. bank quarter of **Diwāniyeh.**	75½
General direction of course is WNW. for about 7 m.	77½
Course takes a general N. direction, with many windings: in the hollows of its curves the banks are covered with low tamarisk.	84½
Shatt er-Rumāhiyeh, dry water-course running in a general S. by W. direction to Shināfiyeh (see section i, above, m. 63½).	86
T.L. runs from this point direct NNW. to **Hilla.**	
Tower: 2 m. WSW. is **Tel Wannet es-Sa'dān.**	92
Shrine of **Mohammed bin 'Ali.**	94½
Mouth of old **Mahanwīyeh** Canal, which runs straight SW. into the **Bahr Abu Nejm** (about 8½ m.), is marked on map at this point.	
Shāmiyeh Canal running WSW.	97½
In this neighbourhood the villages and banks were in	105

Intermediate distance Miles	Left Bank
8	**Seyyid Hasan Abu Tabīkh** village.
6	**Lāmlūm**: deserted village.
5½	**Imām Hamzeh** village, taking its name from a shrine in the desert about 1 m. across river. Ferry.
12	
9½	Date plantations begin.
1	**Diwāniyeh.** Pop. 4,000 (1908), but then decreasing. Bridge of boats. In the neighbourhood of Diwāniyeh the average breadth of the river bed is 90 to 95 yds., and the deepest part is almost always within 10 ft. of the steep bank which borders the outside of curves. The height of the banks above the bottom of the river bed is 13 to 16 ft.
2	**Nahr Yusufīyeh** takes off from l. bank and runs in an easterly direction towards Fara, being continued, as the Shatt el-Khār, to the Butnijeh Lake N. of Nāsirīyeh. Before the drying up of the Hilla Branch this canal and its branches watered a large area of country. By 1903 it carried water only in the neighbourhood of its head, though it had then been recently deepened. It now seems to have water in the flood season throughout its length. As regards its navigability see p. 150.
7	
1½	
6	Shrine of **Imām 'Imrān** a short distance from bank.
2½	
3	
7½	Mouth of **Shatt Dighāreh,** a large canal. At its mouth

Right Bank	Total distance Miles
1903 almost entirely deserted and the Arab fighting towers were falling into decay.	
Imām el-Khidhr and **Imām el-ʿImrān** near this bank. In next 3 m. river bends NE., NW., and SW.	107
	109½
Course bends in general direction NNW.	111
Course bends from NNW. to a general direction W.	122
Occasional patches of cultivation remain between here and Hilla: there are also several water-cuts.	123½

Intermediate distance Miles	Left Bank
	it is about 70 yds. wide and of a considerable depth. It is reported navigable for country boats. It runs in a SE. direction for about 12 m. to a group of villages called **Dighāreh,** inhabited by a mixed Arab population. In the neighbourhood of these villages the canal breaks up into a number of channels which create a moist area capable of producing wheat, barley, and rice: in 1908 there were reed-hut villages here. A short distance farther on the waters recombine into a large reed-bearing marsh, called **Khōr ʿAfej,** running ESE. for 15–20 m. with an average breadth of 4–5 m. About 2 m. from the W. end is the large island of **Cherdāq,** which stretches almost from the N. to the S. bank, and in the W. part of the *khōr* are other smaller islands. At its lower end issue small streams which rapidly unite to form the **Shatt el-ʿAfej** (or **Mikhrīyeh**) near a collection of villages known as **ʿAfej** (see *Route* 20 b, m. 38). On the W. side of the **Khōr ʿAfej** lie some small villages with cultivation, and to the NE. of the lake, about 6 m. N. of **ʿAfej** village, are the extensive ruin-mounds of Nippur (now called **Niffūr**), an ancient Babylonian city which contained the sanctuary of the god En-lil, and flourished from about the fourth millennium to the seventh century B.C. It is now a group of broken mounds, the highest of which is a conical hill lying to NE., about 100 ft. high. Running through the mounds from SE. to NW. is the line of an ancient canal, a branch of the Shatt en-Nīl. Its course can apparently still be traced NNW. past sand-dunes and ruin-mounds for 30 m., till it joins the main channel of the Shatt en-Nīl some 32 m. E. of Hilla.
2	**Imām ibn Hasan** near this bank.
2½	Bed of **Nahr Hurrīyeh** marked on map as leading N. and ESE. for 11 m. to the ruins of Hurrīyeh.
1½	**Khaigan es-Saghir,** above bend mentioned opposite (see *Route* 20 b). In this reach are several canals, and fortified hamlets (deserted ?) in date-groves.
11	Course of ancient **Gades** Canal running NE. past shrine of **Imām Abu Dirbāsh.** Sand-dunes a few miles N. of river.
1½	About this point cultivation and date plantations apparently begin: numerous canals.

Right Bank	Total distance Miles
	125
Jerbū'iyeh shrine.	128½
Mouth of canal running SSE. for 13 m.	129
	132½
Delbeh village.	133
River bends NNW.	134
Several parallel canals running due S. at about ½ m. intervals.	136
River bends WNW.	138½
River bends N. by W. T.L. touches bank.	141½
Hilla. Bridge of 15 boats.	144
River bends NW.	146
River bends N. by E.	147
There are a few ruin-mounds on the r. bank.	
Island.	

Intermediate distance Miles	Left Bank
$1\frac{1}{2}$	Village of **Imām Hamzeh** about $\frac{3}{4}$ m. from bank.
$3\frac{1}{2}$	
$\frac{1}{2}$	
$3\frac{1}{2}$	**El-Husein** village.
$\frac{1}{2}$	
1	
2	**Es-Sa'ad** village.
$2\frac{1}{2}$	**Ed-Dulās** village.
	Nahr Dulās running ENE.
3	
$2\frac{1}{2}$	**Hilla,** l. bank quarter.
2	Canal running E. and SE.
1	Mounds and ruins of ancient **Babylon,** extending about $2\frac{3}{4}$ m. N. to the mound called **Bābil.** The ruin-mounds fall into three groups: the southernmost is known as **Tel 'Imrān,** with an outlying spur to S. called **Jumjumeh** ; the second, some distance to the N., is called **El-Qasr**; and the third, separated by an interval of 2,500 yds. of flatter ground containing a branch of the ancient **Nahr en-Nīl,** is now called **Bābil.** On the E. side of the first two groups are the traces of an inner wall running between NNW. and N. by W., from the S. end of which can be traced the remains of a larger encircling wall which goes ENE. for about 2,000 yds., then turns NW., and continues for nearly 3,500 yds. to the canal-bed immediately S. of Bābil. In the triangle formed by the inner and outer walls is marshy ground. The modern Hilla—Baghdad road runs through the ruins from S. to N., passing just E. of the remains of the interior wall. Excavations have been carried out for some fifteen years on all the mounds by German archaeologists. The ruins on the Tel 'Imrān are scattered and not prominent. El-Qasr contains remains of the great palace of Nebuchadnezzar (first half of sixth century B.C.). The site of the palace is an irregular square of about 700 yds., and masses of burnt brick of considerable height are still standing in the excavation-trenches. The mound Bābil stands by itself N. of the southern branch of the Nahr en-Nīl, and is protected on its N. and E. sides by a continuation of the city wall. It is a great mound of

Right Bank	Total distance Miles
	151½
River bends SW.	152
Tel ez-Zāwiyeh, eminence : village of **Qal'at Dā'ūd Āghā** at its foot. River bends NW.	154
River bends NE.	156
River runs in general NW. direction to the junction with the Hindiyeh Branch.	157
	160½
Junction with **Hindiyeh** Branch at **Hilla Regulator** (see Appendix C for description).	165

(iii) HINDIYEH BARRAGE TO MUSEYIB

[Mileage by Hindiyeh Branch resumed.]

	164¼
Head of the **Nahr Huseiniyeh** running SW. and WSW. for *16 m. to **Kerbela,** carrying the water-supply of that town. Regulator (1914) 200–300 yds. from its head, forming brick bridge passable for wheels. At 15 m. it is crossed by a brick bridge, in bad repair, known as the Pul-i-Sufaid : there are two bridges at Kerbela. The width of the canal at its head on the Euphrates was reported in 1908 to be only about 30 ft., but at about ¼ m. from the entrance it is increased to 45 ft. The completion of the new Hindiyeh Barrage may have secured a perennial flow of water in the canal, but in 1908 it was reported to be	167¼

Intermediate distance Miles	Left Bank
	unburnt brick about 70–75 ft. high, with sides about 275 yds. long, and is very conspicuous from the N.
4½	In this neighbourhood are mouths of the northern branches of the **Shatt en-Nīl,** the dry bed of a great ancient canal running in a general direction E. to the neighbourhood of Kut el-Amara (see *Route* 20 a).
½	About ¾ m. N. of the bend mentioned opposite rises the low broad mound called **Tel el-Kereini.** The Hilla—Baghdad road runs along its E. side: the T.L. Hilla—Museyib crosses it from SE. to NW. At its NE. corner by the **Khān Mahāwīl** the dry course of the ancient Babylon Canal, **Nahr el-Muth,** turns at right angles from E.–W. to S.–N.
2	
2	
1	NE. corner of **Tel el-Kereini** lies near river bank.
3½	**Nahr Mahāwīl** takes off from the l. bank and runs in E. direction, crossing course of Babylon Canal and Hilla—Baghdad road at **Khān Mahāwīl** (5 m.), and loses itself in low-lying ground a few miles farther E.
4½	
3	Hilla Regulator.

Right Bank	Total distance Miles
practically dry from June to November. The Huseiniyeh is a serious obstacle, for the banks are on an average 15 ft. high and descend very steeply to the stream, except near the numerous villages, where they are often ramped : at such places there are *quffehs* for men and baggage, but transport animals must be unloaded and swum. In some parts deep, narrow, unbridged distributaries make the l. bank difficult for mounted men. There are several solidly built and fortified houses on the banks belonging to sheikhs. See pp. 349–350.	
Island.	$168\frac{1}{4}$
Date plantations begin.	$168\frac{3}{4}$
	$170\frac{1}{4}$
Museyib.	$172\frac{1}{4}$

ROUTE IV D

MUSEYIB TO FELLŪJEH

Authorities :—Lorimer, *Persian Gulf Gazetteer*, 1908; *Military Report on the Region between Baghdad and the Persian Gulf*, 1911 ; *Field Notes on Mesopotamia*, 1915 ; and other information.

River and Neighbourhood.—From Museyib, Fellūjeh lies ᵛ47 m. NW. : the distance by river is 71 m. The river runs in a general direction NNW. to the neighbourhood of **Imām Hamzeh,** then WNW. with many windings to **Fellūjeh.** The river is usually from 150 to 300 yds. broad : the height of the banks above the water in the months of low river is about 10 ft., but in flood they are liable to be overflowed. Between **Khān Maqdam** and **Fellūjeh** attempts have been made to confine the river by means of earth embankments about 8 ft. wide at top and 20 ft. high, revetted on the side towards the stream ; but these have not proved very effective, and occasionally burst. The undulating ground occasionally requires levees 15 to 18 ft. high, which to be efficient would have to be carefully designed.

The depth in this stretch has been reported to be $3\frac{1}{2}$–$6\frac{1}{2}$ ft. at low water, and 18 ft. in flood : velocity (in January) 3 ft. per second.

Steamer-navigation would probably become easier with time, as the channel was scoured out. See Appendix C.

On the l. bank is a fairly well cultivated plain producing wheat, barley, and millet, traversed by several canals which still carry

Intermediate distance Miles	Left Bank
1	
½	
1½	
2	Date plantations begin.

water, of which the principal are the **Iskanderiyeh,** the **Latīfiyeh,** the **Mahmūdiyeh,** the **Ridhwānīyeh,** and the **Abu Ghoreib.** But between the **Iskanderiyeh** and the **Latīfiyeh** canals, and again near Fellūjeh N. of the **Abu Ghoreib,** are plateaus of shingly and sandy desert. The Euphrates and Tigris are during this section from 25 to 45 m. apart, and the intervening 'Mesopotamia' is intersected by traces of the ancient canal system. The most important place in it is **Mahmūdiyeh** on the Museyib—Baghdad road, ♈14½ m. E. of the mouth of the Mahmūdiyeh Canal (see *Route* 21 a, m. 21).

The r. bank is occupied by a broad plateau of salted desert of gypsum and marl, the SE. corner of which lies just above **Museyib.** This plateau extends to the **Habbāniyeh** Lake, ♈50 m. NW. of Museyib and 11 m. WSW. of Fellūjeh (see vol. iii, *Route* IV E): on the W. it reaches a broad depression, which was apparently an ancient reservoir, about ♈26 m. W. of Museyib. On the W. side of this depression lie the populous cultivated tracts of **Shifātheh** and **Rahaliyeh** (see *Route* 17). See further Appendix C.

Land communications.—Mesopotamia is traversed in this section by the great road running N. from **Museyib** to **Baghdad** (see *Route* 21 a). There is also a route from **Museyib** to **Fellūjeh** along the l. bank (see *Route* 18), which at **Khān Maqdam** apparently throws off a branch track to join the Fellūjeh—Baghdad road (*Route* 22) at **Nuqtah.** For Decauville railway from Ridhwānīyeh to Baghdad see p. 370. T. L. follows the Museyib—Baghdad road.

Inhabitants.—The country on the l. bank between the river and the district of Shifātheh is apparently uninhabited.

On the l. bank in the country immediately above Museyib are some sections of **Mas'ūd** and a tribe called **Janabiyyīn,** said to number about 10,000, mostly Sunnis. They are reputed to be brave and generous, and live as agriculturists, as watchmen, and sometimes as thieves. A considerable number of them are said to be settled in Baghdad. The Janabiyyīn in the Museyib district are allies of the Mas'ūd. To the N. and E. of the Janabiyyīn, the country (*Kaza* of Kazimain) is occupied by a number of clans, much intermingled, of which some are sections of the **Zobeid** (as the **'Ugeil** and **'Azzeh,** who are Sunnis), others divisions of the **Beni Rabī'ah** (as the **Qoreish, Kawām,** and **Tamīm**). The district

Right Bank	Total distance
	Miles
	0
Direction of channel N. by W.	
The land on both sides of the river up to Imām Ibrāhīm el-Khalīl is cultivated and there are many gardens, walled and unwalled, of dates, oranges, pomegranates, and figs.	
Island.	1½
End of date plantations.	4
	5
River bends NW.	5½
Desert plateau approaches river.	7½
River bends NNW.	8
Small island.	9½
River bends SW. and W.	11½
River bends N.	13
	15½

is sometimes visited by the **Dilaim,** from the region between Baghdad and Hīt, who are allies of the Zobeid (see also Introduction to *Route* V). Near Khān Maqdam are the **Zoba'**, a partly Sunni tribe, on whom the **Sha'ar** and **Shīti** in the Abu Ghoreib district are dependent. These subordinate clans have no sheikhs of their own. The Sha'ar are Sunnis. This tribal group of Zoba' and their dependants is said to be numerous.

The strength of the Sunni element in this district is to be noticed. It is believed that the Sunnis considerably outnumber the Shiahs in the population of the Kazimain *Kaza.*

Much of the cultivable land on the l. bank is owned by the *Dā'irat es-Sanīyeh,* whose estates are to be found along the **Iskanderiyeh** and **Abu Ghoreib** canals, as well as on the **Mahmūdiyeh.**

Intermediate distance Miles	Left Bank
0	**Museyib.** Museyib—Baghdad road (*Route* 21 a) and T.L. leave bank and run NNE. and N. **Museyib** Canal, running E. and crossing Museyib—Baghdad road, and at 6½ m. Hilla—Baghdad road (*Route* 21 b).
1½	
2½	
1	End of date plantations: canal running E.
½	**Khān Iskanderiyeh** on Museyib—Baghdad road (*Route* 21 a) is here ϒ5½ m. ENE. It is a village of 50 mud houses with khan and several brick enclosures. Cultivation is being rapidly extended, especially E. of the village, by the *Dā'irat es-Sanīyeh*: live stock is plentiful.
2	
½	
1½	Shrine of **Imām Ibrāhīm el-Khalīl.** Khān Iskanderiyeh is visible from this point.
2	
1½	
2½	Mouth of **Nahr Iskanderiyeh,** which flows ESE. to **Khān Iskanderiyeh** (ϒ10 m.) on Baghdad road. The canal belongs to the *Dā'irat es-Sanīyeh.* The country beyond this for ϒ5 m. is a low desert plateau, similar to that on the r. bank. **Imām Khidhr Iliyās:** a mosque with date-palms and a few mulberry-trees: above the mosque a wood of tamarisk

Right Bank	Total distance Miles
Break in desert plateau about 5 m. broad at mouth, through which in flood Euphrates overflows in SW. direction.	17
River bends SW.	21½
River bends NW.	23½
About this point the desert plateau reapproaches the river.	
Abu Fayyadh shrine.	26
River bends sharply E.	27½
River bends N. by W.	28½
	29
River bends W. by N.	29½
	30
River bends NNW.	31½
River bends W. by N	33½
River bends NE.	34½
	35½
River bends WNW.	36
	36½

Intermediate distance Miles	Left Bank
	and poplar. The neighbouring Arabs are **Mas'ūd.** Banks here rise about 10 ft. above the level of the river (mean water ?).
1½	
4½	Patch of desert ends.
	Latīfiyeh (or **Abu Dibs**) Canal (dry in winter ?), running generally ESE. and crossing the Baghdad road (about *15 m.) immediately above **Khān el-Bir** (*Route* 21 a, m. 26).
	About 1 m. NE. of the lower course of Latīfiyeh Canal lies the southern end of a large marshy area stretching for 11 m. NW. parallel to the general direction of the river.
2	
2½	
1½	
1	
½	Mouth of **Mahmūdiyeh** Canal. It is crossed near its head by a brick bridge without a parapet, carrying Museyib—Fellūjeh road (*Route* 18) about 11 ft. wide. Bed of canal is 12 ft. wide. It apparently flows 8 m. SE. along the southern end of the marshy area (see m. 21½), then flows NE. and E., crosses the Baghdad road at *15 m., and may reach the Tigris. It was reported (1908) to flow for eight or nine months in the year, irrigating fields of wheat, barley, and millet. This canal, like the Iskanderiyeh, is the property of the *Dā'irat es-Sanīyeh.*
½	Museyib—Fellūjeh road runs close to river bank between it and dry bed of an ancient canal.
½	**Tel Niheh** close to river bank.
1½	
2	
1	
1	Head of old canal leading SSE. and bordering edge of marshy area (see m. 21½).
½	Museyib—Fellūjeh road runs between the bank and **Ridhwānīyeh** Canal.
½	**Imām Hamzeh,** ½ m. N. of bank on the Ridhwānīyeh Canal (see m. 61 below).

Right Bank	Total distance Miles
	40
The r. bank is here steep; stream nearly 200 yds. broad.	
River bends SW.	
River bends NW.	42
	44
River bends W.	46½
The river here curves to the SE. round a long, narrow hook-shaped promontory, and after 8½ m. reaches a point a few hundred yards distant from the beginning of the loop.	49½
River leads N. by W.: desert plateau recedes from bank: at its most distant point it is 4 to 5 m. away.	58
	61
River bends SW.	62½
River bends NNW.	63½
River bends WSW.	66

Intermediate distance Miles	Left Bank
3½	**Khān Maqdam** (or Mijdam). No permanent habitation, but occasionally a collection of tents of the **Zoba'** tribe. Goods from Hīt are sometimes deposited here by boats for removal to Baghdad by canal. The l. bank is here shelving and very sandy. There is a small wood, about ½ m. long, of poplar surrounded by a belt of tamarisks, said to be the property of a Baghdadi. A track apparently runs from here to join the Fellūjeh—Baghdad road (*Route* 22) near **Nuqtah,** ϒ10 m. NNE.
2	
2	
2½	At this point **Ridhwānīyeh** Canal is close to the bank.
3	The Decauville railway from the Euphrates to Baghdad is described as starting from Ridhwānīyeh. See p. 370.
8½	
3	Mouth of the **Ridhwānīyeh** Canal, which runs ESE. roughly parallel to the general direction of the river past **Imām Hamzeh** (ϒ14 m.) to a point (ϒ16½ m.) where it bifurcates, and after a few miles both branches lose themselves in the desert. For the first 17 m. of its course it apparently runs between the dry beds of two ancient canals.
1½	
1	
2½	Mouth of the **Nahr Abu Ghoreib.** Close to its head it is crossed by a strong brick bridge with a roadway 10½ ft. broad (Museyib—Fellūjeh, *Route* 18): the bed-width of the canal is here about 30 ft. and it runs in a cutting, 40 ft. deep, in a general SE. direction for ϒ12 m., where it is about ϒ1½ m. N. of the Ridhwānīyeh Canal, then NE. for 9 m., then ESE. and ENE. for ϒ11 m., where it seems to lose itself at a point ϒ4 m. WSW. of the Tigris opposite Qarāreh, in the neighbourhood of an eminence named **Tel Aswad.** From the point (ϒ12 m.) where it turns NE. it follows for ϒ9 m. the course of the ancient Sarsar Canal. Near this canal, about †15 m. from Fellūjeh, apparently on the edge of the desert plateau to the N. of its course, is

Right Bank	Total distance Miles
River bends NNW.: small island near r. bank.	67½
	71

ROUTE V

THE NAVIGATION OF THE SHATT EL-HAI (SHATT EL-GHARĀF)

Authorities :—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Routes in Arabia*, 1915, no. 193.

The Shatt el-Hai, as it is usually called by Europeans, though the local Arabs are said to know no other name for it than Shatt el-Gharāf, runs from the Tigris at Kut el-Amara in a S. by E. direction, and is connected with the Euphrates about 5 m. below Nāsirīyeh by a succession of canals known as the Umm Sakhal, Umm Jemāl, Abu Helah, Muhsin, and Sadanawīyeh.

The current in the channel runs in general from the Tigris to the Euphrates, but the difference between the levels of its upper and lower ends is inconsiderable, and it is said that floods in the Euphrates for a time reverse the current in the lower reaches.

From the lower course of the Shatt el-Hai two large canals drain off a large volume of water SE. to the Hammār Lake. One of these, the Shatt el-Beidhā (or Beda'ah), leaves the Shatt el-Hai about 2 m. above the town of Shatret el-Muntefiq. The other, the Nahr Hamzeh or Shatt el-Ibrāhīm, branches off about ~20 m. below Shatreh at the village of Hamzeh.

Navigation.—In normal years there is no through water-route from Nāsirīyeh to Shatreh. In 1915, however, owing to exception-

Intermediate distance Miles	Left Bank
	a station of the *Dā'irat es-Sanīyeh*, which contains 2 large walled khans and 2 smaller ones, which would together accommodate 400 men and 200 horses. They stand on a high, dry, and gravelly site. There are store-houses for grain in this place. The surrounding country is cultivated, and cut up by small canals, most of which flow from the Nahr Abu Ghoreib.
$1\frac{1}{2}$	On l. bank in this reach is the edge of a high pebbly desert, which lies between the Nahr Abu Ghoreib and the Nahr es-Saqlāwiyeh on the N. and stretches E. for about †14 m. to the neighbourhood of **Nuqtah** (*Route* 22, m. $23\frac{1}{2}$).
$3\frac{1}{2}$	**Fellūjeh.**

ally high water, the Turks were twice able to send convoys of small *bellams* through by the Umm Jemāl Canal: this was possible only for about 3 weeks. The only reliable through route from the S. is by the Shatt el-Beidhā from the Hammār Lake. This is practicable for large *bellams* from December to July. In 1915 three motor-boats were brought down this canal, but with considerable difficulty and much local assistance. In the high-water season it expands into a wide *khōr*, and its overflow fills numerous parallel side channels.

The Nahr Hamzeh is navigable by small *bellams* from December to July.

Normally in the high-water season large *bellams* pass up the Khōr Huseiniyeh in the flood season from the Euphrates to the NE. limit of the Khōr (about 6 m. from Suweij).

From Suweij to Abu Mahau the Shatt el-Hai (here called the Shatt esh-Shatreh) is about 12 ft. broad and about $2\frac{1}{2}$ ft. deep in the high-water season. It is dry, or at least useless for navigation, in low water (? August to February).

From Abu Mahau to Kut el-Amara the Shatt is navigable by steamers of $4\frac{1}{2}$ ft. draught from February to June. During July it is passable, in normal years, for small *maheilehs* or medium-sized *bellams* with a maximum draught of about $2\frac{1}{2}$ ft. It becomes passable for these craft again about November.

In 1915 (an abnormal year) medium-sized *bellams* could still pass in August, there being a minimum of 2 ft. as late as the 20th of that month. For conditions in 1916, with reference to fords, &c., see *Route* 19 a, Appendix.

The Banks.—The country through which the Shatt el-Hai passes is said to be fairly prosperous, at any rate between Nāsirīyeh and Hai, and there are many patches of cultivated ground along the banks, irrigation being carried out by means of water-lifts. Beyond the fringe of cultivation desert with patches of marshland stretches away on either side.

Inhabitants.—The Shatt el-Hai in the greater part of its course runs through the territory of the Muntefiq and the section and dependants of that tribe. These include the Beni Rishāb to the W. in the neighbourhood of Sheikh Khidhr and the Beni Hāshim round Qal'at es-Sikkar, a small tribe which according to one account is to be identified with a section of the Qoreish from which the Prophet came. In the neighbourhood of Kut el-Amara are found the Beni Rabī'ah, the Shatt forming the boundary between the Ma'īyeh section on the W. and the Serai on the E. In winter some of the Shammār Tōqah descend to the region W. of Kūt el-Hai, and so come into conflict with the Muntefiq.

(For the land route from Nāsirīyeh to Kut el-Amara along the Shatt el-Hai and the towns and villages on the latter see *Route* 19 a, and for routes connecting the northern part of the Shatt with the Tigris below Kut el-Amara see *Routes* 19 b.)

LAND ROUTES

THE REGION OF THE SHATT EL-'ARAB

ROUTE 1

FĀO—BASRA (68½ M.)

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; Route Report of December 1913; *Field Notes on Mesopotamia*, 1915.

This route runs beside the telegraph line, within two miles of the r. bank of the Shatt el-'Arab, between the date-groves and the desert. The date-groves are generally within a few hundred yards of it, on the right. Before the present war it was regularly used by the inhabitants of this region for going to and from Basra, on foot or on horseback, but it was not used for the transport of merchandise, which followed the river route. There was then a section of the route, from Fāo telegraph office to Ma'āmir (see below, m. 0–m. 6), which presented difficulties to wheeled transport; but beyond Ma'āmir the road was reported excellent the whole way, except in wet weather or after floods, when for as much as a month at a time it might become too soft for carts.

The edges of the date-gardens are throughout bounded by embankments, which would provide good cover for troops. The belt of trees varies from 2 m. to a few hundred yards in breadth.

The desert provides good camping-grounds everywhere in the dry season. In the high-river season it is flooded, but camp could always be pitched among the palm-trees, though the ground would be damp.

Further information on most of the places mentioned below is given in *Route* I A.

Besides this track, which is described below, there are said to be two others between it and the river. These are:—

(i) A track leading from village to village called *Wasti* or 'Inter

mediate'. This one is nearer to the Shatt el-'Arab than the main route, and it is shaded throughout by date-groves, but its course is winding, and it is poorly provided with bridges, many of the numerous creeks and deep irrigation trenches encountered being spanned only by a single date-log or crossed by means of ferry-boats.

(ii) A third track, known as *Hadar* or 'Lower', runs between Wasti and the river bank, and appears to be the most difficult and discontinuous of the three.

Each village stands on a creek generally providing good and plentiful water. There are no wells, but water is always easy to obtain from the creeks or the river. The banks would generally require to be ramped to enable animals to get to the water's edge. Near the sea, water should be taken with the falling tide, especially when the river is low.

There is much dry date-palm wood for fuel. Plenty of short grass inside the date plantations for fodder. Lucerne and barley are extensively grown, and, in places, rice. Outside the date plantations there is no grazing except in spring for sheep. Large quantities of dates, and a little straw and barley at hamlets. Meat generally abundant; fair supply of milk. A few donkeys and indifferent horses in many hamlets. A considerable number of boats could be collected.

Miles from Fāo	
0	**Fāo.** For description see *Route* I A, m. 4½. The route leaves Fāo in a general NNW. direction, striking away from the river through date-groves to the desert. From near the fort, 4 m. below the telegraph station at Fāo, to Ma'āmir, about 6 m. above it, a new embankment has been made to keep out the salt water which floods the desert to the W. Horses and men can go along the top of this embankment, but wheeled transport would have to keep to the W. side of it on desert soil, and this is generally bad going for wheels, as it is at this point a salt mud-flat which never dries and is flooded at high tides.
6	**Ma'āmir** tract. In this region and in the Dawāsir district (see m. 18 below) there are numerous empty villages about 400 yds. from the date-groves. Their defensible village-walls still remain. They are 90–100 yds. square.
7	**Ma'āmir,** Sheikh Naghaimish's village. Track is now over dry, hard desert, except in wet weather, and after high tide in spring when the river is in flood: it is then very boggy. The route runs just behind the date-groves.

Miles from Fāo

Hamlets are met with every half-mile or so in the date-groves.

10 **Mukhrag** village. In December 1913 this point was reached from Gatah (see under m. 35) in 8 hrs. by a party on horseback with pack animals. The latter part of the way was very soft going owing to rain and inundations. A few creeks run about half a mile into the desert, but they can easily be turned.

18 **Dorah (Sālih bin Ibrāhīm)** village; milk, a few sheep and chickens. The going behind Dorah was found in December to be very soft and difficult owing to the flooding of the land W. of the date-palms for irrigation purposes. The ground was to some extent flooded in the same way elsewhere in this region.

The route now enters the **Dawāsir** district (see above under m. 6), and traverses the **Faddāqīyeh** tract, in which is the village of **Kūt el-Khalīfeh.**

Route then traverses *Dā'irat es-Sanīyeh* land.

26 **Dawa'ib (Deweb ibn 'Ammar?).**

General direction of route NW.

27 Route has island of Ziyādīyeh on r. beyond the date plantations for 6 m.

34 **Khast** village; 40 huts, some date-palms. Country hereabouts barren on the whole.

35 **Seihān** Creek. Beyond it for 2½ m. is the tract of **Sanīyeh,** with scattered huts and valuable date-palms. In this tract is a place called Aradeh, which affords a good camping-ground (reported to be 'the only good spot' found between Fāo and Basra by a party which went over the route in 1908). The ground is firm and dry, and there is plenty of lucerne in the neighbourhood. A clear view is obtained across the main channel of the Shatt el-'Arab to Haji Salbuq Island.

Route now traverses the tract of **Gatah** with 7 hamlets. The islands of Haji Salbuq, Bariyeh, and Gatah lie off this tract. This place was reached in 8 hrs. by a party on horseback with pack animals coming from Sabīliyat (see under m. 57) in December 1913.

42½ Southern entrance of the **Mutawwa'** Creek, dividing the tract of Gatah from that of **Ruweis,** which is now entered. It extends inland for 1½ m.

43 District of **Umm el-Gharāb,** also bounded by the Mutawwa'

Miles from Fāo	
	Creek, here full of fish-traps, and with the hamlets of Bedr, Rasbān, and Kilāl on its banks.
44	Route traverses district of **Mutawwa'** with 5 small hut villages.
44½	The embouchure of the Kārūn River is here to r. of the route on the opposite side of the Shatt el-'Arab. On the Kārūn, and on its r. bank at 1¼ m. from its confluence with the Shatt el-'Arab, is the town of Mohammareh.
45½	Northern end of the **Mutawwa'** Creek, beyond which is the village of **Zain,** consisting of 100 huts and situated opposite Umm er-Rasās—on Umm el-Khasāsif Island. There are 6 or 7 other villages in the tract of Zain.
	Near Zain is a line of sand-hills 10–15 ft. high running nearly N. and S. at a distance of about 1 m. from the river.
	Route goes WNW.; at first through the tract of Zain. It then enters **Fayyādhi,** a tract subtended throughout its length by the island of Umm el-Yabābi, and containing 5 hut villages.
47½	Route enters tract of **Baljānīyeh,** opposite which are the N. end of Umm el-Khasāsif Island, the island of Shamshamiyeh, and S. end of Taweileh Island.
51¼	Route traverses tract of **Abu'l Fulūs,** containing a dozen small villages. The creek of Abu'l Fulūs is large, and runs towards the Khōr 'Abdallah.
52¾	Route goes through tract of **Abu 'Ibgai**; 8 or 9 hamlets.
54¼	**Abu'l Khasīb** Creek with town of that name on its N. bank, 2 m. from the creek mouth. For Abu'l Khasīb town (pop. 12,000) see *Route* I A, m. 58¾.
55¼	**Lebāni** village, pop. 350; 3 mud and brick houses and some huts.
56	**Nahr Khos** village, 2 m. up creek of the same name; 100 yds. on hamlet of **'Abdul Hamad,** 70 inhabitants, also a large well-built house.
57	**Abu Mogheireh** village, pop. 4,000, 2½ m. up a creek which joins the Shatt el-'Arab near **Sabīliyat** village (pop. 4,000). (Sabīliyat was reached in 4½ hrs. from Basra by a party on horseback with pack animals in December 1913.) Just above here is **Sangar** village, pop. 1,300; several well-built brick and mud houses.
58¼	**Yahūdi** village and creek. Nameless tomb near mouth.
59	**Hamdān es-Saghīr,** pop. 100.

Miles from Fāo	
60¼	**Fejat el-'Arab** on **Hamdān** Creek, pop. 450. Town of **Hamdān** (pop. 11,000), 2½ m. up same creek. See *Route* I A, m. 63¾.
60¾	**Yūsifān** hamlet. 600 yds. above Yūsifān, settlement of **Beit No'mān** with a large mansion.
62½	**Moheijāran** village, pop. 1,500.
63½	**Mahaulat ez-Zoheir** village, pop. 200.
65½	**Sarāji** village, pop. 2,000. Half a mile above here is the **Barādhīyeh** Creek with hamlet of same name 1 m. up it; pop. 600.
67	**Khōrah** village, 2 m. up creek of same name, 4,000 inhabitants; about 30 brick houses.
68½	**Basra** (British Consulate).

ROUTE 2

BASRA—KURNA (43½ M.)

Authority:—Force 'D' Route Report, Serial no. 4 (from Reports of 1915, 1916).

This route is practicable throughout for all arms except during the high flood season (April, May, and June). During the greater part of these months considerable portions of the road up to the neighbourhood of Steamer Point (see under m. 37) are liable to be flooded. Pack transport could move over the road in normal years up to about the middle of April. Beyond Steamer Point there is an embanked road usually above flood-level, though it was under water in the floods of 1916. After rain the road becomes in parts very heavy and difficult for wheeled traffic.

The following report refers only to the period of the year during which the road is normally open, *i.e.* July–March inclusive, except where otherwise stated.

The road crosses five bridges (m. 4, 6, 30, 37, 42), all of which are capable of carrying field guns. There are also a few shallow creeks, the sides of which need ramping for wheeled traffic.

For conditions of river-transport see *Route* I B. From Gurmat 'Ali (m. 3 below) to the bend of the river about 5 m. below Nahr 'Umr (*Route* I B, m. 16¾), the bank is of shelving mud stretching 20–30 yds. from the water, and the disembarkation of stores is difficult. On the remainder of the route good landing-places are easily found.

A T.L. (two wires on iron tubular posts) runs near the road the whole way.

Water is good and plentiful from the Shatt el-'Arab and the creeks flowing out of it. The marsh water is generally brackish and undrinkable.

Dates, eggs, chicken, sheep, grain, milk, and wild duck can be bought in small quantities from villages *en route*. There is a certain amount of scrub, suitable for cattle-grazing and fuel, to the W. of the road.

There is unlimited camping space except during the flood season (March–June inclusive), when the marshes run close alongside the road, or actually flood it. So long as the road itself is not closed by floods, enough dry camping space can be found for at least one brigade of infantry. The camping-ground at Steamer Point, though usually above flood-level, was under water May–July, 1916.

Miles from Basra	
0	**Basra.** The starting-point is about 1 m. W. of Makina-malsus (at the junction of the Baghdad (?) and Ashar roads). General direction to 'Abd el-Latif is NNW. The road, which lies over open desert, is good going during the dry season, but becomes heavy after rain. On the r. of the road is a grove of date-palms stretching down to the river.
¾	Cross an irrigation *bund* about 10 ft. high by an easy gradient. From here the Magil road branches off to NE.
3	Road approaches **Gurmat 'Ali**, which lies in the angle between the Shatt el-'Arab and the New Euphrates Channel. E. of Gurmat 'Ali along the bank of the Shatt el-'Arab is a line of 12 brick-kilns, 15–25 ft. high.
4	Cross the mouth of the **New Euphrates** channel by a bridge of tubular pontoons, 200 yds. long. The northern section of the bridge can be swung open to allow boats to pass.
	Between the road beyond the bridge and the Shatt el-'Arab is another line of brick-kilns, where a large number of bricks are available.
4½	**'Abd el-Latif** camping ground, consisting of two rectangular sites, one on each side of the road. Water is good from the Shatt el-'Arab. The best landing and watering place is just S. of the brick-kilns mentioned under m. 4, but the approaches are difficult owing to mud.
	From here the general direction to Nahr 'Umr is NNW. The road at first runs nearly N., following the line of the

Miles from Basra

Shatt el-'Arab but keeping to the W. of the cultivated area. It passes close to a few reed-hut hamlets, but no supplies can be counted on. Up to m. 6 the road is heavy and difficult for wheeled traffic.

6 **Miyādīyeh** canal, crossed by a trestle bridge 180 ft. long. From here the road lies over desert and is good going in the dry season, but becomes heavy after rain: see also m. 6½.

6½ From this point for about ½ m. the floods as they rise approach the road from the W. and eventually make it impassable.

7½ **Limshan** mounds, standing about 10 ft. above the plain.

10 Road bears NW., keeping farther from the river. E. of this point and close to the river is a high building affording a good observation post.

12½ A long mound lying ¼ m. E. of the road, and standing 5 ft. above the plain, is passed.

15½ Road again approaches the cultivated river belt, passes within ¼ m. of several brick-kilns, and bears W. by N. to Nahr 'Umr camping-ground.

16 From here to Nahr 'Umr the ground is sandy and heavy.

17 **Nahr 'Umr** camping-ground, lying N. of road, between it and the river, and about 300 yds. down-stream of an isolated group of 6 date-palms. SW. and W. of the camping-ground are several mounds standing about 10 ft. above the plain. Good water from the Shatt el-'Arab, to which the approaches are easy. *Maheilehs* can come alongside opposite the camping-ground.

General direction from here to Shāfi, NW. Road follows course of the Shatt el-'Arab, keeping about 1 m. from it. It is passable by all arms; it traverses a mud plain, which in dry weather is good going, but becomes slippery and heavy after rain. A few water-cuts are crossed, which need ramping for heavy traffic.

For 1 m. after leaving camp the road is heavy and sandy.

19 Cross a creek, which in the flood season has about 2 ft. of water in it, and needs ramping for wheeled traffic.

23 For 1 m. from this point some mounds standing about 20 ft. above the plain are passed on either side of the road. As the floods rise in March the water approaches to within ½ m. of the mounds on the W. of the road.

Tomb of Suleimān-bin-Dāūd is passed, lying about 1½ m.

Miles from Basra	
	W. of the road. On the E. of the road is **Deir** village. As the floods rise in March they approach the road between Deir and Yazduk.
27	**Yazduk.** Here the road passes between some low mounds. The two telegraph poles where T. L. crosses the Shāfi Canal are visible from here. Immediately N. of Yazduk are two canals which need ramping.
28	Pass low mound.
29½	Broken ground for about ½ m.
30	Cross the **Shāfi** Canal by a boat-bridge 50 yds. long, suitable for all arms except heavy artillery.
	Camping-ground about ¼ m. N. of the bridge, just beyond two brick-kilns about 25 ft. high. Water from the Shatt el-'Arab, to which the approaches are easy. Good landing and watering place opposite the camp.
	General direction from here to Kurna, NW. Road is passable for all arms. In dry weather going is good, but it becomes heavy and difficult for wheeled transport after rain.
	For 4 m. road runs within ½ m. of the river bank.
34	Road bears away from the river and runs direct to Kurna.
34½	Road crosses a shallow creek containing a little water in the flood season. The banks need ramping, but otherwise the creek is no obstacle.
35¼	Pass small village of **Shināneh** (reed huts), about ½ m. E. of road.
35½	Cross another shallow creek with a little water in the flood season. Its banks need ramping, but otherwise it is no obstacle.
37	Road crosses the **Derbend** (or Ghumaij) Creek, 12 ft. broad, by a bridge of planks or rails. The creek is unfordable. It contains good water.
	Here the road is within a mile of the marsh, and as the flood rises the approaches to the bridge become very bad.

FLOOD SEASON ROUTE TO THE EUPHRATES (OLD CHANNEL).

From here an embanked road runs along the N. bank of the canal to **Steamer Point**, where there are landing-places and a camping area protected from floods by *bunds*: but this camping-ground, though usually above flood level, was under water from May to July, 1916. From Steamer Point an embanked road, which is usually above flood level, though it was under water in the floods of 1916, runs N. by W. to the junction of the Shatt el-'Arab and the Euphrates (Old Channel).

Miles from Basra	
	Except in the flood season the track leading direct from the Derbend (Ghumaij) bridge over the desert should be used.
41	The cultivated river belt is here entered.
42	Cross the **Euphrates** (Old Channel) by a boat-bridge, 120 yds. long.
	Kurna.
43½	Camping-ground W. of a *bund* ½ m. from the Tigris. Good water from the river.

ROUTE 3

BASRA—MOHAMMAREH (24 M.)

Authority:—Routes in Arabia, 1915, no. 196. Force 'D' Route Report, Serial no. 11, Correction (Aug. 1916).

This route is little used, the ordinary thoroughfare being the Shatt el-'Arab. The route is liable to become impassable after rain from November to March inclusive, and is normally impracticable in the high-river season from the middle of April till August. See note at end of route. In September and October wheels could pass as far as the neighbourhood of Mohammareh, where there are two bridges over small canals which would need widening and repair for the passage of carts. See also below, under m. 0 and m. 13. At Mandūwān (m. 18) there is a little grazing and some bushes for fuel: the water there would be insufficient for a large force: no supplies.

Miles from Basra	
0	**Basra.** The route starts from Tanūmeh near Aviation Park, and its general direction as far as Mandūwān is due E. The ground is mostly flat, but undulates slightly in places with dunes 15–20 ft. high running from N. to S. (Another account says that the dunes run parallel with and N. of track for the first 5 m.) As far as Du'eiji, m. 13, the track is across an open sandy plain practicable for all arms except after rain.
13	**Du'eiji** (see *Route* I A, m. 59¾). From here the route is quite impassable for wheeled traffic except from the middle of August to the beginning of the rains (November or December), and may be extremely difficult for horses and mules, being boggy in places and often under water.

Miles from Basra	
14	**Nahr Abu'l Arābid,** here forming the Persian frontier, is crossed.
16½	**Arith,** a small village, is passed on the r. of the road.
18	**Mandūwān,** a small village, about 3 m. from the Shatt el-'Arab on the E. bank of the Nahr Kheyyein (see *Route* I A, m. 52½), here a small creek, which supplies the inhabitants with good but slightly brackish water; it would be insufficient for a large force. The camping-ground lies on the W. bank of the creek. The village has a grove of date-palms, and there is in the vicinity a certain amount of brushwood available for fuel. There is a little grazing for horses and mules, but no other supplies are available.
	From Mandūwān the route takes a general SE. direction for 3 m., its character remaining the same as in the stretch W. of Mandūwān.
21	Route turns S.
	It was reported in April 1915 that two bridges over small canals in the vicinity of Mohammareh would not take A. T. carts and were badly in need of repair.
24	**Mohammareh.**
	Ample camping space N. and NW. of town, also on either side of the Kārūn above the Bahmān Shīr (good water from Kārūn) or on 'Abbādān island.

NOTE.—The damp ground between Basra and Mandūwān can be avoided by taking a line a little N. of E. for the first 9 or 10 miles. Keep to the N. of two lines of palm-trees, avoiding soft ground near them. Just E. of the second line of palms turn a little S. of E. and proceed direct to Mandūwān. This line also avoids the damp ground sometimes encountered farther inland. It is bad for light lorries and quite impassable for heavy ones.

THE TIGRIS VALLEY

ROUTE 4

KURNA—AMARA (71 M.)

Authorities:—Information from various sources, principally Force 'D' Route Report, no. 1, January 1916, and Force 'D' Survey Maps 47, 49.

No information has been available for this handbook of a later date than the end of 1915 as to any improvements made on this route. At that time it was impassable for all arms in the flood season (March–June) and after heavy rain, and from about m. 11 to m. 16½ it was impassable for guns except in the driest part of the year (September–January). The remainder of the route, with improved bridging, could be made passable for all arms during the whole of the dry season. Going is generally rough. Of the numerous canals and water-cuts, the larger were crossed by temporary wooden bridges, but these required strengthening for continuous traffic. Approaches to the smaller cuts had been improved. Water is good and plentiful from the Tigris and creeks. Some supplies can be obtained at most of the villages, and some grazing and fuel are found along the route. A T.L. (two wires on tubular iron posts) follows the route.

The Route Reports and maps referred to above are not n exact agreement throughout, as will appear from the itinerary below.

Miles from **Kurna**.	
0	**Kurna.** Leave in a N. direction, following the general direction of the Tigris, at first on its r. (W.) bank. Sandy track, easy going. Country to W. is covered with thick grass, and difficult for all arms. Villages are mostly of reed huts, with a few mud houses.
1	Pass **Nuheirāt**, with date gardens.
2½?	Cross creek, empty in dry season, 10 yds. wide and 5 ft. deep in flood.
	Pass **Norfolk** Hill, 15 ft. high, on r.
4	Cross **Barbukh** Creek, 4 ft. deep in dry season, by trestle bridge 20 yds. long. Route traverses **Barbukh** tract.
6½	Cross creek 2–4 ft. deep by single-trestle bridge.
6¾	Pass **Bahrān** (or Abu Aran) village; towers on higher ground to NW.

Miles from Kurna	
7	Creek, fast flowing, 8 ft. deep in dry season, crossed by bridge of four trestles, 20 yds. long.
9	Low sand-hills to l. About here route passes old Turkish entrenched positions.
11½	Traversing **Khoreibeh** and **Muzeibileh** tracts, route crosses two creeks (according to map) by bridges.
12½	Cross **Nahr Sakricheh** by bridge of six trestles, 20 yds. long. At this point the creek is reported 4–6 ft. deep; this may be some distance above the mouth, where another Report gives 8–10 ft. deep, 10–15 ft. wide. (See *Route* III A, m. 16½.)
	Route then traverses **Sakricheh** and **Sheikh el-Magrumi** tracts, passing through date plantations intersected by irrigation cuts, near the Tigris bank.
13	Ground suitable for camping. From here to **'Ozeir** route follows a sandy track, rough in many places. Marshy country with high grass to W., almost impassable for all arms.
14	Sand-hills 15 ft. high on r. Just beyond cross creek 15 yds. broad by bridge of two trestles. Three more small creeks are crossed by bridges in the next mile.
15¼	**Basar** village 1½ m. to l. **Malzum** village, also on l., in this neighbourhood (?).
16½	**Sarīfeh** village (?) (one Report would place this village at m. 18). Cross **Nahr Sarīfeh** (6–8 ft. deep, 20 yds. broad, steep banks) by strong bridge, up to 2 tons, on six trestles. A little farther on, according to map, another creek is crossed by bridge.
19½	Cross creek by bridge, according to map.
20½	Cross rapid creek, 4 ft. deep, 12 ft. wide, by bridge with two trestles. **Abu Khilkhāl** village just beyond. Route traverses **Abu Khilkhāl** and **Menjābī** tracts.
25	**'Ozeir** (Ezra's Tomb). See *Route* III A, m. 29¼. Good camping-ground near the tomb. The palms surrounding the tomb are a landmark for miles. Good going from here to m. 32; marsh to l.
27	**Muheiya'ah** tract.
28½	Pass **Kassāreh** village.
31	**Jamsheh** tract.
32	Marsh on l. ends, and is replaced by rough grass. Track is badly defined, and crossed by many irrigation cuts difficult for transport, as far as m. 41½.

Miles from Kurna	
34	Pass **Mantāris** village. Plantations on r.; open low bush on l.
36	Pass **Abu Rūbah** village, in date-groves on river bank. Route proceeds through plantations and past small villages.
38	Camping-ground. Immediately beyond this cross **Abu Tamr** canal, 16 yds. wide, by bridge of three trestles with 10-ft. roadway, steep ramp, sandy approach. Track now takes general NW. direction, and continues over deep sand, very heavy for draught animals. Many water-cuts are crossed; two of these, before m. 39, are deep and form a considerable obstacle.
39	Pass **Khasim** village, and cross **Nufeikh** and **Bitarbitīyeh** tracts.
41½	Cross **Suleimāniyeh** Canal by a bridge; good going after this. Date-groves on r. T.L. crosses to l. (E.) bank of Tigris. **Qal'at Sālih** is on that bank (see *Route* III A, m. 57).
43½	Cross canal by a bridge (according to map).
45	Cross **Hofeifeh** Canal (according to map). This appears to be identical with the **Seyyid** Canal of the Route Report, 10 yds. wide, 3 ft. deep, crossed by bridge of three trestles; steep ramp and deep sandy approach.
47½	**Umm Masheh.** Cross the Tigris to l. (E.) bank by a swinging bridge of 16 boats, 100 yds. long, with 10-ft. roadway. Suitable for all arms. **Latlāteh** camping-ground immediately beyond.
	Route now runs fairly straight NNW., avoiding the windings of the river, but never more than 3 m. from its banks, and generally much closer. It is accompanied by the T.L. On r. of route is the Jehāleh Canal at an average distance from the route of about 3 m.
	Route now traverses the **Latlāteh**, **Dhuleimeh**, and **Basātimeh** tracts. Fair going on the whole.
50½	Cross small canal by wooden bridge.
53½	Fort with four towers on l. bank of Tigris to W.
54	Camping-ground at Basātimeh. Cross creek 4 yds. broad, 3 ft. deep, by bridge, and proceed over marshy ground. **Sirjāyid** and **Sill** tracts are traversed.
54½	Cross small creek by bridge, and in the next mile numerous dry water-cuts, over which there are earthen causeways.

Miles from Kurna	
55½	Cross canal 4 yds. wide, 2 ft. deep, by bridge. Marshy ground as far as
57½	Bridge over creek (**Umm Jemāl**?), 3 yds. wide, 2 ft. deep. Route traverses **Ubeyyeh** and **Qal'at ibn Farmān** tracts.
60	Camping-ground (**Abu Sidreh**) opposite a clump of trees on r. bank of the Tigris.
	Cross canal 3 yds. broad, 2 ft. deep, by bridge. Proceed over an open grassy plain intersected by numerous dry water-cuts, which, however, present no serious obstacle.
64½	Cross canal about 1½ ft. deep, unbridged, a considerable obstacle in wet weather.
65	Mullā Farman's house. Camping-ground. Route traverses **Dahāmīyeh** tract.
67	Plantations from here to Amara.
71	**Amara**

ROUTE 5 a

AMARA—'ALI EL-GHARBI, &c.

Via Right Bank of the Tigris

Authorities:—Force 'D', Map Serial no. 42, July 1915, giving results of a reconnaissance of June 1915; *Routes in Arabia*, 1915, no. 195; Force 'D', Map Serial 121, April 1916, based on a survey of Dec.–Feb. 1915–16.
For general remarks see p. 12.

Miles from Amara	
0	**Amara.** Route takes a W. direction to the Biteireh Canal, cutting off a bend of the river to N.
6½	Belt of marshy ground.
8	**Biteireh** Canal, 90 yds. wide, 35 ft. deep (end of June 1915), crossed at a point 300 yds. from the Tigris. Stream 2½ m. per hour. Banks are sound, but steep. The canal bifurcates about ¼ m. from the Tigris, the two arms reuniting ½ m. farther on. It is never dry.
10½	**Sofeihah** Canal, 30 yds. wide and 7 ft. deep near north bank (June 1915). Sound banks and hard bottom. Current 2 m. per hour. Dries up in l.w. season.
14½?	**Sofeir** (?) Canal, 20 yds wide and 3 ft. deep (June 1915). Sound banks and hard bottom; fordable; dries up in l.w. season.

Miles from Amara	
	Irrigation cut marked on map. No details.
18	**Kumeit** fort (mud, well built) on r., standing close to river bank.
24½	**Kumeit** village. Pass conspicuous brick-kiln at NW. corner of village. Route bends more towards the W., going between NW. and WNW., and cutting off a bend of the river.
30	Route approaches river bank. **Dujeileh** Canal, 72 yds. wide, 8 ft. deep (June 1915). Sound banks, hard bottom. Current 2 m. per hour. Marshes to l.
35	**'Ali esh-Sharqi** Canal, 12½ yds. wide and 2½ ft. deep. Fordable for guns and cavalry at end of June 1915.
35½	Pass sand-hill to l. Cross creek 25–30 ft. wide, 3 ft. deep (June 1915). Sound banks, hard bottom; fordable.
36½	**Gurmat es-Seyyid 'Ali** Creek, 20 yds. wide, 4½ ft. deep (June 1915). This creek dries up in the l.w. season.
36¾	Ruined fort and 4 low watch-towers.
38	**Sufeihāt Sharqi** tract.
39½	**Sufeihāt Gharbi** tract. T.L. turns W. by N.
41½	Small creek 30 ft. wide; fordable?
42½	**Upper Gurmat es-Seyyid 'Ali** Creek, 20 yds. wide, 9 ft. deep, 100 yds. from mouth; 40 yds. wide, 4½ ft. deep at mouth. Current 2 m. per hour. Sound banks, hard bottom. Track apparently ascends the northern bank of this creek for about 1 m. and then turns N.
43½	Conspicuous clump of trees.
45½	**'Atāh** Creek, 30 ft. wide. Sound banks, hard bottom; fordable.
47½	**Seyyid** Creek, 66 yds. wide, 14 ft. deep. Sound banks, hard bottom. Current 2 m. per hour. The distance between Upper Gurmat es-Seyyid 'Ali Creek and this creek seems to be 4–5 miles. According to map based on Survey Dec.–Feb. 1915–16, the track reaches Seyyid Creek about 3 miles from its mouth, and descends its S. bank, crossing it near the Tigris.
51	**Shafīr**, 2 small mud forts close to the river ½ m. from mouth of Seyyid Creek.
56½	**Fahādiyeh** Canal, 95 yds. wide, very deep (map says 20 ft.). Current 2 m. per hour. Track proceeds N., cutting off a bend of the river.
	Between this point and 'Ali el-Gharbi there is an irrigation cut 30 ft. wide, 4½ ft. deep.

Miles from Amara

66 **'Ali el-Gharbi.** (See Route III B, m. 78½.)

In addition to the obstacles mentioned above there are numerous irrigation cuts which average 10 ft. wide by 1 or 2 ft. deep, and can be ramped to allow the passage of wheeled vehicles.

Beyond 'Ali el-Gharbi, the road as far as **Musandaq** Breach was fit for all traffic about the end of April 1916; the only obstacles were three small water-cuts in Omaiyeh tract (see *Route* III B, m. 88, 99).

ROUTE 5 b

AMARA—'ALI EL-GHARBI (62 M.)

Via Left Bank of the Tigris

Authorities :—As for *Route* 5 a, and later information.

Miles from Amara

0 **Amara.** There is now a motor road along this bank.

Between Amara and m. 11 the following obstacles are reported (apparently from a reconnaissance towards the end of June 1915):—

Irrigation cut—10 ft. wide; 4 ft. 6 in. deep.

Broken *bund*: inundation—25 ft. wide; 8 ft. deep.

Irrigation cut—12 ft. wide; 4 ft. 6 in. deep.

Marsh—50 yds. wide; 6 ft. deep.

11 In this neighbourhood (some way below the mouth of the Sofeihah Canal on the opposite bank) is a creek 25 ft. wide and 4 ft. deep (end of June 1915).

Immediately beyond it is a marsh 50 yds. wide (6 ft. deep?).

Another marsh 50 yds. wide (6 in. deep) is reported between this point and m. 21.

21 In this neighbourhood broken *bund*, causing inundation 86 yds. wide, 3 ft. deep; fordable for cavalry, not guns.

22 **Qal'at Sultān**, ruins.

23 Broken *bund*, causing inundation ½ m. wide, 2 ft. deep, impassable by guns or cavalry. This *bund* is apparently a short way above Kumeit on the opposite bank.

Miles from Amara	
	At some point beyond this broken *bund* there was a flooded area 400 yds. wide, 1 ft. deep, but no indication is given as to its position. In July 1916 the bank from here to 'Ali el-Gharbi was dry.
26	Fort with 4 towers near bend of river to l.
27½	Mounds.
30½	Creek, 10 ft. wide. Beyond this point are numerous canals, which can apparently be turned by a détour about 1–2 miles to E.
33½	Creek, 10 ft. wide.
34½	**'Ali esh-Sharqi.** (See *Route* III B, m. 43.) Conspicuous clump of trees, with tomb showing in centre.
37	Fort, 2 towers. Ruins.
39	Ruins.
51½	**Husein** Creek, 55 yds. wide, 8 ft. deep. Current 2 m. per hour. Sound banks and bottom. It divides into two channels 50 yds. from the mouth. It dries up in l.w.
62	Ruins opposite **'Ali el-Gharbi.**
	In addition to the above obstacles there were numerous small irrigation cuts, which were not serious obstacles, at least when the river was not in flood.

ROUTE 5 c

KUT EL-AMARA—BAGHDAD (112 M.)

Via Left Bank of the Tigris

Authority:—Force 'D' Route Report, Serial no. 2 (February, 1916).

This route is liable to inundation from March to June inclusive and the going is bad also after heavy rain. For areas mentioned as liable to flood see under m. 6, m. 27½, m. 61, m. 64, m. 68½, m. 96½. In high flood a spill may take place at Lajj (m. 84) which may inundate the country down to 'Azīziyeh (m. 61) or even to Dabūni (m. 35). The breaching of the *bunds* at Baghdad would flood the whole country down to the Diyāleh (m. 103).

In the dry season (Sept.–Dec. inclusive) the going is fairly good throughout, and it was reported in Feb. 1916 that the road could be made suitable for motor-lorries at that time of year with slight improvements.

There are several canals and irrigation cuts which need ramping for wheeled traffic. None of these requires bridging except where noted in the itinerary.

Water is good and plentiful from the Tigris. Information is given with regard to watering-places, but these vary considerably from year to year.

A limited number of sheep and cattle can be obtained from villages and Arab encampments *en route.*

Considerable quantities of *bhusa* and grain for fodder can be obtained from villages and Arab encampments *en route.* Camel-grazing is plentiful, but there is very little grazing for horses.

Wood fuel can be obtained only at Qutnīyat (m. 68½), but scrub jungle is plentiful.

In time of high flood the only places that can be counted on as having considerable areas above flood-level are Kut el-Amara, Baghdādiyeh (see under m. 76) and Ctesiphon (m. 93).

A T. L. runs roughly parallel with, and often contiguous to, the route. For the river-route see *Route* III C, and Appendix B.

Miles from Kut el-Amara	
0	**Kut el-Amara** (camping-ground). General direction to m. 16, WNW. Road runs NW. from camping-ground for about 2 m.: on this stretch in Feb. 1916 it needed improvement for wheeled transport by filling in water-cuts, &c. (The Turks subsequently made a road from their camp at Shumrān passing N. of Kut to the l. bank of the Tigris opposite Maqāsīs.)
2	Route joins old caravan-route. From here to m. 6 the going is good. The track runs for the greater part of the way along an old canal. The side-tracks leading to the river are very sandy and heavy.
6	Route turns SW. to river and runs along river bank to m. 10, through the Zoweir Hammād tract. There are here two tracks: the upper one is dry and dusty but affords good going for horses and vehicles: the lower track has in the dry season a hard damp surface said to be 'excellent for infantry but doubtful for guns'; in the flood season this lower track would probably be under water. The river bank is covered with scrub: owing to its steepness, watering would be difficult.
10	Track, continuing in same general direction, leaves the river, which here makes a considerable détour to S. (through El-Qāyet esh-Sharqi and El-Qāyet el-Gharbi

Miles from Kut el-Amara	
	tracts). From here to m. 15 track is sandy and heavy and easily cut up.
15	Track again meets river where the latter makes an elbow-bend (*Route* III C, m. 25).
16	Camping-ground (cf. introduction to this route). Scrub for fuel plentiful. Watering easy from river.
	From here to m. 35 general direction is WNW. Track runs NW. for about 1,000 yds., and then turns due W. The going is heavy.
19	Pass big tomb visible for about 3 m. Good camping-grounds may be found anywhere in the next 2 m.
21	Stone bridge over a water-cut which could be made passable by ramping if the bridge were destroyed.
21½	**Sheikh Ja'ād** ruins to N. of road. No village here. Fairly high ground in this neighbourhood affords a good site for a camp, but no fuel is obtainable and watering is likely to be difficult owing to the steepness of the banks.
	Road apparently now turns N. (There appears to be some confusion in the Route Report here followed, which says, 'After crossing the stone bridge the road runs due N. for 1½ m. towards the ruins of Sheikh Ja'ād.')
23	Route turns NW. and follows line of old canal for 4 m. This portion of the road is very good for all arms.
	Bogheileh lies about S. from here, on r. bank of the Tigris, and a track from the l. bank opposite to it joins the present route in this neighbourhood. This track, which is reported to be used by herds, continues NE. towards Jessān, joining *Route* 9.
27½?	'About 6 m. from Sheikh Ja'ād' the old canal joins an old bed of the river.
	Road continues over slightly undulating ground, the lower parts of which are liable to form swamps in the flood season. These can be avoided by keeping closer to the river-bank.
30	Road turns due W. to meet the river. Watering is here difficult, as the banks are steep. Scrub for fuel is plentiful.
	From here road runs due N. to m. 32.
32	Road meets old caravan-route and runs in a long curve with a general NW. by W. direction to
35	**Nahr Kellāk,** at elbow bend at down-stream end of

Miles from Kut el-Amara

Dabūni tract (cf. *Route* III C, m. 60¾). Camping-ground. Scrub for fuel plentiful. Watering easy from river.

From here to m. 51 general direction is WNW. From the camping-ground, road runs NW., cutting off a long loop of the river to S.

40 Road again touches river at bend near **Shidheif** ruins (cf. *Route* III C, m. 73¼). Plentiful scrub for fuel. Watering easy from Tigris. Good site for camp on fairly high ground.

From here road runs due N. for about ½ m. over sandy soil covered with scrub.

40½ Road turns due W. and runs in this direction for 5 m., passing through extensive ruins. The going is good.

51 Upper end of **Umm et-Tubūl** tract (*Route* III C, m. 79¾–86¼). Road is within 1 m. of Tigris. A site for camp can be found at this point, but fuel is scarce and watering difficult, owing to the steepness of the bank. Good fuel and easy watering can be found about 1 m. farther along the bank.

From here the general direction to m. 61 is NNW. The road runs over bare ground for 8 m.

59 Scrub begins again. Road very dusty.

61 **'Azīziyeh.** T. About 30 mud houses and a few shops. (See further *Route* III C, m. 102.)

Unlimited space for camping on fairly high ground, dry in flood season, except possibly when an exceptionally high flood has caused a spill at Lajj. Cf. introduction to this route. No supplies can be counted on. There is a certain amount of scrub jungle available for fuel near the village. Watering is easy from the Tigris.

From here to m. 76 general direction is NW.

To avoid the marsh and irrigation cuts mentioned below under m. 64 a détour to N. may be made; on leaving 'Azīziyeh turn NE. to **Nahrawān** Canal, which is then followed until the marshes are passed. The distance by this route to Zeur (m. 76 below) is about 25 m. The going is fairly good at all seasons.

The direct road runs nearly due W. from 'Azīziyeh near the T. L. towards the bend of the river known as Qutnīyat, which is marked by a small wood.

64 Road crosses depression, covered with high reeds, which forms a marsh after rises in the river, and in the dry

Miles from Kut el-Amara

season is heavy going. This depression is impracticable during, or shortly after, rain. The marsh can be avoided by following the bank of the river, but there are here several irrigation cuts (breadth about 12 ft.) which would need bridging for wheeled transport. For détour to N. see note under m. 61, above.

68½ **Qutnīyat** bend, thickly wooded (*Route* III C, m. 113½). Good supply of firewood. Here there are easy watering-places in the dry season, but in the flood season the banks are steep and watering is difficult.

From here road runs NW. direct to Zeur. There is a continuation of the marsh to r., but wheeled transport can pass except during an unusually high rise. Road close alongside T. L.

An alternative route to Zeur is as follows: Proceed due N. from Qutnīyat for about 4 m., across marl plateau; then turn due W. to Zeur.

76 **Zeur** or Robaideh (*Route* III C, m. 123½). The Zeur camping-ground is ½ m. N. of Zeur. About 2½ m. S. of Zeur is 'the comparatively high ground of Baghdādiyeh'. This seems to refer to ground on the l. bank opposite Baghdādiyeh up-stream of Zeur (*Route* III C, m. 120½; also m. 78, below). Firewood plentiful at 1 m. from Zeur camping-ground in grounds of Mohammed Pasha Daghistāni's house: watering for a large number of animals is difficult.

From here general direction to Bustān is WNW. The going is good, except after rain, when it becomes heavy.

78 Pass Mohammed Pasha Daghistāni's house, about 2 m. S. of road. Near it is a good camping-site on fairly high ground.

A branch T. L. takes off from main line and crosses the Tigris on two high poles, which form a good landmark, to Suweireh, for which see *Route* III C, m. 129½.

From the point where the branch T. L. strikes off, a track runs NW. along a slight ridge, which continues up to the **Diyāleh** river at its confluence with the Tigris. This road passes about 6 m. N. of Ctesiphon. The going is good at all times for all arms, but there is no water on this route all the way from Zeur to the Diyāleh (28 m.).

Miles from Kut el-Amara

84 **Lajj** (*Route* III C, m. 150¼). In this neighbourhood road crosses an old spill channel by an embankment about 80 yds. long and 30 ft. wide. The breadth of the depression is about 40 yds., its depth about 20 ft.; the banks are steep. When the Tigris is low, the depression can be crossed by all arms close to the river bank. If the embankment were breached the channel would have to be bridged (see, further, introduction to this route).

91 Road strikes the river at **Bustān** (*Route* III C, m. 163¼). Good site for camp on fairly high ground. Plentiful scrub for fuel. Watering easy at all seasons.

From here to m. 103 the general direction is NNW.

93 Pass to E. of **Ctesiphon** and **Salmān Pāk** (see *Route* III C, m. 169¾ and 170½). In this neighbourhood are several irrigation canals about 15 ft. wide. The bridges over these needed some improvement. A good site for a camp may be found on the sand-hills close to the Arch of Ctesiphon, a most conspicuous landmark. There are no supplies nor fuel obtainable, but there is good watering near the Mudīr's house 1 m. NW. (or W.?: see *Route* III C, m. 170½) of Salmān Pāk.

95½ Road crosses some sand-hills and passes over three canals with brick bridges. The canals are about 12 ft. deep and 15 ft. wide.

96½ Pass **Quseibeh** village. From here to the Diyāleh road does not touch the Tigris, which makes a bend to the E. The high poles carrying the T. L. across the Diyāleh are visible from Quseibeh. Road throughout this stretch is liable to floods. There are a few shallow canals to be crossed, but these are not obstacles to movement.

103 **Diyāleh** village, near mouth of Diyāleh river, which is about 170 yds. broad at its confluence with the Tigris, and is crossed by a pontoon bridge of 13–16 pontoons (cf. vol. iii, *Route* 31, m. 9). The banks are precipitous and about 30 ft. high in l.w. On the Diyāleh river are six pumping houses, five of which are on the r. bank. Near the fifth, counting from S. to N., and about 10 m. N. of Diyāleh, is a ford called Terumbah el-Tufik Bey, but this is impracticable from December to April.

There is said to be no fuel at Diyāleh, but there appears

Miles from Kut el-Amara

to be tamarisk scrub on the banks of the Diyāleh river. Watering from the Tigris is easy.

In the dry season there is unlimited space for camping on either side of the Diyāleh. In the wet season both banks are liable to flood, and the best site for a camp is on the high ground at Bustān Mal Terumbah on the r. bank of the Diyāleh, in a loop of that river, 4 m. from l. bank of the Tigris: at this camping-ground fuel is plentiful and watering easy, and a good road runs from it direct to Baghdad.

107 **Si'adeh.** Here the road for wheeled traffic turns N.

The ordinary road for travellers on foot and pack animals proceeds NNW. to Baghdad *via* Qarāreh (*Route* III C, m. 190½), but it is impracticable for wheels beyond Qarāreh owing to the narrowness and weakness of the bridges over the numerous irrigation canals.

110½ Cross large *sudd* close to T. L.

Pass Southern Barracks. Thence by small *sudd* and moat to

112 **Baghdad** (Bāb esh-Sharqi or SE. gate).

THE REGION OF THE LOWER KĀRŪN RIVER AND LURISTAN

ROUTE 6 a

MOHAMMAREH—AHWĀZ (79 M.)

Via RIGHT BANK OF THE KĀRŪN

Authorities:—Force 'D' Route Reports, Serial nos. 11 (with correction) and 13. The latter is confused in the description of the route from Dāīr to Sab'ah.

This route is for nearly all its length undefined, as most of the traffic between Mohammareh and Ahwāz goes by river. The country is a flat open alluvial plain, sandy in parts, and generally uncultivated.

As far as Dāīr and Salmāneh camping-grounds (m. 10), the route becomes impassable for wheeled transport in the flood season or after heavy rain, and is then very difficult, if not impassable, for pack animals. See further under m. 0. Beyond Salmāneh the route is said to be passable for cavalry, infantry, light field artillery, and A. T. carts, but it is very heavy after rain, and may become hardly practicable. The going beyond Sab'ah (m. 42) is good in dry weather. The route as a whole is easy from August to December.

It is not stated whether light motors could be taken in the dry season over the direct route from Mohammareh to Dāīr or Salmāneh. They can be used in the dry season only between Mandūwān (four or five miles NNW. of Mohammareh) and Salmāneh, and, apparently more generally, from Salmāneh onwards. It is recommended that they should not be taken singly, but in pairs, as there are soft places due to mud or sand, and cars have sometimes to drag one another out of difficulties. The route as a whole is quite impassable for heavy cars: and it is said to be impossible to find practicable détours. There are only occasional stretches suitable for heavy lorries, the most important being one of 7 m. which begins 3 m. ENE. of Mandūwān, and another which begins 6–8 m. S. of Sab'ah, and extends for 12–14 m. to Qajariyeh (m. 48). For the best way for motors between Salmāneh and Sab'ah see note (ii) under m. 10.

In April 1915 General Gorringe's column marched without guns and wheeled transport from Basra to Mandūwān by *Route* 3, and thence to Salmāneh (see note under m. 0), where the guns and wheeled transport which had proceeded by river joined the column. Thence all arms marched by 'Ali ibn el-Husein (see note under m. 26) to Sab'ah, and from Sab'ah by this route to the camping-ground at m. 61.

For river-transport on the Kārūn see pp. 62–4. Places where barges and *maheilehs* can conveniently come alongside are mentioned in the itinerary.

The T. L. now runs from Mohammareh along the r. bank of the Kārūn to Dāīr Island, where it crosses the river. Thence it follows the l. bank to Ahwāz. The old telegraph poles seem to be still standing along the r. bank above Dāīr.

In the hot months of June, July, August, there are generally strong NW. winds and much dust. Rain seldom falls before December, but in that month and in January it is frequent. Rain-storms continue at intervals during February, March, and occasionally in April. For floods on the Kārūn see p. 61.

Water (from the Kārūn) is good and plentiful. There are no supplies worth considering except in the neighbourhood of Ahwāz. In February, March, and April there is some grazing for horses from Adhrat Island (m. 26) onwards: it is best near Sab'ah. There is no grazing for horses at other times. Camel-grazing and scrub fuel are fairly abundant. Unlimited space is available for camping-grounds.

Miles from Mohammareh

0 **Mohammareh.**

From here to Dāīr (or the Salmāneh camping-ground: see under m. 10), the direct route is generally impassable in the flood season or after heavy rain. But when the Kārūn river alone is in flood, and not the Shatt el-'Arab as well, it is sometimes possible to find a route by making a détour to N., about 4 m. longer than the direct route.

The détour is as follows:—Proceed N., passing 2 m. from (E. of?) the village of Mandūwān (see *Route* 3, m. 18). Two canal-bridges would need widening to make this part of the route passable for wheeled transport: see *Route* 3, m. 21. At a point about ENE. of Mandūwān turn nearly ENE. (64°), and proceed to the river. The track between Mandūwān and the Salmāneh camping-ground (see under m. 10 below) is good going for all arms in the dry season: from a point 3 m. ENE. of Mandūwān there is then a

Miles from Mohammareh

stretch of about 7 m. suitable for heavy lorries. The track apparently becomes quite impassable for wheeled transport when both the Kārūn and the Shatt el-'Arab are in flood, and it is then very difficult or impracticable for pack animals.

The direct route is as follows:—Leave the town, skirt the northern wall, and proceed at first NE. The soil is clay and in many places swampy: date plantations occur here and there.

1 Road becomes a mere track across a mud flat. The country to N. is barren, but a belt of cultivation fringes the Kārūn.

2¼ Route lies over country which becomes a large swamp in spring rains.

4½ Small village. Date plantations about 1 m. to r. The going after rain is heavy and swampy.

7 Pass **Qisbeh,** small village of reed and straw huts, situated on the l. bank of a muddy creek about 50 yds. wide and 3 ft. deep, which is often difficult to ford.

10 **Dāīr** Island in the Kārūn. There is usually a site for a camp on the r. bank hereabouts, but its exact position varies with the state of the floods, and also with the condition of the river, which determines what places are most suitable for bringing barges alongside. Grazing for camels, but for no other animals.

There is a camping-ground about 2–3 m. farther up the Kārūn, 1 m. below **Salmāneh** Island. Water good and plentiful from river. Landing-place good. Plentiful camel-grazing in neighbourhood. Limited supply of brushwood fuel. No supplies.

(i) From here a track runs to Rubin's Tomb and Rehvāli (see m. 24, below) somewhat nearer the river than that described below from Dāīr Island. It is good going for all arms in dry weather, but after rain it becomes heavy for wheeled transport, and in the flood season the first 5 m. are liable to inundation. There are a few shallow nullahs to be crossed: these form no obstacle. (On the better road for motors from this camping-ground to Sab'ah see (ii) below.) From Salmāneh camping-ground strike due N. till the river is met m. 5. Here there is a good landing-place and unlimited space for camping, with a little grazing and fuel. At m. 10 from Salmāneh pass Rubin's Tomb and Rehvāli on r. of track. Hereabouts the route from Dāīr is met.

(ii) The way for motors from Salmāneh camping-ground to Sab'ah (m. 42, below) keeps farther away from the river, and goes straight for a point 3–4 m. W. of Rehvāli. Thence continue N., leaving 'Ali ibn el-Husein (see note under m. 26 below) about 8 m. to E. Up to a point 6–8 m. S. of Sab'ah the ground will only carry light cars, and arrangements for rescuing even these are necessary.

Miles from Mohammareh

From Dāīr to Adhrat Island the route is passable for all arms, but the going is described as soft with treacherous boggy spots.

Proceed N. for 10 m.

20 Direction changes to NE. (The way for light motors to Sab'ah continues N.: see note (ii) under m. 10.)

24 **Rubin's Tomb** and **Rehvāli** are passed to r. of track.

26 **Adhrat** Island. Opposite this island is a good site for a camp, with a convenient place for barges to come alongside. There is good camel-grazing, and (in spring) scanty grazing for horses 1½ m. W. of the camp.

From Adhrat Island to Sab'ah (m. 42, below), a route alternative to that described below runs nearer to the river: it is good going for all arms in dry weather, but becomes very heavy after rain. From m. ½ to m. 2 a marsh extends along l. of track and about 2 m. from it: the water of the marsh is drinkable, and there is good grazing for horses in spring along its edge. At m. 4 (m. 5?) there is a camping-ground by the river opposite a palm-tree (or trees? see *Route* 6 b, m. 29) on the eastern bank (**'Ali ibn el-Husein**): space unlimited. Water is good and plentiful from the river, but owing to the steepness of the banks buckets must be used. Landing-place good. Limited quantity of scrub fuel and camel-grazing. No supplies. The tomb of Seyyid Abud is a conspicuous landmark to NW. The track to Sab'ah (11 or 12 m. from this camping-ground) passes 3 m. E. of the tomb. At m. 5 from the camp the date palms of Sab'ah become visible. From here the country W. of the track is much cultivated, with plenty of grazing for horses in spring.

From Adhrat Island strike N. There is no sign of a road. The going is rather soft with treacherous boggy spots. Water-cuts are minor obstacles. For the way for motors, which lies apparently somewhat W. of this line, see note (ii) under m. 10.

There are a few pools of water in the bed of the Hammāmiyeh canal, and 4½ m. farther on, in the 'Aon, there is good water, but it is too muddy for men. Shortly after passing the 'Aon the tomb of Seyyid Abud becomes visible, and 2 m. before passing this tomb the palm-trees of Sab'ah come in sight.

42? **Sab'ah.** (The distance given from Adhrat Island is perhaps a mile or two too long.) Sab'ah village is a collection of miserable huts. The camping-ground is 300 yds. to S. of the village. There is a convenient place on the

Miles from Mohammareh

river-bank for barges to come alongside. The plain in the neighbourhood is fairly well cultivated. A limited quantity of *khasil* (green barley) is available in season. In spring there is fair grazing for horses in the vicinity. A sweet-smelling grass, called in Persian *gul-i-zard*, is found in some abundance. There is also good camel-grazing. The water in the river is muddy, but clears quickly if allowed to settle. Abundant tamarisk fuel.

From Sab'ah to the Farsiyāt camping-ground the general direction is N. According to one authority (Force 'D' Route Report, Serial no. 13) there is no sign of a road, but poles of broken-down T. L. mark the route. But see under m. 48. The country is flat, and the going is firm and fit for all arms and A. T. carts, but rather rough in places. As far as Qajariyeh the route is fit for heavy lorries: thereafter to Ahwāz it is practicable for light cars only, except in a very few stretches.

44 Track crosses a stretch of cultivation and grass-land extending to Qajariyeh. This affords plentiful grazing for horses in spring.

48 **Qajariyeh.** From this point (or from 1 m. farther on), the track to Farsiyāt is said (Force 'D' Route Report, Serial no. 11) to be well defined. But see above under m. 42.

54 Camping-ground 2–3 m. below **Farsiyāt,** at bend of river. Opposite it, on l. bank, are three conspicuous knolls. Water good and plentiful. Landing-place good with steep banks. Plentiful camel-grazing, and a little for horses in spring. Abundant tamarisk fuel. No supplies.

From here to Mila'ihān the general direction is NE. Track lies mainly over open desert, but here and there are patches of cultivation. Track is good and passable for all arms in dry weather, but after rain it becomes very heavy and muddy. Old telegraph poles mark the route to m. 61.

58½ Pass **Braikeh** village on opposite (l.) bank of the river.

61 Good camping-ground at bend of river. Good landing-place. From here a conspicuous ruined tower bears NW. (307°): it is about 2½ m. distant.

Cross-route to *Route* 8a. Here General Gorringe's column in 1915 left the Kārūn at a bearing of 334° (nearly NNW.). At m. 9 from

Miles from Mohammareh	
	the Kārūn the old bed of the Karkeh was crossed; it formed a difficult obstacle to wheeled transport. Thence the route is said to have run NE. to Umm er-Raus, which was reached at m. 18. Umm er-Raus is apparently about 2½–3 m. SSE. of Seyyid Mūsa (*Route* 8 a, m. 88½), and is on the southern route from Seyyid Mūsa to Ahwāz (Amīnīyeh) by Deh Liz wells.
66	**Mila'ihān** (locally known as Makhdoah) camping-ground on river bank. Good landing-place with steep banks. Water good and plentiful. Limited camel-grazing and scrub fuel. No supplies.
	From here the track runs in a general NE. direction, mainly over open flat desert, which is for the most part covered with short grass affording grazing. Several stretches of cultivation are crossed. Route is good going, fit for all arms in dry weather, but becomes very heavy after rain.
69	**Umm et-Tumeir** village is passed on the r. Small ferry.
70½	Old bed of **Karkeh** River, here no obstacle. From here track leaves river and runs direct (NE.) to
78	**Amīnīyeh,** on r. bank of Kārūn, opposite Nāzirī. Amīnīyeh is a village of about 65 houses. Some wheat and barley are grown here, and there is good camel-grazing.
79	**Ahwāz,** on l. bank of Kārūn, 1 m. above Nāzirī.

ROUTE 6 b

MOHAMMAREH—AHWĀZ (66 M.)

Via Left Bank of the Kārūn

Authorities:—Routes in Persia, vol. iii, 1910, no. 67; Force 'D' Route Report, Serial no. 17.

This route, in 1906–7, was merely a track across open uncultivated ground. It is accompanied by the Anglo-Persian Oil Company's pipe-line to 'Abbādān and the telephone, which has call-boxes (1916) at Marid and near m. 29 and 45. In 1906–7 it was chiefly used by messengers, who generally followed this route between the Mārid stream and Ahwāz, crossing the Kārūn by ferry at the former point. There was little caravan traffic, as most of the traffic between Mohammareh and Ahwāz was by boat.

After rain the whole of the country passed over becomes sodden and heavy; the ground on the l. bank is said to be more liable to inundation than the other. Certain parts of the ground passed over are impregnated with salt, and are said to be worse than the others after rain. There are also numerous soft patches of oily sand.

In dry weather motor lorries have done this journey with some trouble; after rain wheeled transport would find difficulty, and could probably not count on doing more than 8–10 m. per day. After rain transport of all kinds and men or horses would find it difficult to do more than short marches.

There are practically no supplies. The few villages met with lie within 16 m. of Ahwāz, but produce nothing worth calculating on. Arab encampments during the winter, if met with, might produce some cattle and sheep. Water is obtainable from the Kārūn River.

Between 'Ali ibn el-Husein and Kūt 'Abdallah the track followed runs for 25 m. over waterless country accompanied by the pipe-line; this would be avoided by following the river more closely, thus lengthening the journey by 12–15 m.

There is no grazing except after rain, and then only in very limited quantity. Fuel is obtainable from brushwood which grows along the bank of the river, but the supply is rapidly diminishing.

Miles from Mohammareh	
0	**Mohammareh.** The route starts on the l. bank of the Kārūn, immediately above the point where the Bahmān Shīr branches off. The latter is unfordable at all times of the year. Travellers usually cross to or from r. bank of the Kārūn at Mārid, and begin or conclude their use of this route at that point.
8	**Mārid** village, stream and ferry. When the water is low (i. e. between May and October) the Mārid is fordable, though the bottom is always muddy. After the rains have begun (i. e. any time between November and March) the Mārid is often unfordable, and must then be crossed by a ferry, the animals being swum over. The best place for the erection of a bridge or for the passage by ferry is within 200 yds. of the Kārūn; farther down the stream gradually becomes a marsh, and another obstacle in the shape of the Fellāhīyeh Canal would have to be crossed. The width of the channel is 40 ft., but the amount filled with water varies according to the season of the year. The bank is suitable for landing heavy vehicles in h.w.;

Miles from Mohammareh	
	in l. w. landing can be effected near Salmāneh Island, 4 m. higher up the Kārūn.
29	**'Ali ibn el-Husein** (Umm el-Quwein ?). Three palm-trees, a usual halting-place. Hereabouts begins a stretch of 5 m. of deep oily sand with soft surface.
34	From here two routes can be followed—one along the river bank to Ahwāz, and the other, which accompanies the pipe-line as below in a direct NNE. direction across the desert, striking the river again at Kūt 'Abdallah.
45	**Seyyid 'Abbas.** Cross to E. of pipe-line.
49	**'Arab 'Abbas** wells.
54½	**Sawiweh** well. Cross to W. of pipe-line, and recross 2 m. farther on.
60	**Kūt 'Abdallah.**
66	**Ahwāz-Nāzirī.** (Nāzirī, the more southerly village, is reached first.)

ROUTE 6 c

AHWĀZ—DIZFŪL (181 M.)

Authorities:—Routes in Persia, vol. iii, 1910, no. 70; *Corrections to vol. iii*, 1914, no. 70.

This route follows the E. bank of the Kārūn to Band-i-Qir. This part of the road is fit for wheeled traffic in dry weather.

From Band-i-Qir to Shushtar the route as described below traverses Miyanāb Island between the two branches of the Kārūn, the Āb-i-Shatāit and Āb-i-Gargar. Wheeled traffic might get within 12 miles of Shushtar by this way, and a carriage-road might be easily constructed the whole way. Another route, also described below, follows the course of the Āb-i-Diz to Dizfūl. The most recent maps mark a route passable for wheels leading to Shushtar E. of the Kārūn: no details are available: see Introduction to this volume, p. 16.

From Shushtar to Dizfūl there were before the war tracks fit for pack animals: it was believed that a cart-road could be made without difficulty. The chief obstacle before the war was the crossing of the Āb-i-Shatāit at Shushtar.

In December and January there is often a hoar-frost in the morning. The climate may be found trying on account of great differences of temperature between day and night. The worst months for heat are June, July, and August. The spring climate is pleasant,

and much cooler than at Mohammareh. Rain seldom falls before December, but may occur in November; the heavy rains fall during the early part of the year.

There is a fairly large amount of cultivation along the route, and probably after the harvest large supplies of corn could be collected. Water is from the Kārūn and, after rain, from pools. The Kārūn water is always sweet, and although very thick in the first five months of the year, it soon settles. Grazing is plentiful if there has been sufficient rain. Fuel, mainly tamarisk bushes, is very scarce; some is obtainable from the Diz River. Large stocks of fuel for the steamboat are to be found at Ahwāz, Band-i-Qir, and Shaleili.

Miles from Ahwāz	
0	**Ahwāz.** General direction NE. over ground in parts liable to inundation. Oil pipe-line and telephone accompany route.
2	Road and Persian T.L. go off to the E. to Borazjūn *via* Ramuz and Behbehān. See *Routes in Persia*, vol. iii, 1910, no. 65.
16	**Wais** village. Good halting-place, supplies plentiful. Lynch road to Isfahan takes off to E. See *Routes in Persia*, vol. iii, 1910, no. 69. General direction northerly.
25½	**Kūt en-Naddāfīyeh.** Here pipe-line and road to Maidān-i-Naftūn take off to NE. At about m. 9 on the road to Maidān-i-Naftūn a road to Shushtar, passable for vehicles, is marked on recent maps as branching off to N.: it runs on the E. side of the Ab-i-Gargar.
28	**Band-i-Qir,** Arab village, 300 inhabitants (so reported some years ago: but the population may have grown as a result of the oil traffic). Supplies fairly plentiful. Large caravanserai which before the war was deserted and semi-ruinous. Opposite Band-i-Qir is a bridge of 8 flat-bottomed boats, each 30 ft. in length and 9 ft. in beam. The roadway is 12 ft. broad, and the bridge is 60 yds. long. The bridge is constructed in two halves, either of which can be removed for the passage of boats. There are high and low approaches to the bridge, which are used in winter and summer respectively. The bridge is used by the Oil Company's carts and motor-cars, and would present no obstacles to artillery. For the route from Band-i-Qir to Dizfūl by the Āb-i-Diz see note at end of route, and for an alternative route to Shushtar see under m. 65 below.

Miles from Ahwāz	
32	General direction N., through cultivation and across grassy undulations on which sheep and goats are grazed.
34	Cultivation.
40	**'Arab Hasan.** Small village on l. bank of Āb-i-Shatāit. Some small ferry-boats. Corn cultivation, dependent on rain. Track runs up l. bank of Āb-i-Shatāit, where a ruined village is passed.
43	Track bears in a more easterly direction over a grassy plain.
57	Track crosses richly cultivated land intersected by muddy irrigation ditches, which are rather difficult for loaded mules.
64½	Large canal, immediately S. of Shushtar.
65	**Shushtar.**

The following is an alternative route from Band-i-Qir along the Āb-i-Gargar :—

Miles	
28	**Band-i-Qir.** Undulating country is crossed; a swamp 5 miles from Band-i-Qir is avoided by a détour to W.
39	**Daulatābād** on Āb-i-Gargar; a few huts of mud and straw. Ruin of old mud redoubt on r. bank of river. General direction of route NW. Road from here to Shushtar very narrow and bare. It follows the bank of the Āb-i-Gargar.
46	Cross small irrigation canal.
48	White tower, known as Sāhib en-Nebi, is passed.
49	**Khuwīd Būleh** village.
50½	**Punār** village.
52	Cross small canal.
53	Wharf on which boats generally discharge their cargoes for Shushtar. A little farther on the villages of **Shaleili** and **Mahi Bazan** are passed.
57	Ground much broken by ravines and canals.
60	**Shushtar.** Cross Pul-i-Lashkar bridge (50 ft. long, 10 ft. wide).

From Shushtar route goes in general direction NW. The road crosses the Āb-i-Shatāit about a quarter of a mile below the bridge, which is broken in the middle. Crossing made by means of *keleks*. River in spring is about 400 yds. in breadth, with a current of 3½ to 4 miles per hour. The passage is dangerous for animals (which have to swim), and is attended with considerable delay.

General direction to the Āb-i-Bīd, NW.

Track after leaving the river ascends gradually over stony hills.

Miles from Ahwāz	
58	Track passes through the **Gardān-i-Rīsh-i-Gīr** after short but steep ascent. This used to be a favourite spot in summer for marauding Arabs. Easy descent to the fertile **'Aqili** plain.
72½	**Jallakhan** village, 1 m. to r. on r. bank of the Kārūn. The river here makes a great bend to the W. encircling some ten villages, most of them the property of the chief of the Bakhtiyāris.
75½	Track turns slightly W., leaving the road to Gutwand, and runs through wheat cultivation.
84	**Āb-i-Bīd** stream; village on bank with native fort. Pop. of 1,200 in winter only; large herds of cattle and sheep. Plain to NW. is the camping-ground of the Bakhtiyāri Khans.
	Route goes in general westerly direction, over undulating pasture land.
90	**Ser-i-Bīsheh**, 40 Arab and 40 Lur houses.
92	Cross several broad and stony channels of the **Āb-i-Kaunak**, extending 2 m., and running SE. In the spring rains these contain strong running streams 120 ft. wide and 3 to 4 ft. deep, but always fordable. In summer they are dry. Gradual rise from farther side of the water-course.
95	Undulating ground, with water-courses.
97	Plateau, 2 m. wide, is crossed: thence slight drop across cultivated ground.
104	**Dizfūl.**

A route alternative to that described above goes from Shushtar as follows, and is said to have been in 1908 the more frequented of the two.

Miles	
65	**Shushtar.** General direction NW. Cross **Āb-i-Shatāit** by ferry S. of Pul-i-Shushtar.
66	Reach foot of low hills: cross these by easy track, and enter broad alluvial plain.
70	Pass **Diyāmcheh**, well containing fresh water all the year.
80	**Pawindeh**, small village.
83	**Kaunak**, large village with water-mills. Supplies fairly plentiful; fuel very scarce.
85	Cross bed of **Kaunak** stream, 1 m. wide, stony bottom, dry in summer, always fordable except for a day or two after heavy rains.
88	**Shāhābād** village. Track now crosses stony gently undulating ground.
93	**Siyāh Mansūr** village.
102	**Dizfūl.**

NOTE.—Route from Band-i-Qir to Dizfūl *via* the Ab-i-Diz. See *Routes in Persia*, vol. iii, no. 70, Alternative C (report of February 1905).

Miles from **Band-i-Qir**	
0	**Band-i-Qir.**
	Ascend l. bank of Āb-i-Shatāit. Good grazing for cattle, tamarisk, and thorn jungle on the river banks.
8	**Anāfijeh** camp.
	Cross undulating plain in NW. direction.
12	Pass large group of mounds.
16	Bank of the **Āb-i-Diz,** small camp : good grazing, and some corn cultivation : old irrigation channels.
24	Cross rocky ridges running E. and W. across the river and forming rapids of **Kūt Bandar.** (See Route II A, note on navigation of Āb-i-Diz.)
28	Considerable détour across muddy creek.
29	Permanent camp of Sheikh Ferhan (1905), with new fort on l. bank of river, built of sun-dried bricks, 150 × 150 yds., with flanking towers. Much corn cultivation.
	Large island with dense jungle of tamarisk and thorn, and many good-sized trees immediately N.
	From here general direction N.
	Alluvial plain with mounds of gravel ; corn cultivation ; water for irrigation from streams.
35	Large village : in 1905 Sheikh Ferhan's jurisdiction appeared to end here.
	Many camps of Arabs and Bakhtiyāris.
44	Good stream of clear water.
	Town of Dizfūl visible a long way off on the l. bank of the Diz.
57	**Dizfūl.**

ROUTE 6 d

AHWAZ—SHUSH (75 M.)

Authority:—Force 'D' Route Report, Serial no. 17.

This is a well-defined track suitable for motor transport, except at the crossing of the Shūr River. There are a few soft patches which would become troublesome with a constant stream of traffic, and there are certain points, specified as nearly as possible in the itinerary, where improvement is required.

Miles from Ahwāz	
0	**Ahwāz.** Cross the Kārūn by ferry. General direction N. by W., making for the narrow strip of land between the Karkeh and Khārūr (Shūr) rivers, and following it. For 2 m. track is bumpy, but could easily be improved; thence it is good as far as Deh-i-Pīr Mohammed.
20?	About here *Route* 7 (i) is crossed, probably near m. 107, but the point is not specified.
23?	**Deh-i-Pīr Mohammed.** At a point which cannot be located ('12 m. S. of Finjan' according to Route Report) a deep gully, usually containing water when the rest of the road is dry, requires attention. Some 3 to 4 m. beyond this point an irrigation channel requiring a bridge is mentioned, and a bridge 1 m. farther on requires strengthening.
42	**Durchal.** This appears to be approximately in the position of Seyyid Khalīl on Indian Degree map, sheet 10 A. The route is shown on that map as fording the Shūr about 6 m. farther on, but the route followed in the Report does so much farther up. Considerable improvement is necessary to the route, as a number of nullahs must be crossed.
70	**Mutashattit.** Ford over the Shūr (60 ft. wide, 3 ft. deep in September). Beyond this track is passable for all arms and transport.
75	**Shush** (see *Route* 7 (ii), m. 127; *Route* 8 b, m. 19).

ROUTE 7

BASRA—DIZFŪL (147 M.)

Via HAWĪZEH

Authorities :—Routes in Persia, vol. iii, 1910, Route 90, and *Corrections to vol. iii*, 1914, Route 90.

This track is very little used. It runs across level country which is mostly without a settled population, and, as far as Hawīzeh, is entirely deserted in summer and autumn even by nomads, owing to the lack of water. There is fine grazing in many places, and fuel can be obtained from scrub.

Miles from Basra	
0	**Basra.** The route leads from the l. bank of the Shatt el-'Arab in a general NNE. direction to Kushk Basrah over a level plain, without wells or pools of drinking water. The ground is water-logged after rain, and in places is slippery and bad going all the year round owing to salt efflorescence. It appears from the map that these difficulties can mostly be avoided by diverging somewhat to the E. of the direct line.
22	Ruins of **Haddādīyeh.**
33	**Kushk Basrah,** a large ruined brick building on a mound. Here nomads camp in winter and spring, in which seasons only there are pools of water in the neighbourhood. There are no wells.
	A track from this point leads to **Du'eiji,** about 35 m. due S. on the Shatt el-'Arab. It is little used. Neither it nor the Basra—Hawīzeh track is here distinguishable. Grazing is good ; fuel can be got from scrub.

Miles from Basra

From Kushk Basrah the route goes N. by E. to Jufeir over a waterless plain, swampy in winter.

39 **Kushk Hawīzeh,** a ruined building on a mound similar to Kushk Basrah. Nomads camp here in winter and spring and sow crops, which they remain to reap. Water is got from pools. The plain near and to N. of Kushk Hawīzeh is apparently marshy.

48 **Jufeir** mounds. Water in pools in spring. There are nomads in the neighbourhood while it lasts. There is water in wells all the summer, but it is said to be scarce and bad. Grazing is good: fuel from scrub.

A track leads hence to **Suweib** (about 28 m.).

From Suweib there are channels passable for *mashhūfs* running through the marshes to Qal'at Sālih, 'Ozeir, and Amara. *Mashhūfs* cannot descend to Kurna or Nashweh except in spring.

From Jufeir the Hawīzeh track goes in a general N. direction over ground covered in places with low scrub. Old canals are often passed.

67 **Hawīzeh,** pop. about 5,000; revenue of village and district, before the present war, about £500. Supplies are generally abundant. Water is obtained from December to June from the Attābiyeh Canal, which runs past the village in the old bed of the Karkeh. For the rest of the year it can be taken from wells.

From Hawīzeh a track leads to Suweib (16 m.) over level ground.

Route (i) *via* Kūt el-Hawāshim and Band-i-Qir

The following route from Hawīzeh to Dizfūl is said to be the best and usually the only practicable safe route.

General direction E. to Kūt Nahr Hāshim.

71 Cross **Attābiyeh** Canal where it enters the old bed of the Karkeh.

78 Pass mounds of **El-Hamar.** The track is level throughout to

86 **Kūt el-Hawāshim** on the **Karkeh** River, which here turns from SW. to NW. Here the Amara—Ahwāz route crosses this track. See *Route* 8 a, m. 86½. Route proceeds NE. along l. bank of the Karkeh.

Miles from Basra

90 **Kūt Nahr Hāshim.** Mud fort on slight elevation. White-domed shrine of Mushin on far bank of the Karkeh.

115? The **Diz** River is reached where the **Shūr** stream enters it.

130 **Band-i-Qir.** Thence to Dizfūl (about 134 m. from Hawīzeh) *via* Shushtar. See *Route* 6 c, m. 28.

ROUTE (ii) *via* BISEITIN and SHUSH

From Hawīzeh a track takes a general NNW. direction as far as Biseitin.

It first follows the **Attābiyeh** Canal.

70 Attābiyeh Canal divides: this point is marked by a shrine. Track goes somewhat N. of NW. over flat ground to shrine of **Zain el-Ābdin** and thence NNW. to

77 **Jama'ni** district, inhabited by Shurūfā. A canal is here reached along which small boats run to Biseitin.

84 **Macharīyeh** village: several canals unite here. At this point the loads of pack animals are transferred to *bellams* and *mashhūfs* and taken by water to Biseitin, the animals going along a dilapidated reed causeway through the marshes close to the canal.

87 **Shammarīyeh.**

89 **Biseitin.** A large straggling village of some 5,000 Beni Taraf, subject to the Sheikh of Mohammareh. It lies on the S. bank of the Karkeh, which here splits up into a number of small channels and loses itself in the marshes. A narrow strip of marsh, passable for animals in places (e. g. opposite Biseitin), separates the river from the desert which extends northwards to the foot of the hills.

There is *mashhūf* traffic from Biseitin through the marshes to the Tigris and up-stream on the Karkeh to Kūt Seyyid 'Ali (see *Route* 8 a, m. 81½).

From Biseitin it is possible to reach the **Duweirij** River by land, following a track which thence leads to the **Pusht-i-Kūh.** Other tracks lead across the tract of land between the Duweirij and the Karkeh, but they are all unsafe and very little used, and are also waterless for the greater part of the year.

From Biseitin the general direction of the track is N. to Shush. It leads over a flat alluvial plain, fertile, but inhabited only by nomad tribes of Arabs and Lurs.

127 **Shush.** The site of Susa, the capital of the ancient Persian empire: now almost uninhabited. The ground has been excavated by French archaeologists. Water is abundant

Miles from Basra	
	from the Shūr River and from irrigation cuts. The Beni Lām were, before the war, encamped in the neighbourhood throughout the year, and they had then large flocks of sheep, some buffaloes, and other cattle. In the summer months they grew some millet and rice. There is tamarisk and thorn jungle in the bed of the river. For routes to Zorbatiyeh and Shushtar see *Route* 10 a, under m. 125¾, and for other routes to Dizfūl see *Route* 8 b, m. 19–0.
	From Shush the track runs in a general NNE. direction across a plain, which is in places marshy, intersected by muddy ditches.
136	Pass a chain of sand-hills following the r. bank of a stream, probably an old irrigation channel, and crossing the watershed between the Diz and the Karkeh rivers.
136½	Cross the stream, which after rain has been found 3½ ft. deep and 20 yds. wide. Direction NE.
137	In April 1912 there was here a large camp of about 200 tents, regularly laid out in streets, said to be of Pusht-i-Kūh Lurs.
141	Cross the **Bāla Rūd,** a small tributary of the Diz, by a ford with a gravel bottom, 3 ft. 6 in. deep, 30 yds. wide after recent rain. Pass cultivation on r. bank of the Diz.
147	**Dizfūl** is entered over a bridge, which, in 1912, was in a somewhat precarious condition, one of the centre arches appearing likely to give way in any exceptionally heavy flood. Local resources would not be adequate for repair of bridge.

ROUTE 8 a

AMARA—AHWĀZ (105½ M.)

Authorities:—Force 'D' Maps (1915); *Routes in Persia, Corrections to vol. iii* (1914), nos. 65 B, 65 C; and other information.

The distances on this route, especially between m. 18½ and m. 56½, are very uncertain. The route follows the northern (l.) bank of the Musharreh Canal as far as the neighbourhood of Khir 'Ubeid. To the north of the route lies a large *khōr* (Khōr Sanaf), which from

about m. 6–7 gradually approaches the canal till at a point W. of Khir 'Ubeid (see m. 15¼) the l. bank practically disappears, at least in flood season. It was reported in June 1915 that there should be no difficulty for guns and wheeled vehicles in marching along the l. bank of the canal as far as m. 15¼, though the banks of some branch-canals needed ramping.

Beyond m. 18½ to the neighbourhood of Biseitin (m. 56½) there are no particulars available as to the route except such as can be gathered from recent maps: the track here runs over desert with marsh on its r.

From m. 56½ to m. 86½ the track continues over level desert along the course of the Karkeh. That river has to be crossed: it is fordable in some places, but no details are available.

From m. 86½ to m. 104½ the open desert between the Karkeh and Kārūn is traversed.

The going on the alluvial desert soil is probably very heavy in wet weather.

On the section of the route between Biseitin and the Ahwāz water is good and plentiful from the Karkeh, but is scarce between the Karkeh and the Kārūn. Camel-thorn grazing is to be obtained *en route*. Brushwood for fuel grows on some of the sand-hill ranges near the track, and round Kūt el-Hawāshim. Some supplies (chiefly rice) can be obtained from the neighbourhood of Biseitin and Khafajiyeh.

Miles from **Amara**	
0	**Amara.** From the starting-point of the route, at the mouth of the **Musharreh** Canal, the edge of the *khōr* (see introductory remarks above) is about 1 m. distant to N.
1½	Cross side canal.
2¾	Water-cut.
3¾	In June 1915 there was a large Arab camp here on both sides of canal. Irrigation cuts (dry in August 1915) on southern bank. Edge of *khōr* here about 2½ m. to N. in August 1915.
6	**Chabaseh** (?) Mound between ½ and 1 m. to N.
7	On opposite (r.) bank of Musharreh Canal is the head of **Umm Batūt** Canal running S. It is about 5 yds. wide and 4 ft. deep.
9¼	**Awīyeh** branch-canal crossed. It was about 10 ft. wide and 3 ft. deep in August 1915. In June it was said to be about 5 yds. wide. The canal runs NNE. to the edge of the *khōr*, about 1 m. distant. At the beginning of June

Miles from Amara	
	1915 the Turks brought guns across from the N. side of the *khōr* along a line running about NE.–SW. (along the Awīyeh Canal?) to this point. The *khōr* is here about 3 m. wide.
10½	Cross branch-canal, about 11 ft. wide and 2 ft. deep in June 1915. The *khōr* to N. is covered with reeds.
12	On opposite (r. bank) of Musharreh Canal, there is a 'grid-iron' of 4 or 5 canals, all fordable at the mouth in August 1915, and 5–8 yds. wide.
13¾	On opposite bank of Musharreh Canal, **Samariyeh** branch-canal, 10 ft. wide, 2½ ft. deep (August 1915).
14¾	On opposite bank of Musharreh Canal, **Jureimeh** branch-canal, 10 ft. wide and 3 ft. deep (August 1915).
15¼	For about 1 m. the l. bank practically disappears. There remains, however, a track passable, though bad, in l. w. season. It is suggested that guns and wheeled vehicles should be transported in boats from this point along the canal as far as a point nearly opposite Khir 'Ubeid, and thence NE. across the *khōr* (see under m. 16¼, below).
16	**Khir 'Ubeid** village on S. side of the Musharreh Canal, recognized for some distance by its conical mud tower. In this neighbourhood *Route* 8 b (m. 83¾) joins.
16¼	Here the route turns NE. across the *khōr*, which is about 2,000 yds. wide at this point. In June 1915 it was said to be waist deep in some places, but easily fordable for cavalry and infantry. In August 1915 there were apparently depths of 3–1 ft. on the line taken across the marsh. In summer, 1916, there was a dry gap about here.
18½	Camping-ground N. of the *khōr*. Desert track to Shush and Dizfūl *via* Duweirij is marked on recent maps as diverging to NE. The route to Ahwāz now turns ESE. parallel with the edge of the *khōr*.
24	Camping-ground on S. side of track.
31½	Stream running into the *khōr*.
32½	**Mezlik.** Camping-ground on the S. side of the track. The track appears to turn NE.
38	Stream running into the *khōr*.
39½	Stream. The track is marked here as running E.
40½	Stream.
42½	Stream.
43½	Cross **Shatt el-'Ama. Umm Chir,** a locality (no village)

Miles from Amara

on the r. bank of the Shatt el-'Ama. The Shatt el-'Ama was found to be dry in February 1914. See *Route* 10 c, m. 62.

From Umm Chir there is a channel for *bellams*, difficult to find, leading through the marshes to Biseitin.

Track skirts the edge of the marsh to S. To the N. are sand-hills covered with camel-scrub.

45½ Camping-ground on the N. side of the track.

46½ **Tha'ileh** (village?) on the N. side of track.

47½ Track now appears to turn in a general SE. direction, still skirting the edge of the marsh, and 3–4 m. from a line of hills about 300 ft. high running SE. Firewood is to be had on the hill-slopes.

53½ About here the track appears to bend SSE. to some distance.

56½ Camping-ground. **Biseitin,** a large straggling village about 2 m. to the SW. on the l. (southern) bank of the **Karkeh** River at the point where that stream changes its general direction from NW. to SSW. to flow through the marshes in several channels. The population of Biseitin is reported as 5,000 Beni Taraf, with 200 *mashhūfs*.

It was reported in 1911 that a strip of marsh ¼–1 m. broad intervenes between the edge of the desert along which the route runs and the r. (northern) bank of the Karkeh River: this marsh can be crossed at several points, one of which is opposite Biseitin.

Track continues about SE., on the edge of the desert, at some distance from the river, which is separated from it by marshy ground and canals difficult for mules and horses. The southern bank of the Karkeh is here much cut up by canals.

71½ **Khafajiyeh** on S. bank of Karkeh, a large village with several mud huts and some hundreds of reed dwellings. Resources estimated at 1,000 buffaloes, 300 cattle, 500 sheep, 100 *mashhūfs*. Here caravans in summer cross the river (no details as to crossing), and proceed along the S. bank, crossing numerous canals with minimum summer depth of 4 ft. In winter and spring it is necessary to keep on the N. side of the river as far as Kūt Seyyid 'Ali, or possibly Kūt Nahr Hāshim (Illah). See under m. 86½.

81½ **Kūt Seyyid 'Ali** on N. side of Karkeh River. Pop. 500,

Miles from Amara	
	150 houses. Resources estimated at 500 cattle, 5,000 sheep. Caravans apparently used to ferry here over the river, which was found in February 1914 to be 100 yds. wide 'and very deep'. Animals were swum across. Proceed along S. bank over level ground by well-marked track.
86½	**Kūt el-Hawāshim**, scarcely perceptible ruins at point where general direction of Karkeh bends from SW. to NW. Here old bed of the Karkeh takes off southward. There is no population here as a rule.
	Kūt Nahr Hāshim is about 4 m. to NE. on l. bank of the Karkeh (see above under m. 71½ and below under m. 95½). The river is reported to be fordable in places hereabouts.
	Follow either bank of the old bed of the Karkeh to
88½	**Seyyid Mūsa**, ruined village on E. bank of old bed of Karkeh. Follow well-marked track leading E. (alternative route to Amīnīyeh makes a détour to S. by Deh Liz wells).
95½	Cluster of rocks. Here track comes in from Kūt Nahr Hāshim (about 9 m. to NW. of this point). Proceed ESE. skirting the S. side of low hills known as **Manyūr.** To SE. lie Tel-i-Zibid and the sand-hills of Ram-i-Shumākhneh. Deh Liz wells on SE. side of these sand-hills.
98½	**Umm el-Hayyil** wells: good water 20-30 ft. below ground: only small quantities available.
104½	**Amīnīyeh** on r. bank of Kārūn opposite Bandar Nāzirī.
105½	**Ahwāz** on l. bank of Kārūn 1 m. above Nāzirī.

ROUTE 8 b

DIZFŪL—AMARA (100 M.)

Authorities:—Force 'D' Route Report, Serial no. 6 (Jan. 1916); Survey of Tigris River 1915-1916, Map no. 47. See also *Route* 8 a.

This track is difficult but practicable for all arms in the dry season, except between Dizfūl and Shush, where narrow culverts preclude the use of wheeled transport. The track is in parts difficult to find, and a guide should be taken. For alternative routes see under m. 0 and m. 19.

Water is good and plentiful. Supplies are very scarce.

Miles from Dizfūl

0 **Dizfūl.** General direction to Shush is SW.

A route to Shush alternative to that described in detail below goes by the Sagwand country. It fords the Diz one mile below the town. It then proceeds to **Dubandar** (5 m.) on the r. bank of the **Bāla Rūd**, a stream with a broad bed but very little water even in spring, seldom unfordable. From Dubandar the route runs by **Seyyid Ahmed** to **Shush** (18 m.).

Another route to Shush is that described in *Route* 7, m. 147–127.

To m. 10 track runs over an open plain, crossing numerous irrigation channels by brick culverts. Track is good, but, as the culverts are narrow, it is not suitable for wheeled transport.

10 **Jibar** village. From here the track descends to low ground forming the bed of the Diz river, and passes through a swampy tract. Here it crosses numerous streams and water-cuts by flimsy wooden bridges. The track is often difficult to find.

13 Ford the **Diz** river at the village of **Seyyid Mohammed** which stands on the r. bank. The ford at l. w. is about 300 yds. wide and 2 ft. deep. The current is not swift, approaches are easy, and the bottom is firm sand. In spring and after heavy rain the ford does not exist. There are no *keleks* nor boats here, but these may be obtained from Dizfūl.

From Seyyid Mohammed to Shush track lies over open country and crosses several irrigation channels. It is good except after rain.

19 **Shush.** Good drinking water from the Shūr stream at Shush. Milk plentiful: barley in small quantities only: *bhusa*, about 1,000 *shalifs* (large sacks). Wood plentiful. Stored in the castle at Shush in January 1916 were all materials for a mile of Decauville railway, besides 1,000 picks and 1,000 shovels.

From Shush to Merkez el-Halfayeh a better route for a large force than that described in detail below is said to be as follows:—Ford the Karkeh as in detailed itinerary below. Thence to **Dosalak** (16 m. from Shush): road practicable for all arms. Good and plentiful water at Dosalak: no supplies. From Dosalak to **Fukha** on l. bank of **Duweirij** River (41 m. from Shush) road practicable for all arms. Good water at Fukha from the river: no supplies. From Fukha to **Merkez** (64 m. from Shush) practicable for all arms, but ford over the Duweirij difficult after heavy rain.

Miles from Dizful	
	General direction to Khezār SW.: the road is practicable for all arms, but see under m. 30.
	Cross the **Shūr** (Shāvūr) stream at Shush, 50 yds. broad: several easy fords. Proceed almost due W. to
21	**Karkeh** river, ford 400 yds. broad, 2 ft. deep at l. w. Approach on l. bank through thick tree jungle. Bottom firm sand and pebbles. This ford can be crossed by laden mules at l. w., but does not exist in spring nor after heavy rain. Only one *kelek* at Shush.
	From r. bank of the Karkeh turn S. for 3 m., keeping parallel with and close to the river.
24	Turn SW., over open rolling downs. Track is difficult to find here, and a guide is necessary.
26	Cross **Abu Salabekh** nullah, which holds water in the spring only.
29½	The ground is marshy from here to Khezār.
30	Cross **Ghashab** nullah. Ramping would be needed here for wheels. The nullah always contains water, which is rather brackish.
35	**Khezār,** a grazing ground for camels: no village, and no supplies. Water from numerous wells (about 30 in all). It is found at about 6 ft. from the surface: more wells could easily be sunk. There are no appliances for drawing water. Grazing for horses, &c., can be obtained in the neighbourhood (even in January) from patches of *dhob* grass.
	From Khezār to Shatt el-Aghal the general direction is W. by S. The road is suitable for all arms, but see under m. 44. No villages nor supplies.
	Cross open plain.
41	Reach pass through the **Mushtak** (Abu Zarub) hills, which here run roughly NW.–SE. Road here crosses a few sand-hills. The rise is very slight and gradual, but at 1 m. to either side of the track the hills rise to about 400 ft. They are much broken in places.
	Against the western slopes of the hills, about 1 m. due S. of the track, well and spring named **Umm el-Hayal,** giving drinkable though slightly brackish water.
43	Cross a nullah, which does not form an obstacle. Track runs alongside nullah for about ½ m.
44	**Ublilūt** pools. These are two large pools of rain-water which lie close to the S. side of the track.

Miles from Dizful

Here a tract of low sand-hills is reached which extends to the Shatt el-Aghal. The going in this tract would be heavy for field guns and wheeled transport.

53 **Shatt el-Aghal.** No village nor supplies: three wells with good drinking-water.

From here to Merkez el-Halfayeh the track is difficult to follow, and a guide is necessary.

From Shatt el-Aghal to the Duweirij the route is practicable for all arms, but see under m. 58½. Track runs in a general W. direction for 5½ m. over an open undulating plain.

58½ The Jebel Fakka lies about NW. by W. (nearly 300°) from here. Direction changes to WSW. to m. 65½. The ground now drops to a lower level and crosses a flat plain, which is covered with tamarisk jungle for the first 3 m., and after that is quite bare. Here and there small nullahs and water-cuts are crossed. Slight ramping of the nullah banks would be needed for wheels.

65½ Direction changes to SW. by S., to m. 72.

72 **Duweirij** River. Cross by ford. The river-bed is nearly 1 m. in breadth from bank to bank. Most of it is occupied with shallow swamp. The bottom is firm, but very uneven and difficult going for laden mules. The stream is near the r. (S.) bank, and here the water deepens. In January 1916 the depth in the stream was 4½ ft., in consequence of recent heavy rain. The river is reported to be much shallower in l. w.

The crossing of the Duweirij swamp and stream would be practicable for all arms, but difficult for wheels.

From the Duweirij the track to Merkez el-Halfayeh goes S. by E. (It would appear that 3 or 4 m. from Merkez this route crosses *Route* 8 a.)

81 **Merkez el-Halfayeh** on the opposite (S.) side of the Musharreh Canal.

Proceed NNW. along the Musharreh Canal, which lies to l.

83¾? Near the point where the canal bends W., join *Route* 8 a (about m. 16¼), and follow it into Amara. For details see *Route* 8 a, m. 16–0.

100 **Amara.**

ROUTE 8 c

FROM THE TIGRIS BETWEEN AMARA AND 'ALI EL-GHARBI TO THE PERSIAN HILLS

Authorities :—Route Reports and other recent information.

(i) From the Tigris between **Amara** and **Kumeit.**—Communication between the Tigris and the Persian Hills is here obstructed in the flood season by the marshes which run parallel with the l. bank of the river. The southern part of this marshy tract is known as the Khōr Yazreh, the northern as the Khōr Shaureh. In July 1916, after about two months of decrease, the Khōr Yazreh was ½ m. wide and 7 in. deep, but owing to its sticky bottom was still impassable to cavalry: in the second week of August, however, it offered no obstruction to cavalry. The Khōr Shaureh in July was 2,000 yds. wide and 11 in. deep, apparently at a few miles distance from the river: its bottom was sufficiently firm to allow the passage of cavalry. The N. branch of the Kharkareh is said to run into the Khōr Shaureh. On a map (T. C. 43) dated July 1, 1916, a route is marked running from a point on the l. bank of the Tigris about 5 m. below Kumeit across the Khōr Shaureh by the Besha Mound (about m. 20) to Kuweit (about m. 41 from the Tigris), where the Tyb River debouches from the hills. On Kuweit see below.

(ii) From the Tigris between **Kumeit** and **'Ali el-Gharbi.**—On this stretch of the river the floods on the l. bank dry more quickly than those between Amara and Kumeit. At the end of June the l. bank was here reported to be completely dry, and, so far as regards the ground, troops and transport could move anywhere from the river to the Persian hills.

Mudalīl—Deh Lūran *via* Kuweit

The route apparently starts from the l. bank opposite Mudalīl tract (see *Route* III B, m. 40½). As far as Kuweit (m. 35) the ground in June was passable throughout for light carts, but no water was to be found between the Tigris and Kuweit. Arabs cannot live in this region during the hot weather. At Kuweit water is plentiful from the Tyb, but is very bad and brackish: better water from tributaries of the Tyb is to be found in the hills beyond. A hundred men might obtain supplies at Kuweit for a few days. The road from Kuweit to Deh Lūrān would need some preparation for carts. Water apparently plentiful. On Deh Lūrān see *Route* 10 a, m. 79–80¾.

ROUTE 8 d

'ALI EL-GHARBI—DEH LŪRĀN

Via KUWEIT

Authorities:—Force 'D' Route Reports and other information of June, July, and August, 1916.

The account given below of the two routes from 'Ali el-Gharbi to the Tyb near Kuweit describes their condition in July 1916. The ground traversed is generally level, but is said to be very deceptive, having folds where men could hide.

The dry river-beds mentioned in Alternative (ii) would prove obstacles in the rains.

The defile of the Tyb above Kuweit is passable for infantry, cavalry, and pack-mules in the l. w. season. In flood time the whole bed is completely covered with water, and the defile is impassable even for men going singly on foot. There is apparently no other route practicable for troops through the hills in that neighbourhood.

On Alternative (i) between the Tigris and the Tyb river there is no water fit to be drunk in any quantity. On Alternative (ii) good water is said to be obtainable in the rainy season (December–March) in the Kuweiseh river-bed. The Tyb at Kuweit could not be drunk by men for more than two days together, except perhaps in the rainy season, when it is said that it might be drunk for a longer period without ill effects, or unless wells were sunk near the river.

It is said that better water is to be obtained in the hills from tributaries of the Tyb.

On both routes to Kuweit grazing was found all the way in July, except at small bare patches here and there. Brushwood for fuel is not obtainable until the Tyb is reached. No supplies *en route*.

The grazing near the river is poor. Wood is plentiful from the brushwood in the river-bed: sticks 3 in. in diameter can be obtained.

Kuweit is a ruined village, now merely a mound, about ½ m. from the hills. There is good grazing there, but no wood nor water.

The Tyb River, known also in its upper reaches as the Maimah River, rises in the interior of Pusht-i-Kūh, and has its sources in some large springs 1 m. W. of Maimah village, which is 54 m. in a direct line from Bedrah on a bearing of ENE. (72°). After traversing the Deh Lūrān plain the Tyb finds its way through the Pusht-i-Kūh foot-hills, and thence debouches on to the Mesopotamian plain. From the neighbourhood of Kuweit it proceeds in a southerly direction, forming a marsh in the plain, and coming to within a few miles of Amara. Short of that place the marsh turns E., and the waters of the Tyb

flow into the Musharreh Canal about 1 m. W. of Khir 'Ubeid (see *Route* 8a, m. 15–16).

At its source and in its upper reaches the water of the Tyb, or Maimah, is sweet and of good quality. In its passage through the foot-hills it becomes impregnated with sulphurous matter, with the result described above.

Normally the river is a clear-running stream containing a large number of fish.

(i) Direct Route to Kuweit *via* Dahela (27½ m.)

Miles from 'Ali el-Gharbi	
0	**'Ali el-Gharbi.** General direction to Dahela slightly S. of E. (94°). The route lies over an open plain passable for all arms (July): in places there are patches of saltpetre crust which would be heavy going for wheeled transport.
12	**Dahela,** a group of eight hillocks about 10 ft. high. The wells are 50 yds. E. of the most easterly hillock. In July 1916 there were 10 dry holes, one usable well about 5 ft. square with water 4 ft. 6 in. deep, and another well with very dirty brown water. Rough water-troughs have been made round the wells. There are also three other wells, with water in July, ¼ m. to W. The water at Dahela is very sulphurous: it cannot be drunk in any quantity. Horses will drink it.
	Proceed over grassy plain passable for all arms. Bear ESE. (113°) to m. 16½.
13	Ground rises.
16½	Pass **Imnezeliyeh,** seven water-holes with troughs. Water in July. It has a very strong sulphurous smell and taste.
	Bear E. by S. (103°) over open grassy plain to
20½	**Rattrah,** five water-holes with troughs. Water in July. It has a sulphurous smell and taste, but not so marked as that of the Imnezeliyeh water. Bear E. by N. (85°) to the Tyb.
24½	Pass 500 yds. to N. of a mound, and enter a small scrub jungle.
27½	**Tyb** River. The stream here runs roughly S. from the hills, which are about 1 m. distant. The water-course is about 20 ft. below the surrounding country, and is about 100 yds. wide. It is covered up to the hot weather channel with brushwood about 8 ft. high. In July the stream was found to be about 40 yds. wide, with an average depth in the middle of 2½ ft., and a mean speed of 1½ m. p. h. The bottom is firm, with smooth pebbles and stones.

Miles from 'Ali el-Gharbi

The water in the low season has a full dose of purgative salts in each gallon. Chemical analysis in August 1916 proved that the water then, even after treatment by the lime process (which made a slight improvement), could probably not be drunk by men for more than two days together. For a longer period, wells should be dug 3–10 ft. deep, 10–15 yds. from river's edge: water fresh at first, becoming brackish gradually.

(ii) NORTHERN ROUTE TO KUWEIT, *via* QARA TEPEH (36½ M.)

0 **'Ali el-Gharbi.** Bearing to Qara Tepeh NE. by N. (30°). Route lies over a flat plain, on which 'Ali el-Gharbi can be seen from horseback at a distance of 12 m.

Hereabouts a dry water-course is crossed running from NW. to SE.

12 **Qara Tepeh,** a conspicuous hill about 50 ft. high and 100 yds. in diameter. There are some sangars on it and traces of camps near it. There are 12 wells, about ½ m. N. of the hill. Of these two contained water in July 1916: the water was then very disagreeable and quite undrinkable.

From here the bearing to Abu Ghoreib is SE. by E. (120°). Cross flat grassy plain.

16 The ground becomes much broken and has a certain amount of scrub.

21 Cross small dry river-bed, 20 yds. wide, 10 ft. deep, passable for carts.

26 **Abu Ghoreib,** dry river-bed, which can be crossed by carts as the banks are sloping. It is about 70 yds. wide and 50 ft. deep. It carries water during rain.

From here to Kuweiseh bear ESE. (110°), over open plain.

31 **Kuweiseh,** river-bed, about 70 yds. wide and 20 ft. deep, with good water in the rainy season. The approach is difficult for carts as the banks are very steep. The going near the river-bed is very difficult as the ground is full of holes. The bed continues for about 1½ m. to S. of the place where it was crossed in July 1916.

From here bear SE. (133°) to the Tyb. The going is good, over a flat plain. Good grazing.

36½ **Tyb** river near **Kuweit.**

Miles from 'Ali el-Gharbi	Mileage continued from Alternative (i)
$28\frac{1}{2}$	Enter the foot-hills by the bed of the Tyb, passable, in the low season only, for infantry, cavalry, and pack-mule transport.
	The defile of the Tyb between Kuweit and the Deh Lūrān plain is about 10 m. in length, and its breadth varies from 300 to 500 yds. The hills on either side are very steep and broken, running to a height of 500–700 ft. above the river-bed. They are of sandstone of terra-cotta colour.
	In the low season the river winds from bank to bank, leaving most of the bed dry. The dry part is covered with water-worn pebbles and small boulders, and contains a considerable amount of low scrub. On account of its windings the stream has to be often forded. In the flood season the whole bed is filled, and the defile is impassable even for men going singly on foot.
$38\frac{1}{2}$	Reach the Deh Lūrān plain.
?	**Deh Lūrān.** See *Route* 10 a, m. 79 and m. $80\frac{3}{4}$.

ROUTE 8 e

'ALI EL-GHARBI—DEH BĀLĀ ($108\frac{3}{4}$ M.)

Authorities:—Force 'D' Route Report, Serial no. 10 (1916); *Routes in Persia* vol. iii, no. 103 (Report of November, 1909).

In May 1916 a *sotnia* of Russian Cossacks (110 men with 10 pack-horses) traversed approximately the route given below, coming from Māhīdesht by Deh Bālā. For the first part of their route, N. of Deh Bālā, see *Route* 9. The details are mainly from *Routes in Persia*, vol. iii, no. 103; they are said to have been borne out by the Russians' experience. The road in the hills is passable for pack-transport only and is sometimes difficult for that. Light snow was met with in May near Marbarreh (see under m. $85\frac{3}{4}$). Supplies were purchased by the Russians from the villages *en route*, but this would be impossible for a larger force. Good water was reported by Russian officers to be obtainable everywhere except between 'Ali el-Gharbi and the hills: the report in *Routes in Persia*, however, mentions that the water at the Chashmeh Gumbad-i-Khatun (m. 38) and from the Ganjān Cham river at Dum Qalameh (m. $64\frac{3}{4}$) is sulphurous. Good grazing found everywhere in May except for 12 m. on the Deh Bālā side of the Shāh Nachir hills. Fuel abundant in the hills.

Miles from **'Ali el-Gharbi**

0 **'Ali el-Gharbi.** General direction to m. 38, N. by W. It is not stated what route the Russians followed between 'Ali el-Gharbi and the Chashmeh Gumbad-i-Khatun, which is about E. by S. of Changulak. The distance given in the Force 'D' Route Report is 38 m. On I.D. maps 2 H and 2 K the distance in a straight line is about 39 m. No water was found between 'Ali el-Gharbi and the hills (about 22 m.) and there was no defined track on the plain.

Possible routes from 'Ali el-Gharbi to Changulak would apparently be the following:—

(i) *Via* **Bāgh-i-Shāhī.** As far as Bāgh-i-Shāhī (m. 35) reported passable for all arms (July). No water till Bāgh-i-Shāhī. For that place see *Route* 8 f. From Bāgh-i-Shāhī to **Shehabi** Head on the Wādi (Āb-i-Changulak), see *Route* 8 f, p. 244. From Shehabi Head a track along the l. bank of the Wādi (two footpaths 3 ft. apart) leads through the hills to **Changulak** (m. 50): the track is said to be passable for laden camels. Water plentiful in the hills. The hills beyond Bāgh-i-Shāhī are devoid of trees. The first low range is easy, the one behind more difficult, 'resembling the hill-country of the NW. frontier of India'.

(ii) *Via* **Bisheh Daraz.** No water in the plain, but abundant supply in the hills. The track in the hills is passable for pack transport only. From Bisheh Daraz (m. 28?) follow *Route* 10 b to **Changulak** (about m. 59?).

38? **Chashmeh Gumbad-i-Khatun,** a sulphurous spring: yellowish water. This is at the head of the nullah mentioned in *Route* 10 b near Changulak. (Force 'D' sheet 2 K makes this spring about 3 m. from Changulak.) The Russians seem to have camped here.

38½? **Changulak** (see *Route* 10 b, m. 35).

Proceed NW. up dry nullah by an easy path.

41¼ Ascend out of nullah and proceed WNW. over open plain.

43½ *Amlch* (camp) of the Vali of Pusht-i-Kūh in May 1916. The Russians halted here for 2½ days.

For further details from this point to Deh Bālā see *Routes in Persia*, vol. iii, Route 103.

Directions from here to Gavi are: W. by N. to m. 48¼, thence WNW. to 50½, thence NNW. Road over plain. Dry nullahs at m. 49½ and m. 52½.

54 **Gavi,** two stone *ambārs* with roofs. About 100 'four-walls', over which the nomads pitch their tents. No inhabitants in winter. No supplies or fuel. Water plentiful from streams.

Miles from 'Ali el-Gharbi

From here to Dum Qalameh the road is over broad level plain easy and passable by wheels. Directions WNW. to m. 56¾, then W. to m. 59½, then NW. to m. 62¾, then NNE. At m. 56¾ a small stream is crossed. At m. 59½ a road branches ESE. to Deh Lūrān, but in November it has no water on it. At m. 60 cross large dry nullah.

64¾ **Dum Qalameh** (alt. 1,450 ft.) at mouth of the Tang-i-Ganjān Cham. Here in Nov. 1909 the Vali of Pusht-i-Kūh had his *amleh* (camping-ground). Abundant water, strongly impregnated with sulphur, from the Ganjān Cham river. A stage was made here in May 1916.

From here to Amirābād the general direction is N. by E. The road is easy for pack transport, but impassable for wheels. Ascend the Tang-i-Ganjān Cham, crossing and re-crossing river-bed and over spurs. At m. 71¾ leave the main stream of the Ganjān Cham (here 30 yds. wide and 8 in. deep in Nov. 1909), and ascend a branch of that river, between high steep cliffs. At m. 72¾ ascend out of this gorge and continue up valley by good track.

75¼ **Amirābād.** In May 1916 there was here only a small village, mostly in ruins. Abundant water from a cut from the Ganjān Cham flowing through a garden of the Vali's.

From here, according to Force 'D' Route Report, it is 4 m. to Mil-i-Allah Weis (no village: single brick tower), which was passed on the Russians' march. I.D. sheet 2 K marks the place S. of Amirābād. From Mil-i-Allah Weis Force 'D' Route Report makes it 14 m. to Marbarreh by 'the middle road of the three marked on Degree Sheet 2 K'. But the map here is difficult to reconcile with *Routes in Persia*, vol. iii, no. 103, which gives the following route from Amirābād:—

Directions to Imāmzādeh Khāseh 'Ali are: NNW. to m. 82¾, and thence NW. Road fit for wheeled transport, except at m. 82¼ (ascent from dry ravine), and at m. 83½ and m. 84¾ (descent into and ascent from dry ravine: could easily be made practicable for wheels).

85¾ **Imāmzādeh Khāseh 'Ali** (or 'Ali Sāleh). Water in small quantities from stream to SW. Encampment all the year round.

From here to Cham Ābādi the directions are N. to m. 89¼,

Miles from 'Ali el-Gharbi	
	ENE. to m. 95¼, NNE. to m. 96¾. Road fit for wheels to m. 89¼, where it enters hills; thence good for pack transport except at m. 92¾–93¾.
90¼	**Tang-i-Niaz,** 20 yds. wide, with dry water-course down the centre.
	The hill-country to ESE. of this point is called Marbarreh and Shāh Nachir: 'Marbarreh' was a point on the Russians' route in May, 1916; it is said that it would make a good hill-station (alt. 4,900 ft.). According to Force 'D' Route Report the distance from Marbarreh to Deh Bālā is 11 m.
96¾	**Cham Ābādi:** small permanent settlement. Abundant water from the Āb-i-Chamil.
	From here to Deh Bālā the directions are:-NE. to m. 100¼, NNE. to m. 101¼, E. to m. 102¾; thence NNE. The road is impassable, as a whole, for wheels, and difficult for pack transport in the stony Tang-i-Khurnuk (or Khuradan) in first 4 m., and at m. 105½ for ¼ m. before a crossing of the Āb-i-Chamil.
108¾	**Deh Bālā.** See *Route* 9, m. 116¼. That route gives the rest of the Russians' march (*Route* 9, note under m. 116¼).

ROUTE 8 f

SHEIKH SA'AD—BĀGH-I-SHĀHĪ

Authority:—Force 'D' Route Report, Serial no. 15 (September 1916).

Bāgh-i-Shāhī was destroyed two or three generations ago by Lurs of the Pusht-i-Kūh. The neighbourhood, which is irrigated from the Wādi (Āb-i-Changulak or Changuleh), was long in dispute between the Vali of Pusht-i-Kūh and the Turks. In 1914 the Boundary Commission awarded it to the Turks, deciding that the frontier should pass just above the Shehabi Head, where the irrigation channels take off from the river (see below, p. 244). Since the beginning of the war, however, the Vali has built a new fort near the ruins of Bāgh-i-Shāhī in order to re-assert his claim.

Of the two alternative routes given below, the first (eastern), *via* Seyyid Mohammed, is the better going. It is passable for all arms

at all seasons, except in the first 3 m., where the ground is liable to flood in the high-water season if the Tigris *bunds* are breached. Heavy rain would greatly impede wheeled traffic.

The second (western) route through the belt of scrub on the l. bank of the Wādi (Lower Āb-i-Changulak) is heavier and rougher going. Patches of soft soil are numerous, but could be avoided. This route is apparently not impassable for guns and carts.

The water-channels met with on both routes are supplied from the Wādi, and are wet or dry at the will of the inhabitants. Most of them apparently derive their water from the Shehabi Head above Bāgh-i-Shāhī (see p. 244). Chitab's channel, however, takes off 4 miles below Mohammed ibn Jabar (see Alternative (ii), m. 13). When the channels are wet, they would be serious obstacles for cavalry. They are often bordered by high reeds affording good cover from view.

Water is available only from the Wādi and its channels. It is all of the same quality and brackish, but seems to improve with keeping and in the cool of the day. Horses drink it readily. It seems to have no ill effects on men, and the natives use it (see Alternative (ii), m. 17).

Grazing is good. There is much *dhob* grass along the channels.

In Sept. 1916 there was a considerable amount of *bhusa* buried on the sites of deserted villages.

Brushwood for fuel is plentiful.

There are sheep in the hills beyond Bāgh-i-Shāhī.

(i) *Via* Seyyid Mohammed (28 m.)

Miles from **Sheikh Sa'ad.**	
0	**Sheikh Sa'ad.** General direction to m. 10 slightly E. of N. The first 4 m. are rough going over ground covered with low grass and bushes. This stretch could easily be made passable for motors. The first 3 m. are liable to floods in h. w. if the Tigris *bunds* are breached: it is said that the area affected would be small.
4	From this point onwards the route crosses open bare *pat* country (loamy soil, very heavy after rain).
10	**Seyyid Guzar**, solitary square mud town on the site of a deserted village. Here the **Seyyid 'Ali** water-channel, dry in September, 3 ft. broad, 2 ft. deep, marked by a line of low bushes, is struck. The general direction now changes to NE. parallel to the channel.

Miles from Sheikh Sa'ad

14 The **Seyyid Mohammed** water-channel, dry in September, is crossed, and the direction changes to N. towards

16 **Seyyid Mohammed** shrine, with white domed roof. It stands inside a rectangular enclosure, 30 yds. by 15 yds., on high ground overlooking the country to NE. and W. There are traces of huts near it, but no one lives there now.

General direction to Bāgh-i-Shāhī, N.

N. of the shrine the ground breaks suddenly into a nullah 100–800 yds. broad with banks of varying steepness 8–10 ft. high. Route follows this nullah for about 1 m.

17 The nullah here, or a little farther on, merges into an open plain dotted about with bushes generally about 18 in. high and 4–5 ft. apart: no trees.

21 Cross slight depression running NE.–SW., containing many patches of grass. A dry water-channel, with tall green rushes, was crossed here: it had evidently been recently flooded.

24 **Nahr Seyyid Mohammed,** marked by green rushes 6 ft. high which make it conspicuous and block the view beyond. In September it was found to contain a good flow of water 2–3 ft. broad and 1 ft. deep. Excavated earth alongside made watering difficult except at breaks here and there. Good *dhob* grass is plentiful along this stream. The channel would delay cavalry.

26 Bushes decrease, till in the neighbourhood of Bāgh-i-Shāhī the ground is quite bare.

28 **Bāgh-i-Shāhī** ruins, covering an area of about 600 yds. by 400 yds.

Apart from the Ziyāret Kaka 'Ali, a domeless shrine in the western part of the ruins, only a few broken mud walls remain.

A track to Changulak leads up the l. bank of the Wādi (see p. 239).

Route 10 c crosses here.

The Vali of Pusht-i-Kūh's fort lies 2 m. to NE. (ENE. ?) of Bāgh-i-Shāhī. It was built since the beginning of the war. It is about 70 yds. square, with walls 15 ft. high and an imposing gateway. Some 25 Arab shelters are clustered along its NE. side, apparently for the garrison and its women and children.

Miles from **Sheikh Sa'ad**

The Shehabi Head on the Wādi River is about 4 m. from Bāgh-ī-Shāhī. At m. 1 the ends of six raised irrigation channels, running from the N., are passed: one working, with a 10-ft. fall of water. The others in fair repair, and their water-wheels could probably be put into working order without much difficulty. Beyond this point four channels are crossed, 2–3 ft. wide and 2 ft. deep: two contained a fast-running stream in September. The country is open and bare. At m. 4 the **Shehabi Head** is reached. Here the Wādi runs in several streams down an open water-course of round stones 2–3 in. in diameter. The water-course has no banks, and is about 800 yds. broad. There are three groups of streams, each split up into minor channels. These were 6–25 ft. broad and up to 18 in. deep in September. The eastern and western groups of streams are led off into side channels, as shown in I.D. map 2 L, passing E. and W. of Bāgh-ī-Shāhī. The water in the Wādi is all clear, but distinctly brackish.

A conspicuous patch of brushwood, ½ m. square, with bushes 3–5 ft. high on the r. bank of the Wādi is visible from far off. In the distance both it and one or two other patches in the neighbourhood have the appearance of trees along the foot of the hills.

The country between the Shehabi Head and the Vali's fort (3 m. distant) is bare and open, and intersected by five channels. The last mile towards the fort is covered with round stones 2–3 ft. in diameter lying about 6 in.–1 ft. apart.

(ii) *Via* Mohammed ibn Jabar, to the Vali of Pusht-i-Kūh's Fort

0 **Sheikh Sa'ad.**

General direction to m. 8, NNW.

For the first 3 m. the ground is liable to flood, and is covered with coarse grass and low prickly bushes: the going is rough. Then over open country, apparently easier, for 4 m.

7 Enter belt of brushwood extending along, and for 1 to 2 m. inland from, the l. bank of the Wādi.

8 The tents of Wādi camp were in sight from this point in September 1916.

Direction changes to NE. Route runs along the l. bank of the Wādi, through the belt of brushwood, which is broken here and there by cultivated clearings, and the sites of recently deserted villages. The going is rough; and there are patches of soft soil, which may, however, be avoided. Several water-channels are crossed.

13 Head of **Chitab's** water-channel, which takes off from the Wādi. This is the principal irrigation channel for the country between this point and the Tigris. Minor channels branch off from it.

Miles from Sheikh Sa'ad

17 **Mohammed ibn Jabar,** a few mud walls, and traces of huts, in a clearing on the l. bank of the Wādi. A considerable amount of half-buried *bhusa* was found here in September 1916.

The l. bank of the Wādi is here a 20-ft. cliff with two ramps cut down to the water. The opposite bank is not so steep, but would need ramping even for pack-animals, and it would take 4 hours' work by 200 men to make it fit for guns. The banks are about 60 yds. apart; the stream was 20–30 yds. wide and 1–2 ft. deep, with a flow of 2–3 m. p. h., in September. The water is very clear but brackish: it has caused a crust of white salt to form along the banks. The brackish taste was found to be less noticeable when the water was cold. The Arabs said that its quality was better than that of the Tyb water. The authority says, 'I personally drank about three water-bottles full and suffered no ill effects, though the taste in the warmth of the afternoon was distinctly unpleasant'. Horses drank it readily.

General direction to m. 26½, NE. (The white dome of Seyyid Mohammed is visible from here to Bāgh-i-Shāhī.)

The route diverges from the Wādi, still passing through bushes and brushwood, which, however, decrease in density and height. The going is rough. Patches of soft soil which can be avoided. The country is irrigated from the Nahr Ganjija and its offshoots running in a general SW. direction. Their course is generally marked by a line of high green reeds or bushes and *dhob* grass.

25 Cross an offshoot of the Nahr Ganjija (dry in September).

26½ Cross the **Nahr Ganjija,** reed-filled channel, dry in September. Direction changes to ENE.

The country is still dotted with bushes, 1–3 ft. in height.

Between this point and m. 28 there are still patches of soft hummocky soil, very difficult for wheels. From m. 28 to m. 29, though these patches are apparently no longer found, the ground is rough, giving the appearance of plough, and full of saltpetre.

29 From this point the country is open loamy plain with a few bushes. Pass **Bāgh-i-Shāhī** ruins.

30 Ford the **Nahr Seyyid Mohammed** (see route (i), m. 24).

31 Vali's Fort (see above, p. 243).

ROUTE 8 g

SHEIKH SA'AD—BEDRAH (52 M. ?)

Via SEYYID 'ALI

To Seyyid 'Ali (about 11 m. W. of Bāgh-i-Shāhī) there are alternative tracks.

(i) Follow *Route* 8 f (i) to Seyyid Mohammed (m. 16). The line of the route from here is not known. Seyyid 'Ali lies to NW. of Seyyid Mohammed, perhaps at m. 31–32 from Sheikh Sa'ad. The Wādi river would have to be crossed (1–2 ft. deep in the low season: for the quality of the water see *Route* 8 f (ii), m. 17).

(ii) Follow *Route* 8 f (ii) to the l. bank of the Wādi (m. 8). Where the route crosses the Wādi is not known.

Seyyid 'Ali is apparently about 30 m. SE. of Bedrah. The road to the latter place is passable for all arms. Water said to be plentiful: quality not known.

NOTE.—A third possible route from Sheikh Sa'ad to Bedrah would be by Bāgh-i-Shāhī (*Route* 8 f), and thence by Darreh Malih and Seyyid Hasan (see *Route* 10 c, m. 173–202). This route passes over difficult ground between Bāgh-i-Shāhī and Seyyid Hasan: see *Route* 10 c, under m. 189. The total distance from Sheikh Sa'ad to Bedrah by this way would be about 70-75 m.

ROUTE 9

KUT EL-AMARA—KIRMANSHAH (201¼ M.)

Via ZORBATIYEH

Authorities: Routes in Persia, vol. iii, nos. 94 and 104. Force 'D' Route Report, Serial no. 10 (1916). From Zorbatiyeh onwards only a general account of the character of the various stages is given here.

This road is reported to be well frequented in spite of its difficulties. It is suitable for mule and donkey transport only. Guns can pass as far as Zorbatiyeh (m. 61½). Donkeys seem to be the transport most used by the natives on the route. From Huseiniyeh onwards the road traverses a succession of very difficult defiles and passes. In the spring, when the rivers are in flood, the road is probably closed in several places.

Some supplies are usually available at the villages on the route, but probably in small quantities only. Water is found throughout, but up to Deh Bālā is often brackish. Grazing was found to be good in May 1916 beyond Deh Bālā. Fuel is obtainable in the hills, but is generally scarce at the halting-places.

In the hills the climate is pleasant in August, the hottest time of year. Towards the end of October the rainy season begins, and continues for about a month. Then snow sets in and remains on the ground for $2\frac{1}{2}$-3 months.

Miles from **Kut el-Amara**	
0	From **Kut el-Amara** the route takes a general N. direction to Jessān. Two authorities, who traversed this stage in August 1888 and October 1897 respectively, seem to have followed somewhat different lines. The authority of 1897 reported his route passable for guns.
	The soil is a rich alluvial clay cut up with the remains of old canals, and for the first few miles is covered on both sides of the road with low vegetation, including grass.
	The route crosses the marshy belt at the W. end of the Khōr Suweikīyeh; for this marsh see note at end of route.
21	Desert with scanty herbage.
33	Herbage begins to improve.
35	From this point onwards a number of irrigation canals are crossed: in August a few held water, though the majority were dry: in October all were dry.
41	**Jessān** (alt. 98 ft.), a town of about 400 houses administered by a Mudir. Its population is largely Kurdish. It is situated on a low mound, with a number of date-gardens adjoining it. Water in abundance from a canal, described as brackish, though drinkable. Numerous flocks have been seen grazing in the surrounding plain. Troops can encamp anywhere in the vicinity.
	Want of water and supplies makes Jessān the first stage for travellers on this route. From Jessān the route takes a general NNE. direction to Bedrah across a level plain. The road is good, and passable for guns.
42	Jessān date-gardens end.
48	Pass an irrigation stream: water plentiful; several small irrigation channels are crossed by small wooden or concrete bridges. The river **Ganjān Cham** gradually

Miles from **Kut el-Amara**

approaches road from the l. Road then runs along r. bank of river: numerous canals to l.

54 Opposite Bedrah, cross river, 500 yds. broad in August, running very shallow over a gravelly bed with small channels: easily fordable. It is said to be sometimes quite dry.

Enter **Bedrah** (alt. 444 ft.) on the l. bank. Pop. 800. Water slightly brackish, but drinkable; it is purer on the northern outskirts of the town, on the l. bank. The place is surrounded by date and orange gardens extending for 2 m. from either bank, and surrounded by a mud wall 15–20 ft. high with watch-towers at intervals. In 1888 the inhabitants were all Shiahs, except the sheikh and his family, who were Sunnis. About 1905 the population of Bedrah was said to be Kurdish. A Turkish *zaptieh* post of 100 men was stationed here.

From Bedrah the route goes in a general ENE. direction to Zorbatiyeh. The road is good, leading over an open level plain. At first it follows l. bank of the river.

57¼ Cross **Ganjān Cham** River, about 50 yds. broad, and a few inches in depth, with stony bed and very easy banks (October).

Route follows r. bank (authority has 'left bank'), crossing several small irrigation cuts.

(Another authority, August 1888, made a détour to N. to avoid irrigation cuts, making the march from Bedrah to Zorbatiyeh 22 m.)

61½ **Zorbatiyeh** (alt. 444 ft.): Turkish frontier town, of about 300 houses of sun-dried brick, surrounded by extensive plantations of date-trees, and situated on a level plain. It contains a few shops. Water is plentiful, flowing in cuts from the Ganjān Cham: it is slightly brackish, but drinkable. The circle of date-gardens round the town is about 2 m. in diameter. Each garden is surrounded by a high mud wall, with watch-towers. The inhabitants are mainly Arabs: some Lurs also live here.

From Zorbatiyeh the road at first runs over level ground, intersected by several irrigation cuts with soft bottoms.

70½ Turco-Persian frontier as settled in 1914. Below this point the frontier runs along the bed of the Ganjān Cham for about 12 m.

Miles from Kut el-Amara

The track enters the hills, ascending the Ganjān Valley, and becomes impassable for artillery. (For details see *Routes in Persia*, vol. iii, loc. cit.) The Ganjān Cham has to be avoided by a détour in the spring.

76 **Huseiniyeh** (alt. 1,000 ft.). Winter residence of the Vali of Pusht-i-Kūh, the ruler of the Faili Lurs.

Water from the river. Chickens, bread, and fruit procurable.

For the route from Huseiniyeh to Deh Bālā, see *Routes in Persia*, vol. iii, no. 94.

From Huseiniyeh to Chīni Mālik (general direction E. of N.) the road is impassable for guns but fair for laden mules. A détour is necessary when the Ganjān Cham River is in flood. The floods seldom last for more than one or two days.

87¼ **Chīni Mālik**, a spring on r. bank of a stream, with slightly brackish but drinkable water. A number of small springs in neighbourhood. Firewood from hills. Grazing, except in autumn.

From Chīni Mālik to Chambeh Valley (general direction N. with a loop to W.) the road is on the whole good, except on two bad stretches (at 1¾ m., and 11¾–13¼ m.) which are impassable for guns.

105 **Chambeh** Valley. Troops can camp anywhere in the valley. Water and firewood plentiful, grazing good.

From the Chambeh Valley to Deh Bālā (general direction NE.) the road passes through a rocky defile called the Gardān-i-Khurnuk, and is impassable for guns and difficult for horses and laden mules owing to its narrowness and abrupt ascents of 2–3 ft. over smooth rock. Blasting in about twenty different places, each less than 5 yds. in length, might make it good for laden animals.

116¼ **Deh Bālā** village (alt. 5,100 ft.), situated in an extensive valley at the foot of the Manisht Kūh. There is room for a large force to camp here. Water plentiful from large springs, firewood from the hills. Supplies plentiful in summer, when the Vali of Pusht-i-Kūh resides here. The winter traveller could obtain *bhūsa*, *tibbīn*, and grain with the Vali's permission only. Other supplies in small quantities. Routes to Qal'ateh (see *Routes in Persia*, iii, no. 91).

Miles from Kut el-Amara

The Vali has here 2 houses and 3 *qal'ahs* (forts) situated in gardens. During his stay here in the summer months, his followers camp in booths of boughs and branches.

For the route from Deh Bālā to Kirmanshah, see *Routes in Persia*, vol. iii, no. 104.

In May 1916 a *sotnia* of Russian Cossacks (110 men with 10 pack-horses) rode from Māhīdesht on the Kirmanshah—Baghdad road (vol. iii, *Route* 28 a, m. 205½) to Palāngīr *via* Zailan (see first note at end of this route), and from Palāngīr to Chārduvār by the route described below, from *Routes in Persia*, vol. iii, no. 104. Between Chārduvār and Deh Bālā the Russians seem to have followed more or less the route described in *Routes in Persia*, vol. iii, no. 94, stage 8. According to Russian officers, the 'Tang-i-Duarnan' there mentioned is called the Tang-i-Ghunyan. The section of road from this *tang* to Deh Bālā (about 20 m.) was found very difficult. The *sotnia* bought supplies from villages *en route*, but this would be impossible for a large force. Good water and grazing obtainable throughout. Fuel from the hills. For the rest of the Russians' route to Deh Bālā see *Route* 8 e.

From Deh Bālā to Asyāb-i-Mūsa (general direction NNE. to m. 120¾, then E.) the road has to cross a pass (Gardān-i-Akhūr Sāfid, or, at its summit, Gardān-i-Ganbarra; 8,050 ft.) which is impassable for wheels and difficult for pack transport. A gorge at m. 128 might be impassable after heavy rain.

131¾ **Asyāb-i-Mūsa** (alt. 4,350 ft.). Supplies very scarce. One water-mill. 10 people of the Tulabi tribe. Nomad tents.

From Asyāb-i-Mūsa to Chārduvār the general direction is E. for 6 m. and then NE. The summit of the **Kūh-i-Lainā** is reached (3½ m.) by an easy ascent, followed by a difficult descent, very narrow, steep, and slippery after rain: passable only for pack transport.

141¼ **Chārduvār** (alt. 3,450 ft.), 75 people of Tulabi tribe. Water in small quantities from spring near tents. Supplies in small quantities from nomad tents. Food is scarce, but obtainable from NE. slopes of hills crossed in next stage.

Between Chārduvār and Shalikhūsh the route crosses (at m. 148) the Gardān-i-Vardālān (alt. 5,800 ft.) by a very difficult and steep ascent, followed by a gradual descent, easy for pack transport. (Directions: NNW. to summit of Gardān-i-Vardālān, descent ESE.; then, after crossing a *gardān* at m. 149½, NNE. W., NW., and NNE.) The

Miles from Kut el-Amara

Gardān-i-Vardālān was the only intermediate stage made by the Russians between Palāngīr and Chārduvār. Force 'D' Route Report, no. 10 makes the stage 16 m. from Palāngīr and 16 m. from Chārduvār.

150¼ **Shalikhūsh** (5,250 ft.), 50 nomads. Water scarce, from small spring near tents. Supplies in small quantities from tents.

From Shalikhūsh to Mumuhai directions are NNE. to m. 153, N. to m. 156, W. to m. 157½, then NE. Cross Gardān-i-Garāreh (6,000 ft.), and Gardān-i-Ghulām Husein Qishleh (5,700 ft.), the descents (especially that from the latter pass) being difficult for pack transport and impassable for wheels. At m. 156¾ the road is narrow, overhanging river 400 ft. below.

158¼ **Mumuhai** (alt. 4,500 ft.), 80 inhabitants. Water from one *qanāt*. Supplies scarce.

From Mumuhai to Palāngīr directions are NE. to m. 163¾, NNE. to m. 164, S. to m. 164¼, NNE. to m. 164½, N. to m. 166¼, NW. by N. to m. 166½, then N.

Route crosses the Gardān-i-Imāmzādeh Hasan (4,700 ft.). The road is fit for pack animals all the way, and for wheeled traffic across the valleys.

168¼ **Palāngīr** (alt. 4,750 ft.). Water plentiful. Supplies in small quantities.

From Palāngīr to Kainas directions are NE. to m. 170¾, N. to m. 175¾, NE. to m. 176½, E. by N. to m. 183¼; then NNE. At m. 183¼ a *gardān* (5,900 ft.) is crossed by a stony and difficult ascent and descent. Road in valleys good in places.

190¼ **Kainas** (alt. 4,950 ft.), 250 inhabitants. Water plentiful from the Rūd-i-Meryek. Supplies in small quantities.

From Kainas to Kirmanshah directions are NNE. to m. 194¼, then NE. Road fit for wheeled traffic except at the ascent to the Gardān-i-Jīlo (6,050 ft.) at 4 m.

201¼ **Kirmanshah.**

NOTE.—For alternative route from **Deh Bālā** see *Routes in Persia*, iii, no. 94, stages 7–11. This also goes through **Chārduvār, Mumuhai,** and **Palāngīr,** the distance between Deh Bālā and Palāngīr being given as 57 m. From Palāngīr the route (generally fairly easy for pack transport but bad in places) leads by Talandesht (so

Miles from Kut el-Amara

Russian officers: not Kilandasht as in Route Report: cp. p. 304) to **Zailan** (4,635 ft.), a distance of 24 m. (according to the Russians, 18 m.), and thence to Kirmanshah, 15 m. on. The total distance from Kut el-Amara to Kirmanshah is by this way 212¼ m. The route between Zailan and Kirmanshah is passable for wheels.

Note on the Khōr Suweikīyeh

The above route crosses the great belt of marsh which extends S. and SE. from the neighbourhood of Mandali to the district N. of Kut el-Amara (see p. 94), where the Khōr Suweikīyeh lies.

The Suweikīyeh Lake or Marsh is fed mainly by streams from the Persian hills to the N., but the Tigris water is believed to enter it if *bunds* break. The main point of breaking entailing this result would be at the head of the Imām Mahdi Canal, 18 m. NW. of Kut.

The water of the marsh is slightly brackish but drinkable. The depth at the centre is reported to be 3 ft. (November 1916), as it is also near the N. shore, which looks rather steeper than the S. shore in parts. The bottom near the edges is generally firm and walking is comparatively easy.

The following details as to the marsh were reported in March–November 1916 :—

(*a*) March 28. The Suweikīyeh flood-level 3 ft. below the level of the Tigris at a point opposite SE. corner of marsh.

(*b*) May 14. The water on the marsh where it is traversed by *Route* 9 reported to be 1 in. deep.

(*c*) June 13. The Suweikīyeh Marsh reported to extend now very little W. of Shumrān.

(*d*) August 10. The E. and W. extremities of the Suweikīyeh Marsh reported to be now only some 2 m. across from N. to S.: width at centre 8 m. This represents a decrease of some 7 m. in width, due largely to the *Shamal* (which began this year abnormally late, on July 21: see note on *Shamal*, p. 444). As regards the length of the marsh, the W. end was reported to have receded about 7 m. eastward since the middle of July, leaving a dry gap, 2½ m. in width, crossed by *Route* 9. W. of this gap, the former lake area was now represented by a collection of separate pools.

(*e*) November 22. No water was yet entering the marsh, the beds of feeders being observed to NE. and NW. of it. The marsh towards Jessān covered an area of about 6 m. by 4 m., but was still

separated from the Khōr Suweikīyeh by a dry gap about 4 m. wide. The level of the Suweikīyeh was considerably higher than that of the Tigris S. and SW. of it. The water in the Dahra Canal stopped about 250 yds. from the Suweikīyeh Lake.

As to *Route* 9, it may be added that neither of the earlier authorities referred to (August 1888 and October 1897) found any water actually on the route for the first 35 m. In August 1888 a salt-marsh was found, beginning at m. 12 and extending to m. 21, in which animals sank to 6 inches: the Suweikīyeh marshes lay to NE. and still contained water. In October 1897 going became heavy from 18 m. to 19¼ m. 'across the Suweikīyeh marshes'. An unpleasant smell was evidence of water lying to W. side of track. Both authorities state that in spring the route is flooded. The breadth of the inundation area is then apparently about 8 m., and the depth of water 1½–3 ft. One authority states that the flood-water was said to be drinkable.

ROUTE 10 a

ZORBATIYEH—DIZFŪL (162¼ M.)

Authority :—Routes in Persia, vol. iii, nos. 93 and 91, stages 8–13.

A desert route. The road is passable for all arms throughout, but is reported to be practicable only in winter and spring owing to the lack of supplies at other seasons. In October the tribes of the Pusht-i-Kūh descend to the plains on the route, bringing with them large flocks and herds. The Indian corn is then ripe and the desert always provides a certain quantity of grass. In February the approach of spring provides the most luxuriant herbage, which dries in the first heat of March and April, during which months the tribes migrate to the hill country, leaving the plain almost deserted throughout the summer. 'In no case should infantry endeavour to follow this section of the route until arrangements for supplies be made with the tribes and the Vali of Pusht-i-Kūh ; or if unaccompanied by cavalry, whose services would be absolutely necessary for foraging.' Water is plentiful as far as Qal'ateh, though apparently slightly brackish. From Qal'ateh to Dizfūl it is procurable throughout except in the tract between the Jik and the Karkeh rivers ; it is, however, often impregnated with salt and sulphur. Fuel is probably not available as far as Qal'ateh, and beyond Qal'ateh it is reported to be procurable only from the mountains, generally some miles distant. Forage is abundant in winter and spring. The passage of the Karkeh River from November to May would require special arrangements if the fords were impracticable. Skilled local guides are absolutely necessary for the passage of the river at any season.

Miles from Zorbatiyeh	
0	**Zorbatiyeh.**
15	**Masanau** or **Gavi** River.
35	**Zafareineh.** Between Zafareineh and Bisheh Darāz is a permanent settlement of Lurs at or near Ibrāhīm Katal (or Khāta) to S. of the road.
55	**Bisheh Darāz** (see *Route* 10 b, m. 65¾).
79	**Qal'ateh.** Water from springs ; much grass ; crops of Indian corn, barley, and wheat in spring. Kurd camps, as on E. of route, from October to April, with large flocks and herds.

Miles from Zorbatiyeh.

From Qal'ateh a route through mountainous country runs to Tang-i-Dār-i-Shahr (43 m.) connecting with the Dizfūl-Khurramābād route *via* Rūmīsh-Gūn (see *Routes in Persia, Corrections to vol. iii,* nos. 100 and 88 c). For mule-tracks to Deh Bālā (*Route* 9, m. 116¼) see *Routes in Persia*, iii, no. 91.

From Qal'ateh there are two routes leading to the Karkeh River, a northern and a southern.

The Northern or Upper Route is, as a whole, passable for pack-transport. Two slightly different lines are given.

(A) See *Routes in Persia, Corrections to vol. iii,* 1914, no. 91 c.
SE. to **Shukshamreh** (17 m. from Qal'ateh).
SE. to **Gātāreh** (34 m. from Qal'ateh).
By **Imāmzādeh Dacha-i-'Abbās** to the **Karkeh** at **Pā-i-Pul** (60 m. from Qal'ateh): see Southern Route under m. 125¾ and m. 148¼.
Water is said to be abundant on this route, but see (B) below. Grazing abundant in winter and spring: no supplies. The ford at Pā-i-Pul is difficult. The crossing is sometimes made by rafts. There is an easier ford 4 m. farther down-stream.

(B) See *Routes in Persia, Corrections to vol. iii,* no. 100, stages 8–6 (reversed).
E. by S. to **Cham-i-Hulākū** (20·6 m. from Qal'ateh).
ESE. to **Gātāreh** (42·6 m. from Qal'ateh).
To **Imāmzādeh Dacha-i-'Abbās** (see (A) above).

Water is said to be limited (December 1909). On a stretch of 8½–17½ m. from Qal'ateh, the construction of a cart-road would be difficult. Oil-springs are passed at about 7½ m. from Qal'ateh and at the Āb-i-Talāzi, where they are situated in a gorge 4 m. farther up the river.

The Lower or S. route from Qal'ateh leads over level ground offering no obstacle to wheeled traffic. This is described in *Routes in Persia,* vol. iii, no. 91, stages 8–12; see also *Corrections to vol. iii,* 1914, no. 91, stage 13.

80¾ From Qal'ateh to the Talāzi River the general direction is SSE.

Deh Lūrān mound. Camping-place of Lurs. For route from Bedrah see *Route* 10 b.

91¾ **Talāzi** River: camp room. Water brackish but drinkable; fuel; abundant grass; much irrigated land in vicinity; large camps of Kurds from October to April, with flocks and herds.

From Talāzi River to Tepeh Patak the general direction is SE. Cross the broad stony channel of the river, which contained, in September 1897, a stream of clear brackish water 30 yds. wide and 10 in. deep. Thence the road

Miles from Zorbatiyeh

traverses a grassy desert parallel to the Talāzi, which flows SE. at a distance of about 1–1½ m. The river-bed contains tamarisk jungle.

104¾ **Tepeh Patak** mound, near Talāzi River. Springs of water on S. side. Tamarisk in the river-bed; water of stream slightly brackish.

From Tepeh Patak to the Jik, or Jikan River, the general direction is ESE. A wide track runs across level desert, generally grassy, and occasionally traverses broad water-channels (dry in September) running to the Talāzi River, which diverges to S.

115¾ **Jik** River. Camp room on either bank, or in the sunken river-bed, which is ¼ m. broad, containing tamarisk bushes and a clear stream of fair water.

From the Jik to the Karkeh the general direction is E. No water on the route in September 1897.

Road crosses undulating grassy plain for 4 m., and then traverses broad, level, grassy valley.

125¾ Pass solitary tomb of **Seyyid 'Abbās.** This is apparently Imāmzādeh Dacha-i-'Abbās. See Northern Route, above.

From Imāmzādeh Dacha-i-'Abbās a road runs to **Shākhet el-Halweh** (4 m.), thence to the **Karkeh** River, fordable for all arms, Sept.–Dec., at Imāmzādeh Ghā'ib on E. bank (30 m. from Dacha-i-'Abbās) and thence *via* **Shush** (34 m.) to **Shushtar** (80 m.). The road is fit for wheeled transport from Shākhet el-Halweh onwards, except at the crossing of the Shūr River (girth deep in December) 1½ m. W. of Shush. Water is plentiful from the same point. Fuel and fodder fair to good.

136¾ Road enters low, bare hills.

137¾ Passing ruined tomb, road enters broken ground. Farther on, some broad water-courses are crossed; dry in September.

143¾ Level sandy ground.

146¾ Ruins and canal mounds at **Kūt.**

148¼ **Karkeh** River. Camp room ample; grass and tamarisk fuel from river banks. From October to April camps of Sagwand Lurs; but here, as elsewhere on the route, there are no inhabitants in summer. Wheat crops ripen in spring.

From the Karkeh to Dizfūl the general direction is E.

Cross the Karkeh River. The fords are shifting and dangerous, and guides are required. [N.B. The ford

Miles from Zorbatiyeh

mentioned here may be the **Pā-i-Pul**: see Northern Route (A) given under m. 79 above, and *Routes in Persia, Corrections to vol. iii,* no. 91, alternative (c). There is a better ford than Pā-i-Pul 4 m. down, called **Aivān-i-Karkeh,** 3 ft. 6 in. deep, and another 2 m. lower.]

The river divides into three arms, separated by tamarisk-covered islands; the banks are low and pebbly, the bed is gravel and stones. In September 1897 the right arm was 50 yds. wide, and girth deep; the centre arm was 50 yds. wide, and up to the point of a horse's shoulders, with a swift and dangerous current; the left arm was 100 yds. wide, girth deep for a short distance, then shallow. The course taken by the water has, however, probably altered considerably since 1897. The crossing is easy only in spring and autumn, and even then the river would require bridging for artillery.

On the farther side of the Karkeh the road crosses cultivated lands and many irrigation channels, the crossings of which are deep and swampy.

154¼ Cross a deep-cut, difficult canal, 30 ft. broad and girth deep. Kurdish camp of 500 tents was pitched here in 1897.

156¼ Cross the Bāla Rūd, dry in summer, and rarely unfordable.

162¼ **Dizfūl** bridge.

ROUTE 10 b

BEDRAH—DEH LŪRĀN (84¾ M.)

Authority:—Routes in Persia, iii, no. 103 (Report of 1909).

Mels friom Bedrah

0 **Bedrah.** Road passable for wheels to

35? **Changulak.** Water plentiful from river; no supplies; fuel scarce. (Route passable for pack transport joins from Deh Bālā.) Ford Āb-i-Tima, going E. by S. to m. 35½ up dry stony nullah; thence SE. through level valley to m. 37; thence S. to m. 38½. Thence route winds through gypsum hills to E. to m. 39. To this point improvement would be needed for wheels: hence

Miles from Bedrah	
	to Qafilaja passable for wheels. Proceed SE. by S. down fairly level valley to m. 44; ESE. to m. 47½, where a defile with bad path leads through hills on E. Hence E. by S. to
53¾	**Qafilaja.** Abundant water from stream. No supplies. Hence to Bisheh Darāz, road good and easy for pack transport, but impassable for wheels without much improvement. E. by S. to *tang* and *gardān* at m. 56¼. Thence E. to m. 58½, passing at m. 58¼ a spring (dry in Nov.) by trees. From m. 58½ E. by S. over *gardān* at m. 60¾; then through a winding *tang* (20 yds. wide) beyond which is a small reedy stream.
65¾	**Bisheh Darāz.** No permanent village. No supplies or fuel; a little water from stream. Hence to Deh Lūrān, road good and easy for pack transport, and, from m. 76¼, for wheels. Direction ESE. to m. 77¼. At m. 79¾ cross Rūd-Khāneh-i-Kamar Surkh, varying from 5 to 50 yds. in width, 6 in. deep, current 4 m.p.h. after a night's rain.
84¾	**Deh Lūrān.**

ROUTE 10 c

AHWĀZ—MANDALI (266 M.)

Authorities:—G. E. Hubbard, *From the Gulf to Ararat*, 1916 (account of a journey in March 1914). Itinerary of the same journey. Later notes for section Bedrah—Mandali.

For the route as far as Umm Chir see *Route* 8 a.

From Umm Chir to Mandali the route on which notes are given below was followed by the British Delegation to the Turco-Persian Boundary Commission in March 1914. The caravan of the British Delegation numbered about 150 men with mule transport. The Russian, Persian, and Turkish Delegations followed more or less the same line. The Russian and Persian caravans were each somewhat smaller than the British, and the Turkish numbered 50 men. The caravans were provisioned from the Tigris, supplies being collected at Amara, 'Ali el-Gharbi, Kut, and Baghdad.

From Umm Chir to Seyyid Hasan the country is uninhabited, but affords some pasture in spring.

Miles from Ahwāz

0 **Ahwāz.** See *Route* 8 a, m. 105½–43½ (reversed), for route to Umm Chir.

62 **Umm Chir.** See *Route* 8 a, m. 43½.

Ascend dry course of Shatt el-'Ama. The bed is difficult to follow as it winds among a mass of tussocks, some 18 in. high, formed by dead reed-clumps.

88 **Duweirij** River. Early in March this river was found, when first reached, to be a fast-flowing stream, 50–60 yds. broad and 5 ft. deep at the ford. It flowed at a level far below the desert beneath precipitous mud cliffs. Heavy rain lasting for a day and a night brought the water to the level of the surrounding plain. This flood very appreciably altered the course of the river.

According to recent information (1916) the Duweirij, after leaving the foot-hills, turns somewhat N. of W., and flows into the Khōr Malih, the eastern border of which is about 17 m. W. of the point where the river leaves the hills. This *khōr*, which is largely open water, connects with the Khōr Sanaf, which lies N. of, and adjoining, the Musharreh Canal.

98 Camp a few m. from **Shahriz** ruin-mounds about 27 m. short of the Tyb River.

125 Ford the **Tyb** River where it pierces by a deep gorge through the lowest foot-hills of the mountains. These foot-hills are of red clay much broken by the action of the water. Beyond the river where it was forded there is good camping-ground on broad, terraced slopes, with grass in spring: but the water of the Tyb is not good for drinking purposes, being described as 'an exceedingly potent solution of Epsom salts'.

147 Next camp at **Qara** (Qal'ah ?) **Tepeh,** a huge, solitary mound in flat desert. At its foot are half a dozen shallow wells, with bad, dirty water, full of tadpoles.

157 **Chift Darr** camp, in desert a little nearer the hills than at Qara Tepeh. In March there was here a small stream of good, clear water between high cliffs. This probably dried a few weeks later in the year.

173 Camp at ruins of **Bāgh-i-Shāhī** on Shanguleh River. Ruins of mud-built aqueducts and water-mills. The town and its palm-groves were destroyed by Lurs of the Pusht-i-Kūh.

189 **Darreh Malih** camp, below a cliff which runs out from the mountains into the desert N. of Bāgh-i-Shāhī. It is

Miles from **Ahwāz**

200–300 ft. high and 30 m. long, and can be climbed by caravans at three places only. At the foot of the cliff there is a strip of very broken ground 2–3 m. broad, a confused jumble of little hills and hollows. The hills are high enough to shut out all view, and it is easy for a caravan to lose its bearings in this ground.

From the summit of the cliff wide view towards mountains ahead. The intervening country is irrigated by two streams which issue from the mountains some distance apart and unite in the plain. In the middle of the plain is the white tomb of Seyyid Hasan which gives its name to the lands. Oasis of Bedrah visible on W. horizon (see *Route* 9, m. 54).

202 Camp at tomb of **Seyyid Hasan.** **Bedrah** lies some 15–20 m. to W.: road runs thither from Seyyid Hasan over stony and sandy plain.

210½ **Zorbatiyeh.** See *Route* 9, m. 61½.

From here, three days' march to Mandali over a plain, which after heavy rain becomes very bad going: in wet weather the streams become flooded. In March 1914 one was crossed which was bordered by a strip of bog on either bank, and several mules had to be unloaded before they could cross. At the end of November 1916, however, all streams looked fordable.

The distances are very uncertain from here.

218 A track joins from **Bedrah,** 5 m. S. (For route from Kut el-Amara see *Route* 9, m. 0–54.) There are, however, two tracks from Bedrah to the Tursakh (m. 236 below), where the more westerly of the two apparently ends.

224 **Hushayma.** Large brackish stream.

236 **Tursakh** stream; water plentiful, but brackish and hardly drinkable.

248 **Talkh** stream, brackish. This is believed to join the Tursakh lower down.

259 **Kazanieh,** and

261 **Deh Sheikh,** on either side of the Gangīr river, which is crossed. Both are large villages, surrounded by extensive groves of date-palms. Better water is to be obtained from the Gangīr and its canals than at previous points on the route from Zorbatiyeh and Bedrah.

266 **Mandali.** For description and route to Baghdad see vol. iii, *Routes* 28 b and 30.

ROUTE 11 a

DIZFŪL—KHURRAMĀBĀD (152 M.)

Via Āb-i-Sard

Authority:—Routes in Persia, Corrections to vol. iii (1914), no. 88 and Alternatives A and B.

This route makes somewhat of a détour to the W., but keeps E. of the Kashgān river. The détour can be somewhat shortened if between the Tirada valley and Āb-i-Sard the old route by Ser-i-Gul is taken (for description of this alternative see under m. 44 below). The main route issues on to the Khurramābād plain at Shāh-in-Shāh, but branch tracks from it seem to lead on to that plain farther E., near Kūrāgeh (see alternative routes given under m. 80, m. 121, m. 130).

The main route has been called the easiest between Dizfūl and Khurramābād, but it seems possible that the route which passes W. of the Kashgān by Pul-i-Madiān Rūd (see *Route* 11 b) may be somewhat better. For some years the route by Āb-i-Sard has been closed to caravans owing to the prevailing anarchy, and has been used only by nomad tribes in their migrations.

In 1884 the following estimate was made of the possibilities of cart-road construction on the main route by Āb-i-Sard (it will be noticed that in this estimate the total distance is made 5 m. longer than in the description given below):

57 m. good and level: only removal of loose stones needed.
60 m. fair, needed to be widened and cleared of stones.
40 m. bad, needing to be widened and zigzags to be constructed in places.

The cost in 1884 was estimated at Rs. 27,140: in 1911, however, the work was considered more difficult, and the cost was put at about £10,000.

The chief obstacles are the Dum-i-Chūl pass (see under m. 73), the Tang-i-Pinawar (see under m. 83), and the Dālich pass (see under m. 106½).

The route rises to heights of 3,000 to 6,000 ft. from the Dum-i-Chūl pass onwards, and in winter it is covered with snow in places, but is not impassable for long though the cold is bitter. Heavy rains or snowfall occur from November to April. In summer the heat is very great as far as Dum-i-Chūl, scarcely less so than on the Arabistan plain.

Water is generally plentiful and good from streams, but the Āb-i-Lailum (m. 66) and the Āb-i-Fānī (m. 73) are bitter in summer, and the supply is scanty at Chūl.

Grazing for mules and horses is good and abundant, especially in the early summer months.

Fuel is very scarce as far as Badāmak (m. 103), though enough for a small party can be got at Chūl (m. 80). From Badāmak onwards fuel is plentiful.

No supplies except from nomads, and these as a rule cannot supply barley, or spare more than enough bread to last a small party for a few days.

Mule-market at Dizfūl (see p. 490). Numerous mules, mares, bullocks, and donkeys are in the hands of the nomad tribes, who, however, sell only a few mules now and then.

The country up to m. 12 (Dū Kūh) belongs to the Sagwand; thence to near m. 37 (Qal'ah Riza) is Qalawand territory; from Qal'ah Riza to Dum-i-Chūl, about m. 75–80, the country belongs to the Baharwand and Kurd 'Aliwand sections of the Dirakwand. From the Dum-i-Chūl to the Shūrāb valley the country is occupied partly by Dirakwand, partly by Judeki. The main route described below, and the alternative Tirada valley—Āb-i-Sard *via* Ser-i-Gul—are used by Baharwand and Kurd 'Aliwand in their migrations between their summer and winter quarters.

Miles from Dizfūl	
0	**Dizfūl** (alt. 525 ft.) General direction to Qal'ah Huseiniyeh is NNW. Cross the Diz by bridge, and proceed over **Sahrā-i-Lūr,** a treeless plain, cultivated in places: the road is stony but otherwise good.
6	Pass ruins of **Salihābād.**
8	Pass two ancient waterworks (**Dū Hauzan**), 1 m. from the Bāla Rūd.
10	The plain becomes more stony and rises gently. Track crosses many dry water-courses. A few miles to W. of it is a detached hill called Qal'ah Qāsim.
11	Here direct road to Qal'ah Riza (see m. 37 below) diverges to NW., crossing the Bāla Rūd and running by Var-i-Zard, Cham-i-Chakal, Āb-i-Gilāl-i-Murt, Kul-i-Nai, and Papi Murdeh.
12	Pass two small detached hills, the **Dū Kūh.**
13	Here the present route turns to cross the Bāla Rūd, while *Route* 11 c (i), to Khurramābād *via* Qilāb, continues up l. side of the river.

Miles from Dizfūl

Cross the **Bāla Rūd** just above the broken bridge of Dukhtar Varjist. Descent to river easy. Stream 100 yds. wide in deep bed full of boulders, with banks generally steep: fordable except after heavy rain. Ascend opposite bank by steep path and cross a series of ridges and ravines.

23 **Qal'ah Huseiniyeh** (alt. 1,050 ft.); caravanserai in ruins. Water plentiful, grazing good, fuel scarce. No supplies except such as can be obtained from nomads, if any are in the neighbourhood.

General direction to Qal'ah Riza, NW.

24 Cross deep valley of the **Tiktik Āb** with difficult ascent and descent. Then over **Tushmal** hills; cross a succession of difficult ridges and ravines.

30 Road improves and rises gradually, past **Bidrubeh** plain, through intricate and rocky hills. The streams crossed are dry, or almost dry, during summer.

36 The head of the Qal'ah Riza valley is reached. Descend by stony paths.

37 **Qal'ah Riza** (alt. 1,550 ft.): ruined khan and T. O. In the cold weather the valley is occupied by the Baharwand tribe. There is a good camping-ground in the valley of Kul Huni, ½ m. S. of the khan, from which it is hidden by low hills. Water from stream, grazing good, fuel scarce: no supplies except from nomads.

General direction to Jauzar, NW. Cross the stony Riza plain, 4 × 1½ m., cultivated in places: keep to S. side of low hills.

41 Cross the **Āb-i-Zāl**. The river flows in a ravine 60 ft. deep: the drop of the banks to the stream is another 30 ft. The approaches on either side are stony and bad. There is a brick bridge of 20 ft. span in need of repair, the position of which is indicated by two stone and gypsum pillars on either side. The fords above and below the bridge are difficult. The remains of several bridges are to be seen in the neighbourhood.

Beyond the river, cross stony slopes.

42 Gypsum hills are reached.

44 Stony valley of the **Āb-i-Tirada**; the camping-ground on E. bank is **Qabr-i-Qāsim**, that on W. bank is **Qafilaja**. (The old graded track crossed the Āb-i-Tirada, by a wooden bridge, where it flows through a ravine only 10 ft. broad at top.)

Miles from Dizfūl

In summer when water is scarce at Jauzar (m. 56) it is best to make a halt in this valley, and thence proceed to Darreh Khazineh (see under m. 56), where water is easily obtainable from the Saidmarreh, rather than camp at Jauzar.

From here a route to the Dālich passes, much more direct than that by Valmiān described below, goes by Ser-i-Gul. It used to be the principal commercial route between Dizfūl and Khurramābād, and some improvements were made on it by the Persian authorities (e.g. blasting). The anarchy prevailing in the country has caused it to fall more and more into disuse : yet it was said in 1911 to be still preferred, 'bad though it is', by caravans and nomads. The passes are occasionally blocked by snow in winter for a few weeks at a time. Water is plentiful, except between the Kialān and Dālich ranges, where it is bitter, though generally drinkable. Fuel is very scarce. No supplies.

Miles from Dizfūl	
44	**Āb-i-Tirada** valley. Track diverges to r. from the Valmiān route, going NNW. It passes over gypsum and sandstone hills, and there are quantities of loose stones which make going very bad.
50	**Birinjzār,** in territory occupied by the Dirakwand. Water from stream. Good grazing. Scanty fuel. General direction N. to Ser-i-Gul. Before the beginning of the ascent over the Kialān Kūh a grotto, containing a spring of water, is passed on r. of road. The ascent to the pass over the Kialān Kūh (4,715 ft.) is steep and difficult. The road has been improved by blasting near the summit. The descent on the northern side is difficult and slippery. (This pass, it is said, would be easy to improve.) From the foot of the descent to Ser-i-Gul the going is better.
60	**Ser-i-Gul.** Water bitter, though drinkable. 'It is advisable to take drinking-water from Birinjzār.' General direction to Mishwand, NW. Road runs over stony spurs. It is bad and stony, but could be improved into a good mule road by clearing away the stones. Before reaching the **Buk-i-Buland,** apparently the last of these spurs, there is water, which, though bitter in summer, is always drinkable.
66	**Mishwand,** a grazing district of low gypsum hills. (Map I.D., sheet 9 C, places Mishwand south of the Buk-i-Buland.)
69	**Dālich** pass (Dālich Buzurg ? See m. 106½ below).

45 Cross gypsum ridge and descend to the valley of **Dār-ī-Zarāb.** Ascend a similar ridge on farther side of valley. Traces of a well-graded road are visible here.

Miles from Dizfūl	
46	Pass **Āb-i-Kaj-i-Pushkeh,** road very bad among gypsum hills. (There is a road 1 m. N. of, and parallel with, that here described, reported to be a good deal easier.)
48	**Āb-i-Darreh Khazīneh.**
	Descend into the Cham-i-Gardāb on a level with the Saidmarreh (Upper Karkeh) River.
49	Ascend steep slope. The **Pul-i-Tang** on the Saidmarreh here lies 1 m. due S. The river there contracts to 5–6 yds., and is bridged by a single arch. A track diverges here up S. bank of river.
	Road is now stony, but easy, over the slopes of the **Kebīr Kūh,** into which the Saidmarreh has cut a deep and impassable *tang,* 1 m. S. of road.
53	Pass **Shāh Ahmed Kuchikeh,** shrine (alt. 1,950 ft.).
54	Enter southern plain of **Jauzar,** small and grassy.
56	Camp in Jauzar (alt. 1,850 ft.). Water is rather bitter in the southern plain, and scarce in summer, but can be obtained from the Saidmarreh by a difficult pathway from the second (northern) plain of Jauzar (see m. 44 above).
	From here the general direction to the Āb-i-Fānī is NW. Down the Jauzar stream to
	Darreh Khazineh, where the level of the Saidmarreh is reached, just where it enters the gorge at the southern end of which is the Pul-i-Tang. This is a good halting-place.
	Proceed over easy ground.
63	Cross stream with difficult approaches.
65	Cross another stream with difficult approaches.
66	**Āb-i-Lailum** is crossed ½ m. above its junction with the Saidmarreh. The bed of the stream is full of boulders, but easy to cross. Here a track diverges to r. through the Tang-i-Lailum to the Dālich pass (see under m. 106½). Proceeding, keep near the Saidmarreh.
71	Cross difficult spur.
73	**Āb-i-Fānī** (alt. 1,550 ft.), easy to cross. Camping-grounds anywhere near the stream: a good place is 1 m. W. of the mouth of the Tang-i-Fānī, near a good clear spring at the bottom of some foot-hills. The water of the Āb-i-Fānī is rather bitter, that of the Saidmarreh is good. Grazing is good, fuel is scarce.

Miles from **Dizfūl**

A track branches off here continuing along the Saidmarreh to the Kashgān and up that stream to Pul-i-Kurr-o-Dukhtar. See *Route* 11 b (i), note under m. 0.

General direction to Valmiān, N. Follow stony path among foot-hills, skirting a small lake.

Cross the end of the **Kialān** range (here known as Dū Farūsh) at a point called **Dum-i-Chūl** (alt. 3,200 ft.). The sides of the mountain are at a slope of 30°. A foot-path crosses at an altitude of 3,500 ft. From the top of the Dum-i-Chūl, or possibly from the foot of the ascent, *Route* 11 b (i) diverges to l., leading to Khurramābād by Pul-i-Madiān Rūd. The descent is steep.

80 The **Chūl** plain is reached near masonry tomb. There are here some small springs of sweet water at the foot of limestone hills, and a large pond 1 m. NW.

From here an authority in 1904 followed a little-used hill-track to Khurramābād which runs at first to W. and then to E. of the main track described below. It is not certain where it crosses the main track: it apparently does so in the neighbourhood either of the Taiyil or of the Shūrāb stream (m. 132 or m. 135 of main route).

Proceed NNE., leaving the Valmiān track to r., while the track to Pul-i-Kurr-o-Dukhtar (*Route* 11 b, Alternative (i)) lies to l. The going is excellent, over green grassy hillocks along a scarcely perceptible watershed between the Fāni and the Kashgān, with a clear view to both flanks. **Wahsiyān** is apparently passed (see *Route* 11 b, Alternative (i) under m. 88, p. 272).

Miles from **Dizfūl**	
89	Cross difficult range of foot-hills in front of the Dālich Kūh.
91	**Rahak.** Camping-ground on the skirt of the Dālich range, near a small stream.
	General direction to Cham-i-Murt, E. by N. Track is hilly all the way and difficult in parts. Cross the Dālich range at **Kul-i-Hisar** (apparently NW. of the Dālich Buzurg and Dālich Kuchuk passes: see main route under m. 106½). Descend over fairly easy slopes to the Āb-i-Afrīneh valley.
105	**Cham-i-Murt.** Apparently in the Afrīneh valley, NW. of Āb-i-Sard (see main route under m. 111). Good grazing and abundant fuel.
	From here the general direction to the Dadābād plateau is N. by E., over the Kūh-i-Ghazal at a place called **Chughalū.**
	Slight descent to
115	Camp on **Dadābād** plateau. General direction to Kurageh, apparently NE. (according to authority N. by E.).

Miles from Dizfūl	Miles from Dizfūl	
	123	**Taiyil** stream, reached by a steep descent. Either in the neighbourhood of this stream or near the Shūrāb the track crosses the main route. From the Taiyil the course of the track is obscure. The authority says merely that there is a steep descent to the Shūrāb (sweet water), 'and thence over spurs to the Kūh-i-Bavi by Qalb 'Ali Khānī'. See alternative route given under m. 130 below.
	131	**Kurageh.**
	143	**Khurramābād.**

Proceed over low gypsum hills to

83 **Valmiān:** deserted T.O. Water from the Āb-i-Fānī indifferent.

From here to the Badāmak valley the general direction is NE. Proceed over gypsum hills to the foot of the **Tang-i-Pinawar** (alt. 3,000 ft.), thence by difficult ascent over limestone slopes to the summit (alt. 4,050 ft.) and from there by a short descent into the Badāmak valley.

103 **Badāmak** (near a high conical hill in the centre of the valley). Good water, fair grazing, abundant fuel. The Badāmak valley, which runs about SE.–NW., is well wooded and undulating, with many hills of blue shale conglomerate and sandstones. There are limestone ranges to N. and S. To N. is the Dālich range, an almost continuous cliff, passable only in four or five places. For the Kul-i-Hisar pass see branch route given above under m. 80. N. of Badāmak lies the very difficult Kul-i-Sukhteh, avoided even by nomads: for the main pass see below under m. 106½. The hills to the S. are breached in this neighbourhood by the Tang-i-Kashub. The valley is claimed by the Judeki, but occupied in winter by the Dirakwand.

General direction to Āb-i-Sard, N.

Track winds up the valley.

106½? Ascend to the **Dālich** pass (alt. 6,000 ft.). There are two passes, Dālich Buzurg and Dālich Kuchuk (Great and Little Dālich): the latter is 1½ m. W. of the Great Dālich, which is the better, though both are difficult and stony. The Great Dālich seems to be meant here. The descent is somewhat easier, over limestone slopes, leading into the Āb-i-Sard valley.

At the Dālich passes the route is joined by the alternative tracks from the Tirada valley by Ser-i-Gul (see under

Miles from Dizfūl

m. 44 above) and from the junction of the Āb-i-Lailum with the Saidmarreh through the Tang-i-Lailum (see under m. 66 above).

111 **Āb-i-Sard** valley. The plain is marshy. To E. it is fairly open, with low hills of gypsum and red clay; to W. there are high belts of limestone, sandstone, and gypsum. The best camping-ground is near the gorge, through which a stream draining the valley flows to join the Āb-i-Afrīneh. Water from stream, fair grazing, abundant fuel.

From here to Chimashk the general direction is NE. Proceed through the gorge mentioned above, or by a détour of 1 m. to E., then along the foot of the **Kūh-i-Gird**, known at its western end as Takht-i-Sīmī.

There is said to be a short cut over the Kūh-i-Gird by a route known as the Takht-i-Sīmī track, which shortens the distance to Chimashk by about 3 m. It involves a climb of 1,800 ft., but is preferred by nomads and is not particularly difficult.

115 Pass an *imāmzādeh.*

115½ Pass **Qal'ah Nasīr,** ruined fort. Thence there is a rather heavy stretch of road with steep ascents and descents for 2 m.

118 Cross the **Tayīn** stream (alt. about 4,900 ft.), 30 ft. wide, 2½ ft. deep, rapid current: difficult in spring. The Tayīn valley belongs to the Dirakwand (Baharwand). The low hills in the valley are of gypsum and red clay, with conglomeration.

Route then skirts the Kūh-i-Ghazal by a stony track, afterwards descending to a valley under that mountain.

121 **Chimashk,** camping-ground at the foot of the Chimashk gorge. Water from stream; grazing and fuel plentiful. Chimashk is occupied by Judeki, but Dirakwand also camp in the neighbourhood.

General direction to Dadābād plateau, NE. Proceed either through Chimashk gorge (alt. 5,000 ft.) or round the end of the hill (highest point 5,300 ft.), both roads easy.

On the north side of the gorge is the Chimashk caravanserai, in good condition, at the junction of the Āb-i-Raikhān (from about N.) and the Āb-i-Kābgān (from about ESE.), which form the Chimashk stream.

Miles from Dizfūl

From here an alternative track to the S. foot of the Kūh-i-Bavi (see m. 138), said to be easier than that by the Na'l Shikandeh pass described below, diverges ESE. up the rapid Kābgān stream, which 3 m. above its junction with the Raikhān passes through the Tang-i-Bāwileh, where are remarkable caves in limestone rock, approachable only with great difficulty. In 1911 they showed traces of recent occupation by Lurs and wild animals.

Here it may join or come near *Route* 11 c (i). At any rate it turns N. on to the Dadābād plateau and thence to the spurs to the Kūh Hashtād Pahlu. Its course beyond this is not described; but presumably it crosses into the Shūrāb valley, and either descends that valley to rejoin the main route, or joins the track which crosses the Kūh-i-Bavi by Qalb 'Ali Khānī and comes out on the Khurramābād plain apparently in the neighbourhood of Kurageh (see alternative route under m. 130 below.)

The Na'l Shikandeh road crosses either the Raikhān or the Kābgān near the N. end of the Chimashk gorge, and winds up the Raikhān valley, which is cultivated and fairly open.

127 **Na'l Shikandeh** pass. The last portion of the ascent is difficult. The summit is 5,900 ft. The descent on the far side is easy.

130 **Dadābād** plateau. Camping-grounds anywhere near water, which is plentiful. Abundant fuel.

It is said that an alternative route to Khurramābād from Dadābād avoids the Āb-i-Taiyil 'altogether'. (If this is correct the track must skirt round the head of the Taiyil valley.) At any rate it crosses into the Shūrāb valley, runs up the stream 'for 3 m.' (from where is not clear) to the Tang-i-Jemal-i-Kul, where are the ruins of an ancient fort. Then it turns N. and ascends the Kūh-i-Bavi by an easy valley to Qalb 'Ali Khānī, whence a track leads near Āb-i-Sīvak 'direct to the plains below', apparently to Kurageh. The ascents on this track 'are difficult, but it seems shorter'. Compare alternative routes given under m. 80 and m. 121, and *Route* 11 c (i).

General direction to the Khurramābād plain, NNE. The track is generally good; there are, however, a few difficult ascents and descents. A few small streams are crossed.

132 Cross the deep valley of the **Taiyil** (alt. 5,390 ft.).

135 Cross **Shūrāb** stream in a deep valley (alt. 4,700 ft.). Road winds upward, by a tributary stream. The ground is undulating and stony, and the going is bad.

Miles from Dizfūl	
138	Summit of the **Kūh-i-Bavi.** From here there is a difficult descent over boulders to the bottom of a ravine leading to the plain. (The road to Shāh-in-Shāh keeps along the top of the hill to r., and is easier, but about 2 m. longer.)
141	The Khurramābād plain is reached (alt. 4,100 ft.), after crossing a rapid brook. **Shāh-in-Shāh** is to r. on a low spur above the plain: it is marked by a white dome. Water from stream. Grazing good. No supplies.
	General direction to Khurramābād, NNE.
	The soil of the plain is clay. Ruins of villages in 1911 testified to the destruction worked by nomad tribes in the prevailing anarchy.
	Road crosses a swampy valley and then fords the **Dār-in-Rūd,** just above its junction with the Āb-i-Khurramābād. The latter stream is generally fordable, but swift and difficult to cross when in flood. It is unnecessary, however, to ford it, as a road keeps E. of the river, and proceeds by groves of poplars to the N. end of the town, where a fine bridge spans the river and gives access to the city on the farther bank.
152	**Khurramābād.**

ROUTE 11 b

DIZFŪL—KHURRAMĀBĀD (164 M.).

Via PUL-I-MADIĀN RŪD, ETC.

Authorities:—Routes in Persia, Corrections to vol. iii (1914), nos. 88, Alternatives C and D, and 88 C (with Alternative A, Route Reports of 1911–1913); *Routes in Persia,* vol. iii (1910), no. 98.

The routes which are given below pass W. of, or along, the Kashgān, and approach Khurramābād from the WNW.

It appears that the easiest lines for cart-road construction between Dizfūl and Khurramābād are to be found in this group of routes. Thus the route from Chūl to Pul-i-Madiān Rūd (Alternative (i)

below), and the route from Pul-i-Madiān Rūd by Chinār-i-Bardāghūl to Khurramābād, form a track which, it is said, 'could be made fit for wheeled traffic more easily than any other'. Alternative (ii) to Pul-i-Madiān Rūd, which makes a détour to W. of the Karkeh, has been called 'better probably than any other track in Luristan'. Though the S. end of the Tang-i-Khirsdar on Alternative (i) to Pul-i-Madiān Rūd is a very serious obstacle, and the crossing of the Kebir Kūh on Alternative (ii) is difficult in one part, the passes and defiles on these routes do not appear, on the whole, to be so bad as those on *Route* 11 a. The chief disadvantage of these routes as compared with *Route* 11 a lies in the obstacles presented by the Kashgān, and, in Alternative (ii), by the Karkeh and Saidmarreh. The Kashgān and Saidmarreh are generally fordable only in the later part of the summer and in autumn; the Karkeh is fordable in autumn only.

Water is on the whole plentiful. Grazing is generally good. Fuel is on the whole scarce S. of the Kebir Kūh, and generally obtainable to N. of it. Supplies are less scarce in the plians traversed by these routes from the Rūmishgān district onwards than they are in other parts of the country between Dizfūl and Khurramābād.

Alternative (i) to Pul-i-Madiān Rūd

Via Pul-i-Kurr-o-Dukhtar

This route follows the road described in *Route* 11 a as far as the summit, or perhaps the northern foot, of the Dum-i-Chūl pass over the Kialān range (or Dū Farūsh). It then diverges to l. and crosses the Kashgān at or near Khurramābād. The track is quite easy except at the Kashgān crossing, and at the southern end of the Tang-i-Khirsdar. The Kashgān is unfordable for at least four months in the year, and may be difficult to cross for three or four more. It can generally be forded with more or less ease from June to November, but has been found unfordable in June. A bridge of about 120 ft. would be needed for it. To make a road through the southern end of the Tang-i-Khirsdar, much blasting would be necessary. Snow never makes this route impassable.

For water, fuel, and grazing as far as the Dum-i-Chūl pass, see *Route* 11 a. After Dum-i-Chūl water appears to be plentiful: fuel is generally available. After the Kashgān is crossed supplies are less scarce than on any other route.

Miles from Dizfūl

0 **Dizfūl.** Follow *Route* 11 a to the top or northern foot of the **Dum-i-Chūl** pass.

An alternative route to Pul-i-Kurr-o-Dukhtar (see m. 88 below) leaves *Route* 11 a at m. 73, near the junction of the Āb-i-Fānī with the Saidmarreh. It follows the l. bank of the Saidmarreh to the junction of the Kashgān, and then turns up the l. bank of the latter river. Some distance (1½–2 m.?) after it passes the junction of the two rivers it goes through a difficult pass. It reaches Pul-i-Kurr-o-Dukhtar about 19 m. from the point where it leaves the Āb-i-Fānī.

80 **Chūl** Plain. This is crossed in a NW. direction. The track is marshy in places and would be difficult after rain. Grazing excellent. There is cultivation by Judeki, though the ground is nominally Hasanwand. **Gurr-i-Hushki** ruins are passed in the plain. Then through low gypsum hills.

88 **Pul-i-Kurr-o-Dukhtar** (or Pul-i-Shapur), ruins of an ancient Sassanian bridge over the Kashgān, at the mouth of the Tang-i-Khirsdar. Ford in late summer and early autumn just above the bridge (see introduction to this route). The only space near the bridge available for camping is on the farther (r.) bank of the Kashgān. But about 3 m. up the stream there is a small open space on the l. bank, which can be reached by keeping along that bank in the stream-bed for about 200 yds., and then ascending the bank and following a track at the foot of cliffs. From the open space a footpath, reported practicable for lightly laden mules, leads over the cliffs, through a cleft, to Wahsiyān. See further, pp. 266, 278 foll.

At the Pul-i-Kurr-o-Dukhtar, water, grazing, and fuel are plentiful.

For an alternative route from Pul-i-Kurr-o-Dukhtar to Dūreh springs (m. 144) see pp. 278–281.

General direction to ʿAli Gījan, NW. Proceed up the Tang-i-Khirsdar (r. bank). In 1911 the S. end of the gorge could be entered by either bank only on foot, and even then with difficulty. When the river is fordable, however, it is possible for loaded mules to enter by the stream-bed. Proceed by easy but stony track through reeds and brushwood over grassy levels.

93 Mouth of the **Tang-i-Tūl-i-Kash** on the r. bank, opposite the Imāmzādeh Bābā Zai on the l. bank.

Miles from Dizfūl

Here an alternative (inferior) track to 'Ali Gījan (see m. 100 on main route below) diverges to l., apparently up the Tang-i-Tūl-i-Kash. At m. 95 a small salt spring, undrinkable, is passed; much gypsum in the valley; at m. 96 some good fresh springs below the **Imāmzādeh Sahil Nadum**, which is passed at m. 97. At m. 97¾ reach summit of pass (alt. 4,350 ft.), and at m. 99 reach **'Ali Gījan** (alt. 4,200 ft.).

93½ The direction of the Kashgān, as followed up-stream, changes from NNE. to NNW.

94 Road turning to l. leaves the stream and ascends the Paru Pāriz valley, which is open and cultivated: no gypsum. Track winds up the valley by easy gradients: for 3 m. it needs only clearing of stones to be a good cart-track.

The last part of the ascent over the pass (alt. 4,400 ft.) which separates the Paru Pāriz valley from the Rūmishgān plain is steep, and though easy for mules would need grading for carts.

99 A track diverges leading direct to Chashmeh Kalag Rūd (see m. 102½ below).

100 **'Ali Gījan** (*imāmzādeh*), at the head (SE. end) of the Rūmishgān plain. Water from springs south of the *imāmzādeh*. Grazing and fuel plentiful.

A track here diverges l. One branch of it runs to the **Tang-i-Milleh Dār**, 14 m. W. by N., connecting with Alternative (ii) (see p. 275, under m. 90). The other branch leads to Qatirchi spring (NNW.) on the N. side of the Rūmishgān plain: in this neighbourhood it crosses Alternative route (ii) and proceeds to the Rūdbār, Pā Astan, and Tarhān plains. The Rūdbār valley near Rūmishgān should be distinguished from Rūdbār in the Saidmarreh valley (*Route* 11 d, m. 91). In the Tarhān plain it connects with *Routes* 11 d and 11 e (iii).

On leaving 'Ali Gījan descend a gentle slope across the E. end of the Rūmishgān plain, keeping towards the N. side.

101 Ascend a low pass (alt. 4,300 ft.) and descend again to an altitude of 2,400 ft. Thence proceed by an easy gradient up a hill-side part.

102½ **Chashmeh Kalag Rūd.** Track comes in from m. 99 above. Then follows an awkward ascent (which would need some blasting and zigzags to make it practicable for carts) leading to

Miles from Dizfūl	
103¼	Summit of low pass (alt. 4,250 ft.). Descend by easy gradients across E. end of a plain. The Kūh Sidan, which lies to l., bounds the plain on the S.
104	Ascend low pass, at the summit of which (alt. 4,650 ft.) is **Bābā Habil Imāmzādeh.** Descend NW. to alt. 4,400 ft.
105	Cross stream draining (NNW. ?) to Pā Astan valley.
106	Track turns N. up valley by easy gradients. Cross small plain of Ser Talasum and then over
109	**Gardān Dibahān.** Thence descend a gentle slope.
113	Village, cultivation, oil-springs. Alt. 4,700 ft. Here a track diverges NNW. to **Mishinau** (3 m.), **Farrūkhābād** (4 m.), **Gulgul** (7 m.).
117	**Pul-i-Madiān Rūd.** The bridge is dilapidated, but passable for mules. The stream is fordable except after heavy rain, but the bottom is very soft and boggy.

Alternative Route (ii) to Pul-i-Madiān Rūd

Via Pinjreh

This route takes a more westerly line to Pul-i-Madiān Rūd than that followed in Alternative (i). It affords a connexion between the Zorbatiyeh—Deh Lūrān—Dizfūl road (*Route* 10 a) and the Khurramābād—Deh Bala road (*Route* 11 d): see m. 0 and under m. 106 below.

There is a fairly good road throughout, 'better probably than any other track in Luristan'. It needs to be cleared of stones. Up to Pul-i-Madiān Rūd the principal obstacles are said to be a short difficult stretch on the ascent of the Kebir Kūh (but see under m. 72 below), the Karkeh (see m. 14 below), and the Saidmarreh (Upper Karkeh: see m. 90 below).

Snow falls on the parts of the route above 4,000 ft., but not enough to block traffic for more than a day or two. The heat in summer is great enough to make it as a rule advisable for caravans S. of the Kebir Kūh to move by night.

Water and grazing are plentiful throughout. Fuel is scanty S. of the Kebir Kūh, but is always available to the N. of that range. No supplies except from nomads as far as the Saidmarreh. Beyond, supplies of fodder could be collected.

Miles from Dizfūl	
0	**Dizfūl.** General direction to Kamar Chiragh 'Ali, NW. through Sagwand country. The track to the Karkeh may be the same as that mentioned in *Route* 10 a.
6	Cross the **Bāla Rūd.**
14	Cross the **Karkeh** just below the old bridge, Pā-i-Pul. See *Route* 10 a, m. 148¼. Passable for mules in autumn only, the water then being up to the loads. There is a better ford, 4 m. farther down.
	Turn N. along the W. bank of the river under **Kamar Zanhū.**
17	Here a bend of the river due W. of Kumāneh and under **Kamar Chiragh 'Ali** affords good grazing. There are usually Sagwand Lurs in the neighbourhood. No fuel.
	From here the general direction to m. 37 is NW., along the Karkeh river.
21	Pass **Qal'ah Sīr.**
37	Camping-ground near the Karkeh. Good grazing, scanty fuel.
	From here to Pinjreh the general direction is NW.
40	Leave the Karkeh, which above this point flows from NE., and follow the **Āb-i-Siahgu.**
47	Pass lands known as **Largheh.**
54	**Pinjreh,** a summer camping-ground of the Sagwand. Good grazing: fuel scarce.
	From here to the foot of the Kebir Kūh the general direction is NW.
68	Pass **Qal'ah Āb-i-Dārān.**
72	Foot of the **Kebir Kūh.** There are several possible routes from here to the Saidmarreh river, all passable for mules. The Tang-i-Sheikh Khān and the Tang-i-Dār-i-Shahr are passes over the Kebir Kūh. The ascent to the summit of the latter takes 1½ hrs. It is not stated which of these passes is the easier, or whether both have a difficult stretch on their ascent (see introduction to this route).
90	**Saidmarreh** river. Passable for mules July–November only. Beyond the Saidmarreh there is a steady climb to the **Tang-i-Milleh Dār** (alt. 4,100 ft.), at the head of which a track comes in from 'Ali Gijan (Alternative (i), m. 100). Thence over the gently undulating Rūmishgān plain.
106	Northern side of **Rūmishgān** plain. Camping-ground

Miles from Dizfūl

at any of the springs at the foot of the hills bounding the plain on the N. (The spring called Chashmeh Khāni has excellent water, but is a little out of the way: it lies NNW. of the Tang-i-Milleh-Dār.)

Hereabouts (near Qatarchi) a track comes in from **'Ali Gījan**, and after crossing this route, continues NW. to **Rūdbār**, **Pā Astan**, and **Tarhān** plains, connecting at Tarhān with *Routes* 11 d and 11 e (iii).

For route from here to the Kashgān passing W. of Pul-i-Madiān Rūd, see below.

From here the track crosses several low ranges by easy gradients till the **Gulgul-Mishinau** plain is reached. At the NE. end of this is the **Tang-i-Haleh.** Here Alternative (i) is met, and followed to

126 **Pul-i-Madiān Rūd.**

A more difficult route from Rūmishgān to the Kashgān than that by Pul-i-Madiān Rūd and Chinār-i-Bardāghūl is described below. It used to be considered less exposed to raids by the Dirakwand and others. It passes W. and N. of the Chinār-i-Bardāghūl route.

Miles from Dizfūl	
106	**Rūmishgān** plain, N. side. Leave the plain by the **Tang-i-Jangīr**, and ascend the **Madiān Kūh** by an easy gradient. The summit has an altitude of 4,700 ft. Thence descend to
115	**Dār-i-Tawīleh** valley; alt. 4,500 ft. A steady rise over a low spur of **Kūh Kālkhāni** leads to the **Gulgul** plain (alt. 4,700 ft.), where are numerous springs. Track keeps to the W. end of the plain, rounding the Kūh Qal'ah Murghān.
118	Pass the **Pariyān** springs. Hereabouts *Route* 11 d, coming from Pul-i-Madiān Rūd and proceeding to Tarhān, is crossed.
122	Ascend a ridge, from which the Kūh-i-Desht plain is visible. Easy descent to
126	**Chashmeh Kumir** in the Kūh-i-Desht plain. Tracks lead from this point across the plain. Water is available everywhere by digging. The plain is traversed by several streams draining into the Madiān Rūd, along the farther (E.) side of which runs the main route below. The grazing is good. Fuel from Surkhadum-i-Lūr (see main route, m. 123 below) beyond the Madiān Rūd.
	Cross the **Kūh-i-Desht** plain.
131	Pass the ruins of **Bāgh-i-Zāl.**
136	Mouth of the **Tang-i-Guraz.**
	Ascend to summit of the pass.

Miles from Dizfūl	Miles from Dizfūl	
	141	Top of the **Kūh-i-Guraz** (alt. 6,000 ft.). The last part of the track on either side of the summit is difficult. Thence descend to the
	145	**Sumaq** valley.
	148	Reach the **Kashgān**. Hereabouts this route joins the main route (m. 139 below).

The route from Pul-i-Madiān Rūd to Khurramābād by Chinār-i-Bardāghūl might be made passable for wheels with comparative ease. The chief obstacle is the Kashgān river (see introduction to Alternate route (i), above). Water, grazing, and fuel plentiful.

The account of the road from Pul-i-Madiān Rūd is from *Routes in Persia, Corrections to vol. iii* (1914), 88 c, and from *Routes in Persia*, vol. iii (1910), 98. It is impossible to reconcile the account with I. D. Map, 2 O (square D 2).

Distances reckoned from Dizfūl by Alternative (i) to Pul-i-Madiān Rūd.

117	**Pul-i-Madiān Rūd.**
	From here to Chinār-i-Bardāghūl the road is good for all animals (if the Pul-i-Madiān Rūd be repaired). Leave the Madiān Rūd, and cross the Kūh-i-Desht (or Kiasht) plain.
123	Pass spring at the foot of the **Surkhadum-i-Lūr** (or Dum-i-Karmiz) range.
124	Reach head of valley and cross a succession of shaly spurs, ascending to
128	**Chinār-i-Bardāghūl** (alt. 4,700 ft.). Water, grazing, and fuel plentiful.
	It was reported in 1897 that the road from here to Dūreh would be passable for animals if a little work were done near m. 133½ and about m. 137.
130½	Cross stony plateau, with some water available. Then turn E. and cross stony spurs S. of the Chināreh range.
132½	**Āb Tāf** springs (alt. 4,400 ft.). Abundant water, wood, and forage.
136¼	Cross open and stony saddle on the **Chināreh** range (alt. 4,600 ft.). Here a path branches off NNW. to the Alishtar plain, connecting with *Route* 11 e (i).
	Ascend over undulating spurs and steep slopes to
137	**Darreh Darāz** pass (alt. 4,450 ft.). The last 50 yds. before the top of the pass are very steep. Descend by ravine.
137½	Here the ravine is so narrowed by boulders that it would have to be blasted for the passage of carts.
	Descend the Zangalleh range by an easy stony track.

Miles from Dizfūl	
139	**Kashgān** river. Here or hereabouts the route from the Rūmishgān plain to the Kashgān by the Kūh-i-Desht.
	Cross the Kashgān (see introduction to this route). Bed gravel or boulders, rapid current. The best ford is 2½ m. below the old bridge. Thence over gently undulating, sparsely wooded ground to
144	**Dūreh** springs. Plentiful water, grazing, and fuel. A good deal of cultivation in the valley, which is inhabited throughout the year.
	Here the alternative route from Pul-i-Kurr-o-Dukhtar by the Kashgān valley comes in: see below, pp. 278–281.
	From here the track is passable for all arms, and runs through park-like country.
149½	**Naikash** springs.
154	**Milleh Shabāneh** pass between the Mian-i-Gardāneh hill to S. (alt. 5,900 ft.) and the Yefteh Kūh.
159	**Changāī** springs. At the foot of the **Safīd Kūh,** which the road skirts for the next 4 m.
164	**Khurramābād.**

Appendix

Pul-i-Kurr-o-Dukhtar—Dūreh Springs by the Kashgān Valley

A difficult track. When the Kashgān is not fordable several diversions have to be made from the main valley. The river may be fordable from June or July to November.

There is not much space for camping. Water and fuel are plentiful; some grazing is available. No supplies.

Miles	
0	**Pul-i-Kurr-o-Dukhtar** (see Alternative (i), above, m. 88). General direction to Murūni, N. There are several possible ways of reaching that district.
	(A) *Left bank*
	(i) When the river is fordable—
	Enter the Tang-i-Khirsdar as described above on p. 272, under m. 88. Ascend to the camping-ground there mentioned, 3 m. distant, on the l. (E.) side of the gorge. Thence follow the l. bank to **Imāmzādeh Bābā Zai** (m. 5) on a spur close to the river. At m. 4 cross the

Miles

Rahak—Gulgul stream, running down a narrow straight valley. Then cross flat terraces by the river to the W. end of the **Sultū Kūh** (m. 8) which the track skirts. **Murūni** district at m. 10. This track is passable for animals as a rule, but needs small improvements before it can be safely used.

(ii) When the river is unfordable—

Either, reach the camping-ground in the gorge by a détour over limestone hills E. of the *tang*, and then follow the above track.

Or, proceed over hills to E. of the mouth of the *tang*, and round the E. end of the **Sultū Kūh** to **Murūni** over two low passes. Murūni by this route is probably about 14 m.

(B) *Right bank.*

For 6 m. follow the route to 'Ali Gijan: see pp. 272, 273, m. 88—m. 94. At the mouth of the **Paru Pāriz** valley the track leaves the river and diverges to W. round low hills for about 6½ m. At m. 7½ rejoin river and cross to l. bank by an easy ford. **Murūni** is reached at 8 m.

8 **Murūni** district. Plentiful water, grazing, and fuel.

From here to the point reached by the only practicable caravan-track (described below) in 6½ m., there is a very difficult footpath along the l. bank of the Kashgān which is some 3 m. shorter.

Leaving Murūni proceed E. up valley and cross range to N. by a difficult pass involving a climb of over 1,000 ft. Thence down to the

14½ **Kashgān** river in the **Tang-i-Kish.**

15 The gorge is l., where a ruined fort surmounts the cliffs to the E.

15½ Some oil-springs lie about 300 yds. E. of the main track. Route now crosses level terraces, generally under cultivation. This is the Kish district.

17¾ Track enters the gorge again, and becomes difficult for laden animals.

18 The gorge ends, and track winds among low sandstone and gypsum hills.

18½ The junction of the Madiān Rūd with the Kashgān is seen.

21 The **Āb-i-Afrīneh** (also known as Chul-i-Hul). Camping-ground on banks of stream. Water, grazing, and fuel

Miles

plentiful. An easy track leads up the Afrīneh valley to Qal'ah Nasīr and Chimashk (see *Route* 11 a, m. 121).

General direction to Mamulūn, NE.

Besides the track described below, the only practicable one for caravans, there is a difficult footpath along the l. bank of the stream, entering the Tang-i-Gav Zardeh at about m. 1, and reaching at m. 4 the point where the caravan route returns to the river (see m. 27 below).

Ascend over steep range to N., diverging from the river. The pass over the hills is about 1,000 ft. above river-level. Descend again to

27 The Kashgān in the **Tang-i-Gav Zardeh.**

On emerging from the gorge, the track runs NE. at some distance from the river, passing cultivated fields and (in cold weather) Judeki camps.

30 Some sulphurous springs on the l. bank of the river are passed.

32 **Mamulūn** district at S. end of the **Tang-i-Kalhur.** Good camping-ground; plentiful fuel.

From here to Hirjun the general direction is NE.

There is a footpath running through the *tang* along the cliffs at about 500 ft. above river-level.

When the river is fordable a way, it is said, can be found through the *tang* by crossing to the r. bank some 600 yds. below the bridge (Pul-i-Kalhur?) and then re-crossing, if necessary, to the l. bank.

When the river is unfordable diverge from it, proceeding E. (authority has 'west') up the Mamulūn valley for 3 m., then cross the range to the N. by a difficult pass, about 1,500 ft. above the valley, and descend to the **Hiyūn** valley.

39 **Pul-i-Kalhur.**

From here a direct route to Dilbarr (see m. 46 below) runs NNE. across the Hiyūn valley and up a steep ravine to the top of the **Kūh-i-Baghileh** at a point about 4 m. E. of the Tang-i-Tireh: thence descend to the **Dilbarr** valley, reaching the **Āb-i-Khurramābād** about 9 m. from Pul-i-Kalhur.

Proceed along river.

45 Pass **Hayāt Ghaib Imāmzādeh.**

46 Southern end of **Tang-i-Tireh.** Plentiful fuel. From here to Dūreh the general direction is N. Two routes are possible, but that by the r. bank has to cross the Kashgān and is the inferior track.

Miles	
	By r. bank (when the river is fordable) :—
	Cross the Kashgān near Hayāt Ghaib, and ascend the Kūh-i-Tireh by a steep track, about 3 m. W. of the Tang-i-Tireh. Cross the Kashgān again at about m. 52, and reach the Dureh spring at about m. 10.
	A difficult footpath runs up the r. bank through the *tang* at a height of some 500 ft.
	By l. bank :—
	Ascend the Kūh-i-Baghileh, crossing it about 2 m. E. of the Tang-i-Tireh, and descend to
50	**Dilbarr** valley. Cross the **Āb-i-Khurramābād.** This is generally fordable, though swift and difficult to cross when in flood.
54	**Dūreh** springs.

ROUTES 11 c (i)–(vi)

MINOR ROUTES FROM DIZFŪL TO KHURRAMĀBAD

The following routes all lie E. of *Routes* 11 a and 11 b. They are given in order from W. to E. The first route (by the Tang-i-Zardāwār) goes fairly straight northwards to Khurramābād. The rest make shorter or longer détours to eastward. The only one which has been fully described in *Routes in Persia* is the long détour by Qal'ah Bazuft (route vi, below). The accounts given of the others are either in part or wholly based on native information.

(i) *Via* THE TANG-I-ZARDĀWĀR

Authority :—Corrections to Routes in Persia, vol. iii (1914) : an account of 1844, annotated in 1911 chiefly from native information

This is a hill-track used only by nomad tribes moving between winter and summer quarters. It is blocked by snow in winter. Distances are very uncertain. One authority (1911) gives the 'probable length' as 110 miles.

In the first two stages water and grazing are plentiful, fuel is scarce. For the rest of the route there is no information on these points.

Miles from Dizfūl

0 **Dizfūl.** General direction to Karaharr N. by W.

Follow *Route* 11 a to m. 13; that route then diverges to l., crossing the **Bāla Rūd,** while the route to Karaharr keeps on along the E. side of the river. Several steep-sided ravines are crossed and the road would need improvement in places before it would be fit for carts. One track keeps near the Bāla Rūd, but the best one, and the old Sassanian paved road, of which traces can be seen, keep nearer the hills.

23 **Karaharr.** From here to Duruzanāb the general direction is N. by E. through the Qilāb district. An easy ascent leads up the Ser-i-Pilleh, followed by a steep and difficult descent to the Ab-i-Anāraki: then over gypsum hills through the cultivated tract of Mairzi to the

33 **Āb-i-Mungārreh,** which is crossed. Between this stream and the limestone hills to the N. is a small cultivated plain called **Duruzanāb,** in which are small springs (called the Qilāb springs by some authorities) exuding bitumen. Nomad tents generally in the neighbourhood October–June.

Road leads from the plain across a precipitous range into the **Tang-i-Zardāwār,** a narrow wooded valley, which for 20 m. has a direction NNW. (340°).

55 From the head of the *tang,* a difficult ascent of 2 hrs. leads to the top of the **Kūh-i-Bīāb** (no water except from melted snow). A descent of some miles leads down from the top of this range, and the **Kūh Anāreh Rūd** is crossed. On the farther side is the

75 **Anāreh Rūd,** the left branch of the Āb-i-Zāl. Beyond the Anāreh Rūd the **Kūh-i-Kul Ispīd** (white peak) is crossed.

85 **Āb-i-Zāl** valley. This is said to be the same valley as the Āb-i-Sard, about 15 m. E. of *Route* 11 a, m. 111. The route then crosses the **Kūh-i-Gird** into the **Tayīn** valley, and thence over a low range into the **Kābgān** valley level with Chimashk.

Hence the route apparently crosses the Dadābād plateau, the Kūh Hashtād Pahlu range, the Shūrāb valley and the Kūh-i-Bavi. (See *Route* 11 a under m. 121, and under m. 130.)

116 **Kurageh,** on the Khurramābād plain.

128 **Khurramābād.**

(ii) *Via* THE RID KŪH

Authority:—Corrections to Routes in Persia, vol. iii (1914), 88 B (Report of 1911, from native information).

This is a track used only by nomad tribes (Qalawand) moving between winter and summer quarters. It is blocked by snow in winter. The names of stages are from native information, and there is no further information on the route.

Dizfūl.
Tang-i-Kir-Dakhāneh Gaud.
Kul-i-Diz.
Pifeh.
Idrisi.
Kūs.
Rid Kūh.
Qalʿah-i-Sheikh.
Qalʿah-i-Sheikh Sorawan. Thence two stages to
Khurramābād.

(iii) *Via* PUL-I-KUL AND THE MUAR-I-ZARŪN VALLEY

Authority:—Routes in Persia, vol. iii (1910), no. 87 and p. 269.

As far as Pul-i-Kul, this route is described in *Routes in Persia,* vol. iii, no. 87. The track here is used only by nomads. It leads up through the broken country of the foot-hills to Duma Khail and then across a very rugged mountainous region past the Sikeria Langar and Salun ranges. The road is impracticable for wheels, and passable by mules in some places only with difficulty. It is very slippery and steep in parts. Water is good throughout, but may become scarce from the middle of June to September. Grazing is good up to June, except at Pul-i-Kul. Fuel is scarce as far as Khān-i-Safīd, and at Pul-i-Kul: at other stages it is plentiful.

From Pul-i-Kul to the Muar-i-Zarūn valley there is no information as to the nature of the route.

From the Muar-i-Zarūn valley to Khurramābād the route follows the road given under route vi, below.

Miles from Dizfūl	
0	**Dizfūl.** NE. to
8	**Tabiran** (alt. 650 ft.). N. by E. to
19½	**Duma Khail** (alt. 1,850 ft.). NE. over a spur 2,600 ft. high to
24½	**Khān-i-Safīd.** E. to

Miles from Dizfūl	
37	**Nurdābā.** E. by very bad track to
46	**Pahre**(alt. 4,250 ft.). N. by bad track to
58	**Challan.** Bad road to
73	**Nukdar** (alt. 4,350 ft.). N. by difficult road to
78	**Pul-i-Kul** on the Ab-i-Kul (upper Āb-i-Diz). Bridges broken. Ascend tributary stream to
?	**Ser-i-Kul.** Thence up and down to another stream.
?	**Chal-i-Nirk.** Ascend a range to
?	**Gul-i-Serdāb.** Descend to
?	**Pīr Mum** (Mohammed). Proceed through a *tang*, past an *imāmzādeh*, and along the Āb-i-Sabz to
?	**Chukan** valley. Thence over **Gul-i-Chukan,** into
?	**Muar-i-Zarūn** valley. Here the route from Qal'ah Bazuft (route vi, below) is joined, and followed to
?	**Khurramābād,** which is 86 m. distant from the point of junction.

(iv) *Via* Ser-i-Desht and Makhadi

Authority :—Routes in Persia, vol. iii (1910), p. 267, foot-note (1890).

As far as Makhadi nothing seems to be known of this route but the names of the stages given below. What the *farsakhs* represent here is uncertain. It has been suggested that they are 2 m. each, as the same native source made Makhadi 4 *farsakhs* from Qal'ah Huma on the road to Khurramābād, and this distance has been estimated at 8 m. But if Ser-i-Desht given below as 7 *farsakhs* from Dizfūl is the same as the Ser-i-Desht in (v), it is more than 14 m. in a direct line from Dizfūl.

Dizfūl. 7 *farsakhs* to
Ser-i-Desht. 3 *farsakhs* to
Mian Dizan. 4 *farsakhs* to
Chah Matineh. 3 *farsakhs* to
Tiang-i-Diz. 5 *farsakhs* (snow in winter) to
Mala. 3 *farsakhs* to
Bard-i-Asiāb. 3 *farsakhs* to
Belu. 5 *farsakhs* to
Dibagh. 4 *farsakhs* to
Bard-i-Sir. 4 *farsakhs* to
Tembih (Keinu). 4 *farsakhs* to
Pul-i-Shirak. 3 *farsakhs* to

Chaunau. 3 *farsakhs* to
Bard-Zakhm (Mumdal valley). 3 *farsakhs* to
Shal-i-Shiahi valley. 4 *farsakhs* to
Sagala. 4 *farsakhs*, past Hassak to
Āb-i-Safīd. 3 *farsakhs* to
Makhadi. Here route vi, below, is joined, and followed to
Khurramābād, which is 110 m. from Makhadi.

(v) *Via* Ser-i-Bāgh and Ser Sahid

Authority:—Routes in Persia, vol. iii (1910), p. 266, foot-note (1890).

Route taken by nomads. From native information of 1890. The points not indicated as villages are merely camping-grounds.

Dizfūl.
Ser-i-Desht. Compare route iv, above, for stages to Pa-i-Mala or Ser Mala.
Mian Dizan.
Chah Matineh.
Pa-i-Mala.
Ser Mala.
Bala (Belu of route iv above ?).
Darreh Dara.
Ser-i-Bāgh.
Sallili.
Mowaz.
Tembih.
Razeh village.
Lub or **Jum Jumah** village.
Rustak village.
Zarg village.
Sail-i-Kutah village and *imāmzādeh.*
Ser Sahid village and *imāmzādeh.* Here route vi below is joined, and followed to
Khurramābād, which is 176 m. from Ser Sahid.

In or about 1890, a *sowar* traversed a route partially identical with the above, but his stages from Ser-i-Desht to Lub were as follows:—Dara Kaor, Paz, Kuarkan, Shula (here the Gaukun joins the Bīābeh), Pīr Āb. He gave Murbarringi as an intermediate stage between Dizfūl and Ser-i-Desht.

(vi) *Via* Qal'ah Bazuft

Authority:—Routes in Persia, vol. iii (1910), nos. 37, 85, 82, 83 (Reports of 1890, 1891, 1907.)

The following long détour has been described throughout in *Routes in Persia*, vol. iii. Between Dizfūl and Ser-i-Desht only a round by Duma Khail has been reported on, and more direct routes seem to exist. The road throughout is passable only for mule transport, but seems not to be very difficult, compared with other routes in the Bakhtiyāri country. From Dizfūl to Qal'ah Bazuft the road is (or was in 1890) much used by Bakhtiyāri tribesmen moving between the Dizfūl district and Isfahan, and it was said in 1890 to be 'in very good condition' from Ser-i-Desht. From Qal'ah Bazuft to Khurramābad, it is reported that it could be improved without excessive labour.

Water is generally plentiful and good, except at Taraz (m. 103½); but in the hot weather it seems to become rather scarce in the first part of the route (as far as Qal'ah Bazuft), especially at Babadi (m. 59) and Haud-i-Nau (m. 80½). Grazing is generally good, as far as Qal'ah Bazuft, though it becomes burnt up in parts from about May onwards: from Qal'ah Bazuft it is to be had 'at certain seasons'. Fuel is scarce as far as Babadi, but is generally plentiful thenceforward. Practically no supplies.

Only a summary of the full accounts in *Routes in Persia* is given here.

Miles from Dizfūl	
0	**Dizfūl.** (A direct track seems to lead from here to the Babadi neighbourhood.)
8	**Tabiran.**
19½	**Duma Khail.** Proceed over undulating country with many ravines to
33½	**Ser-i-Desht** (alt. 1,800 ft.). Thence S. over stony hilly country and two large streams.
47½	**Salvati** (alt. 1,800 ft.). SE. over undulating country to
59	**Babadi** (alt. 1,900 ft.). SE. through Bābā Ahmed *tang* to
72	**Chulbar** valley. Thence by fairly easy track.
80½	**Haud-i-Nau** camping-ground (beneath Kūh-i-Munar). NE. by rough track over Kūh-i-Munar (alt. 5,800 ft.) to
89½	**Shimbar** valley. Through Chilau valley to
103½	**Taraz** crest (camping-ground 4 m. before reaching crest). Thence descend into

Miles from Dizfūl	
112½	**Mauri** valley. Cross the **Hazar Cham** *gardān* (alt. 6,750 ft.) to
124	**Gala-i-Kuchuz.**
131½	**Qal'āh Bazuft** (alt. 5,350 ft.). (Route to Isfahan *via* Ardal, see *Routes in Persia*, iii. 82.)
146	**Gardān-i-Chari** (alt. 9,200 ft.). From the top of this pass a route diverges r. to Ardal on the Lynch road to Isfahan.
	Route to Khurramābād bears to l. (N.).
154¼	**Shamsiri** valley. Over the **Gardān-i-Barbarūn** into upper Kārūn valley. Stream is forded (3½ ft. of water in June).
164¼	**Chandar** (alt. 8,010 ft.) in upper Kārūn valley. Cross Gul-i-Gushgak (8,800 ft.) into
175¼	**Zarrin** valley. Here the authority seems to have made a détour to E. through the Tang-i-Gazi to Kangunak, and thence back to Chashmeh-i-Dimeh. According to map, I. D. sheet 9 L, 1915, Chashmeh-i-Dimeh can be reached from the Zarrin valley either by a détour to W. (past Aminullah) or by a détour to E. (crossing the Zarrin col and passing the W. end of the Tang-i-Gazi).
187½?	**Chashmeh-i-Dimeh** (alt. 7,610 ft.). Camping-place, fodder and firewood. Thence by good mule-track, leading apparently in a general NW. direction, passing several spaces suitable for camping, up to
201	**Gul-i-Gav,** a col 10,150 ft. in altitude. Water and fuel plentiful: grazing scarce.
	From here there is a fairly easy descent into the **Chilhash** valley.
207	Pass **Ser Sahid** village and *imāmzādeh* in a fold of the Kūh Rita. Here route v, above, joins from Dizfūl.
211	Camp by **Chilhash** stream. Thence over **Birgūn** col down a thickly wooded valley (**Warreh Rasia**) and over a great spur from the Gartak mountain, the ascent of which is steep in parts, but has an excellent mule-track, and can easily be ridden on horseback. The summit is 1,700 ft. above the bottom of the ascent. Descent less steep to
223	**Chashmeh Sirdum** in ravine. Good water, fuel, and grazing.
	Over Gartak mountain, by a fair track, somewhat difficult in parts, to

Miles from Dizfūl	
233	**Gaukun** valley. Camping-place 1½ m. from Pul-i-Gaukun (alt. 6,800 ft.). Thence up valley, over **Shāhān** range into Kamarun valley to
240	**Gardān-i-Kamarun** (alt. 9,500 ft.). Thence in a general NW. direction past **Pashandagān** and over two spurs into
252	**Masir Muguvī** valley (alt. 8,100 ft.). Hence in a general NW. direction, over a col, into another valley.
264	**Guveh** village (alt. 6,400 ft.) in a tributary valley. The main track apparently continues in the same direction to Makhadi (8 m.?). The authority followed made a détour to NNE. over the hills to the plain of
277	**Qal'ah Huma,** capital of the Mugvi tribe. Thence W. through defile called the **Ivaz Tangi.**
285	**Makhadi** village (alt. 7,600 ft.), in a plain in the Zallaki country. (Good track to Baznui, chief place of the Zallaki, 10 m. distant.) Here route iv, above, joins from Dizfūl.
299	**Arjānak** (alt. 7,100 ft.); summer head-quarters of the Isawand. Caves and small lake. Thence good track along the **Muar-i-Zarūn** valley.
309	Camp by spring in the same valley (alt. 8,500 ft.), in Haziwand territory. Here route iii, above, joins from Dizfūl. Continue up valley to
319	Lake **Irene** (alt. 8,050 ft.), 3 m. long, 1 m. wide. Thence along valley and up to
334	**Pambakal** col (alt. 8,400 ft.), near two good springs. From here the Isfahan—Burujird road could be struck in a march of 18 m., at Bahramābad.
	Descent, a little difficult in three places, leads to
340½	**Habvar** (or Hulivar) stream.
342	Camp near l. bank of Habvar stream (alt. 5,150 ft.). Thence by good track through oak-forest to
350	**Khanābād,** mud fort. Good spring and camping-ground 1 m. distant.
	Along **Khairābād** stream through forest, over **Pul-i-Hava** (wicker and wood bridge with rather difficult approaches), and up **Shāhbadar** valley, past Shāhbadar village (deserted in summer).
361	Summer encampment of the inhabitants of Shāhbadar. Continue through forest for 5 m., and thence out into open undulating country (Sagwand) over col to

Miles from Dizfūl	
372½	**Mamil** village and *imāmzādeh* (alt. 6,100 ft.). Good track leading through a defile and out into open country.
389½	Join main Khurramābād—Burujird road (*Route* 11 f (i)) 5½ m. from Khurramābād.
395	**Khurramābād.**

ROUTE 11 d

KHURRAMĀBĀD—DEH BĀLĀ (133 M.)

Authority :—Routes in Persia, vol. iii (1910), no. 98 : Report of September 1897.

This road follows *Route* 11 b (reversed) to Pul-i-Madiān Rūd (47 m.). As far as m. 54 (Gulgul) there would be no difficulty for pack transport except at the Kashgān river, and road-making would be fairly easy. Between m. 54 and m. 77¼ some passes which are difficult for laden animals have to be traversed. At m. 90¾ the Said-marreh has to be crossed : it is practicable for laden animals only in the months July–November (or October). From Rūdbār (m. 91) to the point where *Route* 9 is joined (m. 120½) the road is fair except in the Zangavar valley, and could easily be improved. (In 1897 it was stated that this section could easily be made passable for artillery.) The difficult Akhur Safīd pass on *Route* 9 has apparently to be crossed before reaching Deh Bālā.

Water is good and plentiful throughout. Grazing is good all the way. Fuel is very scarce from the neighbourhood of Pul-i-Madiān Rūd to Rūdbār, but is plentiful after that. Supplies from nomads (their camps are generally most numerous round Pul-i-Madiān Rūd and Gulgul). Some cultivation of wheat and barley, ripe, according to elevation, in May–July. Some Indian corn, ripe September–October, near Pul-i-Madiān Rūd and Shirvan.

The account here given of the route is an abbreviation of the fuller description in *Routes in Persia.*

Miles from Khurramābād.	
0	**Khurramābād.** Follow *Route* 11 b to Pul-i-Madiān Rūd.
47	**Pul-i-Madiān Rūd.**
	Ascend gently a bare valley, between stony ridges 1 m. apart, in a W. direction.
49	Beginning of descent.

Miles from Khurramābād	
50¼	Cross a stream and *karez*. Ascend gently by a stony path to
52	**Pariyān** spring (small supply of water). (See *Route* 11 b, Alternative (ii), note under m. 126.) Immediately beyond is the **Pariyān** pass (alt. 4,125 ft.), stony, grassy, and open.
52¾	Reach plain on farther side of pass: a well-watered valley.
53	Cross stream with a good volume of water: high banks: ramping needed for artillery. Then over bare spurs to
54	**Gulgul.**
55	Good spring of water to l. of road near a point where some stone fortifications are seen crowning the adjacent low mounds and hills. Proceed over easy rolling country.
57¾	Turn SW.
60	**Asuna** pass, a very bad descent, steep and dangerous for 300 yds., then rough and stony for another ¼ m. This descent is only just practicable for laden animals.
61½	**Pasun** valley, 2 m. broad, with cultivation and Lur camps. Ample camping room: abundant water: grazing good (large flocks here in September 1897): fuel scanty in valley, but willows in the gorge of the Tarhān pass, 1 m. to S. Supplies in summer.
	Proceed S. and traverse the **Tarhān** pass by a stony narrow path. There are here a good stream of water, willow-trees, much grass.
63	Emerge into the **Tarhān** plain. Here *Route* 11 e (iii) diverges to Kirmanshah, and tracks connect with *Route* 11 b (see p. 303 and p. 276).
	From the Tarhān plain to Khūshāb the general direction is S. of W. The road is reported passable for all arms except at m. 71–m. 72½ in the Siāb pass, which is barely practicable for laden animals. Water plentiful in the pass. Grazing throughout, but no fuel.
77¼	**Khūshāb.** Water and forage abundant: no fuel: supplies only when the crops are standing and flocks and herds are being pastured.
	From here to Rūdbār the general direction is N. of W. The road throughout is fair and passable for laden animals. Little water till the Saidmarreh is reached. Grass throughout, and wood in the Saidmarreh valley. At m. 90¾ ford the Saidmarreh, girth-deep for horses

Miles from **Khurramābād**

in September, 80 yds. broad, bed and banks firm with easy gradient.

87 A ford on the Saidmarreh is passed to l., with a few huts and *imāmzādeh* on the opposite bank. Here a track diverges to Bedrah.

91 Camping-ground ½ m. up-stream of **Rūdbār** village (80 houses): ample room: forage and fuel abundant. Some supplies from the village.

From here to Shirvan the general direction is NNW. past **Banishan,** up and down over spurs and plateaux. The road throughout is passable for laden animals. In the spring and autumn it is much obstructed by irrigation, and in places higher ground has to be followed. Water and grass throughout. No fuel near.

104 **Shirvan,** rich irrigated valley. Camping room on bare spurs near. Water and forage abundant. Wood from Malagaun range to SW. Some supplies obtainable.

From here to Zangavar the general direction is NW. Road goes up and down till the Zangavar valley is reached at m. 111¼. Thence it is rough and bad over stony spurs, following the valley. It is practicable throughout for laden animals. No water from Shirvan until the Zangavar valley is reached: there it is abundant, as also is fuel. Grass is found throughout.

115 Camping-ground in **Zangavar,** ¼ m. from the point where the Deh Bālā road leaves the valley. Abundant water, and some forage and fuel. Irrigated land along stream.

From here the general direction to Deh Bālā is W.

115¼ Leave the valley (another track continues along valley to the Kirmanshah road), and proceed by ravines and over upland.

120½ **Akhur Safīd** pass. Join main road to Kirmanshah (see *Route* 9 under m. 116¼). The whole road from Zangavar to Deh Bālā is practicable for laden animals, and where bad could easily be improved. Water, grass, and fuel throughout.

133? **Deh Bālā.**

ROUTE 11 e

KHURRAMĀBĀD—KIRMANSHAH

(i) *Via* Harsin (110 m.)

Authorities:—Routes in Persia, vol. iii (1910), no. 99 (Report of 1897); *Corrections to Routes in Persia, vol. iii* (1914), nos. 99 and 99 A (p. 99).

In order to make this route practicable for wheels, much work would be needed between the Rabat pass (m. 9) and the Alishtar plain (m. 22¾), including rock-cutting at the Rabat and Takatu passes. (The Governor of Khurramābād formerly took guns every year from Khurramābād to Alishtar, but probably their movement was very slow and difficult, as the road in this stretch was far from being suited to artillery.) From the entrance to the Alishtar plain (m. 22¾) to the Gashur pass (m. 73) it would take a good deal of work to make the road passable for artillery, but there is no rock to be cut, and it could all be done with the spade. From the summit of the Gashur pass to Tamarg (3 m.) the road needs widening and improving for guns: the gradients are not very steep. From Tamarg to Khurramābād the road is passable for all arms: the chief obstacle on this part of the route is the Gumasiāb river between Harsin and Hajiābād (see m. 90¾), which would probably need bridging.

From December to February or March there is deep snow as far as the Gashur pass, which may close the route. Beyond the Gashur pass, though snow falls on the road, it is practicable throughout the year.

The section from the Rabat pass to the Alishtar plain is the only part of the route where the country is confined and the road contracted by gorges; but from Alishtar to Chahr (m. 89½) the route is protected on the N. by high and rugged mountains.

Water is plentiful throughout.

Grazing is plentiful from April or May to September or October. *Bhusa* can be obtained in the Alishtar plain in October, and probably in the villages beyond the Gashur pass.

Fuel can be obtained between Khurramābād and the entrance to the Alishtar plain, and in the Sirkani valley. Beyond the Gashur pass it is on the whole very scarce, though groves of poplars are to be found here and there.

Between Khurramābād and the Gashur pass there is little cultivation except in the Alishtar plain. Wheat and barley are sown in September, are available for green forage in June and July, and are

cut and threshed up to the end of August. During August and September Indian corn is available, green or ripe. From May to October there are numerous flocks and herds pastured in this country, which is the summer quarters of various Lur tribes. Only in the Alishtar plain are there permanently settled inhabitants, and the country is almost wholly deserted in winter.

Between the Gashur pass and Kirmanshah, the inhabitants for the most part are settled in permanent villages. Probably the country has suffered from anarchy and war. The Harsin valley is very fertile and is (or was) well-cultivated. From June to the end of August the crops are green, ripening or being reaped. Numerous flocks and herds were seen here in 1897. Supplies were scarce in spring, even when conditions were better.

Miles from **Khurramābād**	
0	**Khurramābād.**
	General direction to Takatu, NNW. The road to that point is good except in the Rabat pass and at m. 12¼. Water, wood, and grass can be obtained throughout, but no other supplies.
	Road leaves the town in a northerly direction through the Khurramābād gorge, beyond which it skirts the base of a bare ridge to l.
2¾	Cross the W. branch of the **Āb-i-Khurramābād.**
4¾	Road bears more to NW., and runs, a broad level track, over a broad plateau between rocky mountains.
7¾	Road now leaves the plateau and follows the bed of the Āb-i-Khurramābād.
9	Road ascends the pass called **Tang-i-Rabat**, very difficult and dangerous owing to the slippery rocks. It is barely practicable for laden animals.
9½	At the N. end of the pass a grassy plateau is reached, with a fine stream and springs. Below, to the l., is a valley with a stream and many willows.
9¾	Pass a small loop-holed stone khan to r. Cross a broad plain with some cultivation and several streams.
10½	Cross a series of scantily wooded grassy spurs. Then over a level plateau.
12¼	Descend from plateau by a very steep rocky bank to a stream of good water. Beyond the stream cross fairly open country with some cultivation and rivulets with sparsely wooded hills close by.

Miles from Khurramābād	
12¾	Ascend by a rough and stony track in a NW. direction to the **Aivandah** pass. Road runs along the mountain-side. The neighbouring hills are higher than before, wooded, and cut up by ravines.
15¼	Summit of pass. Track is broad, and level for ¼ m.; it then descends on the r. side of the valley, becoming stony again. A *karez* by the roadside.
16½	**Takatu** plateau (alt. 5,105 ft.). Camping-ground, water, and fuel; no supplies.
	From here to Alishtar the general direction is NNW. Road is passable for laden animals. Water and grazing throughout. Fuel until the Alishtar plain is reached. No supplies till beyond m. 24¼ (the Khaman river), and there in summer only.
17½	**Takatu** pass, a rocky gorge 100 yds. long and 20 yds. wide. On emerging from the gorge turn l. along stream-bed: here are some osier bridges over the various channels, passable by laden animals.
18	Ascend out of stream-bed, and follow a plateau on its l. bank.
18¾	Cross the stream, 30 yds. wide, with level banks, and numerous boulders in the bed. In August its greatest depth was found to be 2 ft. On the further side is **Kaka Riza**, with a few black tents and some cultivation. Ascend by a stony track a grassy and woody spur from the Shuna mountain, which is 4 m. to NW. Round the spur and descend to
19¼	Narrow valley with small stream, which is left a short distance farther on.
20¼	Cross by steep slopes another narrow valley; ¾ m. distant to W. are the wooded hills and gorge of **Tirian**, through which the Khaman flows.
21¼	Pass some large stone mounds, and traverse a broad cultivated slope, from which descend to
22¾	Stream (tributary of the Khaman). Its banks are lined with rice fields. The crossing needs improvement. The Alishtar plain is entered.
23¾	Cross another tributary of the Khaman, a broad and shallow stream which can be seen disappearing through the Tirian gorge ½ m. to S.
24½	Cross the **Khaman** river: in August 25 yds. broad, 2 ft.

Miles from Khurramābād

deep; strong current; beds and banks pebbly: ramping needed for artillery. Skirt the SW. side of the Alishtar plain by a broad track over stony slopes.

25¾ Pass a village standing ¼ m. to r. on the l. bank of the Khaman.

29½ Camping ground in **Alishtar** plain (alt. 5,500 ft.). The plain has ample camping-room and abundant water. In August 1897 grazing and forage were reported abundant. In October 1908 it was reported that there was practically no grazing in the vicinity, but *bhusa* was plentiful and very cheap. Rice, wheat, barley, and Indian corn are cultivated here. The *Gazetteer of Persia* states that the plain is the summer quarters of the Hasanwand. In October 1908 it was reported to be inhabited by mixed tribes, and to contain some 3,000 (?) huts or houses, which were then for the most part deserted, 'owing to disturbances'.

Route 11 e (ii) passes through this plain, and a track leads from it to *Route* 11 b, m. 136¼.

General direction to m. 45½, NNW. The road on this stretch is good and practicable for laden animals, and could be easily improved. Water available at frequent intervals. Grazing throughout. No fuel by the road.

Leaving the Alishtar plain ascend a broad cultivated valley, where many flocks were seen in August 1897. Several streams are crossed.

33 A track diverges NE. to the Gumasiāb valley.

34 Cross a watershed and traverse a broad plain.

34½ Cross cultivated spurs, and descend from the last very steeply.

35¼ Cross a stream. Then proceed NW. over a succession of rounded spurs, with a good deal of wheat-cultivation. These spurs run SW. to a valley about 3 m. distant. Then descend from a ridge by a bare valley into the valley of Gurginābād. Cross the valley and its streams above that place.

38¼ **Gurginābād** is passed, lying ½ m. to r. On the opposite side of the valley skirt a mountain slope to r.

39½ Road to Hulailān on route (iii) diverges to l.

Descend steeply.

40½ Stream and large *karez* flowing SW. Ascend from stream

Miles from Khurramābād	
	and cross level plateau with streams and cultivation. Here the road is crossed by a track from Nihavand (*Route* 11 g) to Hulailān. Nomad camps in neighbourhood.
42¼	Leaving the plateau proceed between long rolling spurs, a stream of water to l. of road and patches of cultivation on either hand. Gentle ascent.
44¾	Summit of grassy rise. Descend.
45½	Valley leading into the Badavar valley (alt. 5,975 ft.). Ample camping room. Abundant water from springs and *karez*. Grazing apparently good. No fuel near. There were some camps here in August 1897, a certain amount of cultivation, and large herds of sheep and goat and some cattle. Supplies in summer only.
	General direction from here to Duliskān camp, NNW. The road is passable for laden animals and good, though occasionally obstructed by swampy springs and water-channels. Forage throughout. In summer supplies here and there from nomad camps. No fuel.
	Proceed NW. into **Badavar** valley. On the l. bank of the Badavar stream flowing WNW. a lower road to Harsin apparently diverges. It may be somewhat shorter than the upper road here followed.
48¾	Cross the **Badavar** stream, 12 yds. wide, 2 ft. deep, with swift and smooth current in August. Banks shelving in places, bottom gravel. Ascend from river in a northerly direction.
49	Leaving the Badavar valley ascend side valley, which is grassy and well watered by springs. Nomad camps and flocks and herds in August 1897.
50½	Cross level plateau, with a few trees and some springs of good water: some acres of cultivation.
51¼	Descend from plateau, ascend opposite rise.
54	Summit of rise. Cross another plateau. Then skirt for 2 m. a narrow valley with cultivation, nomad tents and grazing flocks.
56	Proceed NW. over grassy plateau, with some springs and water channels.
57	Turn N. The country here is a broad grassy undulating plain draining SW.
58	**Duliskān** camp (alt. 6,400 ft.) Chawari country. Water, grazing, and forage abundant. No fuel except some

Miles from Khurramābād

limited quantities from mountains 5 m. to N. Supplies from scattered nomad camps in summer.

From there to the Sirkani valley the general direction is NW. Except at a stretch between m. 65½ and m. 66¾ the road is passable for all arms: ramps, culverts, and drains are needed to improve it on the plain. Water and grazing throughout. No fuel. Supplies from nomads in summer only.

Proceed across the plain more or less in a westerly direction, descending gradually. Springs, streams, and irrigation channels are frequent, and sometimes the water-channels cross the route. (There are several tracks which may be followed.) Small camps of Lurs in the summer: patches of cultivation, and many flocks and herds.

65½ Here cross a bare ridge, the frontier between the Kakawand and the Chawari. Then descend steeply into a narrow cultivated valley, and cross a stream flowing to the Sirkani. Ascend steeply from stream.

66¾ Over rolling hills above E. side of the Sirkani valley, which runs S. Numerous streams. Many flocks: some patches of cultivation. Descend to and cross the **Sirkani** stream.

68¼ Camping-ground in **Sirkani** valley (alt. 5,550 ft.), narrow but extending to any length. Abundant water from stream and springs. Good grazing. Fuel from willow-trees along stream. In August 1897 there were small camps in the valley, with some cultivation, large flocks of goats and sheep and some herds of cattle.

General direction to Harsin, WNW. The road is passable for all arms except from the Gashur pass to Tamarg (m. 73 to m. 76).

Ascend out of the Sirkani valley, and cross a low saddle. Then proceed NW. over grassy hills to a valley with a stream running S. Ascend the valley for a short distance.

70 Leave this valley, apparently going about WNW.

71½ Pass a stream to l., and a cultivated valley draining S. Then enter a valley which in August 1897 had patches of cultivation and small nomad camps: some springs. Thence ascend by a gentle slope to

73 **Gashur** pass (alt. 6,400 ft.) The col is grassy, but without

Miles from Khurramābād

trees or water. It slopes up to rock cliffs on either hand, those to l. being ¼ m. distant, those to r. ½ m. This is the frontier between the provinces of Luristan and Kirmanshah.

The track, which is now in parts narrow and stony, descends by easy gradients towards the upper (E.) end of the Harsin valley.

76 Pass **Tamarg** on l., 50 houses. Abundant water and some willow plantations.

Continue descent to the Harsin valley. On reaching the valley (which is here a broad cultivated plain) continue along its N. side, descending gently by a broad track. (The valley is about 8 m. broad and about 10 m. long from the Gashur pass to the gorge at its SW. end below Harsin town).

Lands irrigated by *karez* near the road.

77½ Pass a mound ½ m. to r.

78 Cross a stream with a fair volume of water. Then over a small saddle, to the l. of which on a mound is a ruined fort.

78½ Pass **Karangi,** 20 houses, on the Harsin stream, ½ m. to l. Continue along valley and pass through suburbs on E. side of Harsin.

80 **Harsin** (alt. 5,230 ft.: about 2,000 houses in the town and adjacent villages). The town lies on the N. side of the valley, which is there bounded by steep and rocky mountains, bare of trees. The gardens round and in the town almost hide the houses. The remains of the ancient castle consist of pinnacles and minarets rising to a considerable height.

Supplies could be collected from the valley, which has a considerable area of cultivation and large herds of sheep, goats, and cattle.

The water-supply of the town is most abundant, the principal source being a large spring rising in the mountain close to the town. There are numerous broad clear streams among the gardens. Grazing and forage are abundant.

There is a site suitable for camping SE. of the town.

The valley is inhabited mainly by Harsini Kurds, but in the villages in the upper part of the valley there are also

Miles from Khurramābād

some Lurs. The town of Harsin is largely owned by men who are hereditary servants of the Persian reigning family.

From here to Hajiābād the general direction is WNW. The road is good, and with slight improvements could be made practicable for all arms. Water and grazing throughout: no fuel. Between m. 82½ and m. 89½ no supplies except when the crops are standing.

Proceed through the gardens W. of the town for about a mile, and along Harsin valley. Ascend out of valley, and reach

82½ **Pariān** plateau. Cross the plateau, leaving two villages of Pariān ¾ m. and 2 m. to r.

83¼ Descend from plateau into a narrow valley, with fields of ripe corn in August 1897. Descend this valley by a stony path going W. Then cross the stream draining it, and turn into another valley running S. with springs and *karez*. Cross this valley obliquely, bearing apparently about NW. 2 m. to S. is a village in a fine grove of trees.

86 Vineyard and plantations with a *karez*. (If the route were followed in the reverse direction, the climb from here to m. 83¼ would be heavy for artillery, though the gradients are easy.)

87¼ Low pass, beyond which, still going about NW., descend a long bare valley between low spurs. Gradients easy.

89½ **Chahr** village, about 100 houses. Abundant water: some fine gardens and poplar plantations. (If the route were followed in the reverse direction the ascent from this point to m. 87¼ would be heavy for artillery.)

Skirt base of hill (apparently to l.) and in a mile reach the **Gumasiāb** river. Turn up river bank for a few hundred yards, to

90¾ Ford (alt. 4,350 ft.) The river in August was found to be 40 yds. broad, 2 ft. 6 in. deep, current smooth and swift. In October 1908 the water was up to mules' girths. Easy approaches, bed of firm gravel. 250 yds. down-stream is a pier for a flying bridge. ¼ m. up-stream are Suleimāniyeh and Bizaru on r. and l. banks. Except at the ford the banks are steep. There is no other crossing in the neighbourhood down-stream.

Miles from Khurramābād	
	At the ford route (ii), below, joins.
	Turn S. to
91½	**Vargar** on the r. bank of the river. Cross broad and level cultivated plain bearing about WSW.
91¾	Pass **Shāh Maliki,** 1 m. to W. in groves of trees.
92¾	**Deh Kabud,** thirty houses: water and fine plantation of poplars. Bear about WNW.
93½	**Gauphana,** 20 houses, 300 yds. to r. at foot of low mound.
95	**Hajiābād** (alt. 4,470 ft.), 60 houses. Water abundant, good grazing. Fuel said to be scarce locally (though there are large groves of willows and poplars), but procurable from the Parrān mountains, 3 m. to N. Some supplies from neighbouring villages.
	General direction from here to Kirmanshah slightly S. of W. The road throughout is passable for all arms. Water, villages, and cultivation at intervals.
	Proceed at first WNW. Round a spur and cross a small stream.
96¼	Pass **Sararu,** ½ m. to S.
96¾	The Kirmanshah—Hamadān road (see *Route* 11 g) is met, and followed WSW. The mountains lie about 2 m. to N.
101	Pass large village on low hills to l.
103	Pass walled village on r. in plain. Descend to
106	The **Qara Sū,** which is crossed by a large brick bridge. Thence gradual ascent over plain to
110	**Kirmanshah.**

(ii) *Via* Ittiwand and Vanavilleh

Authority:—Corrections to Routes in Persia, vol. iii (1914), no. 99 A (Reports of October 1908).

It has been found impossible to trace in detail the line of this route as most of the places mentioned are not marked on the map I. D., sheets of 1913–14. It appears to go through the Aivandah ('Awandar') pass to the Alishtar plain.

The route is described as '*via* Bairanwand'. If this is correct, it may perhaps imply that it runs at first somewhat E. of route (i): but the 'Tang-i-Awandar' mentioned on it would appear to be the same as the Aivandah pass of route (i). Both routes go to the

Alishtar plain. Beyond Alishtar the present route runs apparently SW. of route (i). At Vanavilleh it touches an offshoot of the Sàfīd Kūh and thence proceeds apparently about north to Kaisarwand, and joins route (i) at the Gumasiāb, 20 m. from Kirmanshah.

The road as far as Gumasiāb is fit for pack transport only. No serious obstacles are met with. Water is plentiful throughout. In October 1908 there was good grazing at Kaka Dār and Ittiwand, and *bhusa* was abundant at Alishtar. (Grazing would probably be plentiful at Alishtar in the summer.) Little or no fuel is to be had except at Vanavilleh. Cereals are obtainable (at least in late summer and autumn) at Alishtar; cattle and sheep, wheat and barley were plentiful at Ittiwand in October; and provisions of all sorts could be obtained in considerable quantities in the neighbourhood of Kaisarwand.

The times given in the margin are those of a caravan.

hrs.	min.	
0	0	**Khurramābād.** To the Tang-i-Chinār Dār the route is an open track passable for all transport. All through the Tang-i-Chinār Dār the route narrows, and is very winding. Much undergrowth helps to make it difficult. There are very few ascents or descents in this pass. From the farther side of this pass to the hills before the Tang-i-Awandar (Aivandah?, see route (i), m. 12¾) it is a good open track through a valley suitable for all transport. Up the Tang-i-Awandar and down to Kaka Dār the track follows a long steady ascent and descent, but meets with no serious obstacles. The streams crossed are no obstacles (at any rate in autumn).
6	45	**Kaka Dār** (alt. 5,400 ft.). There is no good camping-ground here. Good and plentiful water from stream. Good grazing. Road enters a defile immediately beyond this point. This is somewhat difficult as the track passes over large slabs of rock covered with water from the stream. Beyond the defile the road is clear of obstacles, but goes up and down the whole way until the plain of Alishtar is reached. The country passed through is bare, without trees, villages, or encampment (October).
10	0	**Alishtar** plain: see route (i) above, m. 29½.

Road over the Alishtar plain is an open level track passable for all transport. From the plain to Lagri it is a narrow winding track passing over bare hilly country. Road has no obstacles for pack animals. Water is met with twice on the road from small streams.

hrs. min.

15 30 **Lagri** (alt. 5,600 ft.).

The road from Lagri to the head of the Gachini valley is a track which sometimes broadens out, but is generally very narrow, and here and there rather indistinct. It passes over undulating ground, and is much cut up by nullahs. It is passable for pack transport only. Water in October was met with three times between Lagri and Gachini. Gachini (also called Gatchka or Sarugir) consists of about 1,000 huts and tents scattered about at the NW. end of the valley (Mumwand Lurs). From here for some distance the road passes over very rocky dry nullah beds: after which, to Ittiwand, it is a good track over undulating ground. There is no water between Gachini and Ittiwand.

24 15 **Ittiwand** (alt. 5,200 ft.).

(The **Āb-i-Gezrū** is mentioned in the Route Report, but, like Lagri and the Ittiwand valley, is not marked on the I. D. sheet. It is described as easily fordable in October, 20 yds. wide and 1½ ft. deep, and containing excellent drinking water.)

In October 1908 about 1,000 head of cattle and 15,000 sheep were seen grazing, and *bhusa*, wheat, and barley were reported plentiful, but whether in the neighbourhood of Ittiwand or *en route* between Lagri and Ittiwand is not clear.

For about 2 m. beyond Ittiwand the track winds among hills, crossing several small water-courses, very stony and rocky: mules go in single file. Then on coming out into the Kakawand country it passes over waterless undulating ground with a general decline to the valley below Vanavilleh. Thence up to

27 15 **Vanavilleh** (alt. 5,750 ft.), hilly ground, an offshoot from the Safīd Kūh, in Kakawand territory. Camping-ground for a battalion. Water plentiful from springs. Fuel abundant. No supplies. (Grain might be got from encampments 3–8 m. distant.)

From here to Kaisarwand there is a good track passing over undulating and hilly ground. It is passable for pack transport only, but could be easily improved, as no serious obstacles are met with. The country is much cultivated, but treeless. The *imāmzādeh* of Bavalin is passed.

hrs.	min.	
33	45	**Kaisarwand** (alt. 4,650 ft.), situated in a fertile valley, with several other villages near. A considerable amount of supplies could be collected. Thence by a track, easy for pack transport, to **Gumasiāb** ford. See route (i) above, for continuation to **Kirmanshah**, about 20 m. distant.

(iii) *Via* Tarhān and Hulailān

Authority :—Corrections to Routes in Persia, vol. iii (1914), no. 99 B (Aug. 1908).

From Khurramābād to Tarhān the route follows the road given in *Route* 11 b (to Pul-i-Madiān Rūd), and in *Route* 11 d (Pul-i-Madiān Rūd—Tarhān). So far it is easy: the Kashgān is the only serious obstacle, and a cart-road could be made without difficulty.

Beyond Tarhān the route is suitable for pack transport only. The Tang-i-Kalan Duran and the Tang-i-Mivajan are difficult obstacles, and much blasting and preparation would be needed to make them fit for ordinary use. From Talandesht to Kirmanshah the road could be made fit for wheeled transport without much difficulty.

Water is obtainable in fair quantities throughout. Fuel also is procurable throughout. The grazing in the Serferuzābād (or Māhīdesht) plain is good. Wheat and barley can there be obtained in fair quantities, at any rate after the harvest. In normal times the greater part of the yearly crop is sold. The yearly produce may be calculated on a rough average at 500 *kharwars* of wheat and 500 *kharwars* of barley for every 50 houses or huts (1 *kharwar* = 650 lb.).

The times given in the margin were taken by a caravan going in the reverse direction.

hrs.	min.	
—	—	**Khurramābād.** Follow *Route* 11 b (reversed) to Pul-i-Madiān Rūd (47 m.), and *Route* 11 d from Pul-i-Madiān Rūd to Tarhān plain (63 m.).
0	0	**Tarhān** plain. Proceed in a general NW. direction over the plain by a track fit for all transport. Then ascend steadily by a track fit only for mules and donkeys to the **Tang-i-Kalan Daran** (alt. 6,000 ft.). Caravans cross this pass, but it would need a good deal of blasting and preparation to make it fit for transport on any considerable scale. Beyond this pass to the Tang-i-Mivajan the road is a good open track over slightly undulating ground passable for all transport. From the **Tang-i-Mivajan**

hrs. min.

there is a difficult descent of 3 m. to Hulailān. In places the path when used in the reversed direction was found almost impassable.

10 30 **Hulailān** plain. Camp near the Qara Sū river, from which excellent drinking water may be obtained.

Cross the **Qara Sū** near the **Imāmzādeh Shāh Mohammed.** In August 1908 the water was up to, and over, the animals' bellies. The stream was 30–40 yds. across, fairly swift, with stony bottom and low banks. From here to the end of the Hulailān plain the road is a broad, level track. Then it passes over undulating ground, and, though easy for pack animals, is impassable for wheels owing to frequent nullahs. In the last 2 or 3 m. in the **Jalālavand** valley, the road is very narrow, and much interrupted by irrigation cuts. In the last 2 m. the **Āb-i-Vezmān** has to be crossed twice. It formed no serious obstacle in August. At both crossing-places the bed is very stony. At the first the stream is 20 yds. across and nearly 2 ft. deep in August: at the second the stream is about 15 yds. across, is about 1 ft. deep, and has less force of water. The bed is about 100 yds. wide.

16 45 Camping-ground near the Āb-i-Vezmān in the **Jalālavand** valley. Crops of rice, wheat, barley, and Indian corn in Jalālavand. Fuel is obtainable. From here to Talandesht the track is suitable for mule or donkey transport only.

Ascend the Jalālavand valley, at first gradually, but very steeply for the last ½ m. before reaching the **Tang-i-Kharribeg,** an obstacle, though not a very serious one. This pass leads into another, the **Tang-i-Surkhbeg,** where the pathway at places is very rough and rocky, and though there are no very steep gradients a good deal of preparation would be needed for use by transport on any considerable scale. Almost immediately after this pass,

22 0 A camping-ground in the **Talandesht** valley is reached. The name Talandesht is given to a valley which runs NW. to the Kalhur country. See also *Route* 9. Wheat, barley, and straw are plentiful. Large herds were pasturing here in 1908.

Proceed from here through the **Tang-i-Kulilān,** where the track is generally good, though there are a few difficult

hrs. min.

parts. There are no gradients over 1 in 9. The pass is practicable for pack transport only. Beyond the pass the broad valley or plain of **Serferuzābād,** lying south of the Safīd Kūh, and watered by the Āb-i-Marik, is reached. The part of the plain lying farther NW. is the plain of Māhīdesht (*Route* 9). Proceed to the Āb-i-Marik by a broad track passable for all transport. The villages of Serpushik (50 houses) and Musamirinj (400 houses) are passed *en route*: they seem to lie S. of the Āb-i-Marik. There is good grazing in their neighbourhood and abundant water from springs at Musamirinj. Wheat, barley, and straw can be obtained at them. The Āb-i-Marik is crossed: in August it was about 2 yds. (?) broad and 1½ ft. deep: it has steep banks and could easily be bridged: the water is good. From the stream there is only an indistinct track to Sirvānu, but it is passable for vehicles.

26 30 **Sirvānu** (alt. 5,400 ft.), 100 houses. Water plentiful from three springs. *Bhusa* for fodder. Large numbers of sheep and cattle. Wheat and barley grown. Fuel limited.

The first part of the road, a short stretch going E., is passable for pack transport only. After this stretch the road is practicable for all transport. There is no information as to the line taken by the route, except that it leads to Ser-i-Āb.

30 0 **Ser-i-Āb,** spring and tank 1¼ m. from **Kirmanshah** (see vol. iii, *Route* 28 a).

ROUTE 11 f

KHURRAMĀBĀD—BURUJIRD

(i) *Via* Chalān Chulān (61 m.)

Authority :—Corrections to Routes in Persia, vol. iii (1914), 88 D: Reports of 1895 and 1911.

This is the main caravan route, which makes a détour to E. and is about 11 m. longer than the direct route by the Bairānwand valley (route ii, below). The hill-slopes favour the construction of a gently graded road, but a little rock-cutting would be necessary on the

Zāgheh pass, and on the descent from the Razan pass to the Silakhur plain. (Guns were taken over the Razan pass in 1911.) The gradient of the road over the Chavīreh Shāh needs to be modified for wheeled traffic. The Hurud river requires bridging: it is difficult to ford in spring. The Āb-i-Burujird is bridged near Chalān Chulān, but the bridge needs repairs for the use of carts.

The passes are sometimes blocked with snow for as much as a month, and snow may lie on the whole road for the same period, but between the passes it is generally not deep enough to hinder traffic.

Supplies are plentiful at Khurramābād and Burujird: little or none elsewhere. Fuel is scarce.

Miles from **Khurramābād**	
0	**Khurramābād** (alt. 4,400 ft.). General direction to Zāgheh, NE. (Map I. D., sheet 9 C, makes it about E.). The road crosses the bridge and ascends a valley running NE. A rapid stream 20–30 ft. wide runs down the centre of the valley. On either hand are rocky hills. The road is in places a mere mule-track, though easily made passable for wheels.
$\frac{3}{4}$	Cross stream mentioned above by a bridge 45 ft. long.
$3\frac{1}{2}$	A track diverges to **Kamalwand** and **Zad,** whence **Zāgheh** can be reached.
	Main road turns NNE. over grassy cultivated plateau and through the **Tang-i-Zaideh Shir** (alt. 4,900 ft.), south of which stands an *imāmzādeh.* The gorge is 4,300 yds. wide, and there are rocky hills rising 1,000 ft. above it on either side.
5	Route leaves the *tang* and follows a stream across the **Tajareh** plateau. Route ii, below, diverges to l.
9	Enter a rocky gorge. Beyond the gorge the **Deh Safīd** plateau (alt. 5,500 ft.) is reached. The **Darreh Darāz** valley is ascended. The track keeps to the W. of the valley to avoid a gorge. It then climbs a steep rocky pass, which could be easily improved to **Qal'ah Kurisi,** a ruined mud fort (alt. 6,000 ft.).
	Here a track diverges to l. over **Kūh Bumāni** (7,000 ft.) to **Darreh Saki** (6,200 ft.) in the Hurud valley, 8 m. distant.
	Route descends again to the Darreh Darāz valley, passing the parts of it known as Chinār Badar and Ābistān.

Miles from Khurramābād	
19½	Alt. 5,900 ft. Here begins the ascent out of the valley to the summit of the **Zāgheh** pass: both ascent and descent are steep.
22	**Zāgheh** stream. Camping-ground by stream. Good grazing. No fuel nor supplies.
	The general direction to Chalān Chulān is NNE. The road fords the stream by a muddy crossing, and ascends gradually crossing a basin 3-4 m. broad, swampy in parts and enclosed by rounded hills with grassy sides and rocky tops. The road is only a track across fields of clay.
25½	Descend from the basin into the Hurud valley. The descent is steep and requires the construction of zigzags.
26	Pass **Umain**, deserted.
	Cross **Hurud** river (alt. 6,600 ft.) by ford, generally easy but very difficult in spring.
	Thence ascend by a good road on a fairly easy gradient past the hamlet of Rang-i-Razan to
32	Summit of **Chavireh Shāh** pass (alt. 7,200 ft.). The hills on either side are 1,300 ft. above the pass.
	Easy descent to
34	**Razan** (alt. 6,500 ft.), a small village with a good deal of cultivation. It stands on a stream flowing to the Āb-i-Burujird. Good grazing in neighbourhood.
	Ascend pass S. (or E. ?) of Razan by an easy gradient.
36	Summit of pass (alt. 7,150 ft.). Thence down stony, steep descent to
38	**Azīzābād** (alt. 5,750 ft.), on stream. Good grazing in neighbourhood.
38½	Foot of hills. Hence a good track leads along the Silakhur plain.
42	Cross the **Diz** river by a brick bridge on masonry foundations. It is in fair repair, but is not safe for carts, having no side walls. The river is generally easy to ford except in spring, but it has the reputation of being treacherous.
43	**Chalān Chulān** (alt. 5,200 ft.), a large village in the plain, here 5 m. broad. Good grazing: fuel scarce: some supplies.
	General direction to Burujird, NNW.
	Road runs up the valley, keeping near the hills on the E.

Miles from **Khurramābād**	
	side. The track would be fit for carriages throughout with a little improvement at one or two points. The track up the centre of the valley is bad and not usually followed by caravans.
	The numerous villages in the plain were found in 1911 and 1913 to be nearly all deserted owing to Bairanwand raids.
47	Pass **Wilyan** village and *imāmzādeh.*
61	**Burujird.**

(ii) *Via* THE BAIRANWAND VALLEY (40 M.)

Authority:—Corrections to Routes in Persia, vol. iii, 88 E : Reports of 1890 and 1911.

This is the more direct route, but is more hilly, and has been generally unsafe. It is used by messengers, but is not suited to caravan traffic. There are two or three tracks E. and W. of it, of which no details are known.

Miles from **Khurramābād**	
0	**Khurramābād.** Follow route (i), above, to m. 5.
5	**Tajareh** plateau. The track diverges northwards from the main route and crosses the Tajareh plain to **Deh Fīr.** Thence across hills by the **Tang-i-Barreh** (or Darreh) to the salt mines of **Nimak Ser.**
16	**Bairanwand** valley.
23	Reach foot of the **Kūh-i-Puneh.**
	Track here bifurcates, the easterly branch going by the **Tang-i-Var Kūh,** the other by the **Tang-i-Bughal** 4 m. to W. The latter track is good throughout.
28	These tracks unite at the **Tang-i-Dinarabda** (?).
30	**Silakhur** plain. A good track along the W. side of the valley leads to
40	**Burujird.**

ROUTE 11 g

BURUJIRD—KIRMANSHAH (121½ M.)

Authority :—*Routes in Persia*, vol. ii, nos. 68, 70, 71 (Reports of 1898 and 1905).

Before the war the main route described below was passable for field-guns or could easily have been made so, and camel-transport could use the route. It is not known how far the road has been improved recently.

The most serious obstacles are the larger streams: these were for the most part bridged before the war. The pass at m. 77 is sometimes blocked by snow in winter.

There is much cultivation along the route, and numerous villages are passed. A considerable quantity of supplies could probably be collected at Kangavar. The route is well supplied with water. Fuel is obtainable at least as far as Kangavar.

Miles from **Burujird**	
0	**Burujird.**
	A route from Burujird to Kangavar, longer than that by Nihavand described below, was sometimes preferred on account of its greater security from Lur raids. It makes a northerly détour over undulating or hilly country by **Ushtarun** (m. 14), **Āb Zaman** (m. 34), **Hamilābād** (m. 44), **Parasia** (m. 54), to **Kangavar** (m. 72). According to a Report of 1905, the track is good as far as Hamilābād, but needs a certain amount of labour to widen it and improve the gradients for artillery and wheeled transport. Beyond Hamilābād the track is still good, and less labour would be needed to make it fit for wheels. The road is well bridged. There are no serious physical obstacles. The water *en route* is good and plentiful. Supplies available on the spot at the intermediate stages would not be considerable, but the country-side is fertile, and large quantities of wheat, barley, and rice could be collected from it in their season. See further *Routes in Persia*, vol. ii, no. 70.
	General direction to Ashtaranan, NW.
1	Cross aqueduct by double brick bridge, and then over rolling country, mainly ascending. Reach the Diz valley.
12	**Ashtaranan,** village of 600 houses. (Distance from Burujird according to one authority, 8 m.) Four *qanats*. General direction to Nihavand, NW., over down-like

Miles from Burujird

country, with villages in the valleys. A low pass is crossed on this stage, perhaps 4 m. from Ashtaranan.

33 **Nihavand** (pop. 10,000–12,000), a decayed town in a valley nearly surrounded by hills. Water and supplies plentiful.

General direction to Karez, NW., over a hill into a valley and past villages.

45 Through some low hills and then by a stone bridge over the **Maluya** river, which is often in flood and unfordable. (There is a ford, 3 ft. deep when practicable, about ½ m. E. of the bridge.) According to one authority the distance from Burujird to this bridge is only 33 m.

Through a cultivated valley to

50 **Karez,** the westernmost of three villages of that name.

53½ Cross a river by a ford 3½ ft. deep in February, with rapid current. Beyond the river is Feruzābād village. Here one track leads up to a saddle in the hills, while another (the main road, but the longer) branches to r. Beyond the saddle cross a marsh, and then over an open plain with villages, where the road is marshy in places.

64½ Recross the river forded at m. 53½. (The main road referred to above crosses the river some miles higher up by a bridge.) From here cross the plain, over several small streams to

66½ **Kangavar** (pop. about 5,000), where the main road from Hamadan to Kirmanshah is struck. Camping-ground on fields and pastures E. of Kangavar. The district is fertile. Water abundant. On a hill overlooking the town is a ruined brick fortress.

General direction to Sahneh, WSW. Before the war the road was rough and stony for most of the way and in places was impassable for carriages. Several water-courses are crossed in the first few miles.

70 Cross **Kabutar Lana,** small river, by brick bridge.

71½ After this point cross a low ridge by gradual inclines and then begin a long steep ascent (good enough for guns before the war).

77 Top of pass (over 700 ft. above Kangavar). Steep descent into valley: then by defile through low hills.

82½ Reach plain of Sahneh. Cross several small streams.

84½ **Sahneh,** small town in well-watered and cultivated valley, at the foot of rocky and precipitous hills to N. Gardens

Miles from **Burujird**

and plantations. Water plentiful. Some supplies. Good camping-ground on both banks of a stream NE. of Sahneh.

General direction to Bisitūn, WSW. Ascend gradually to the Kajavah Shikkān pass, whence there is a long steep descent. Thence over undulating plain, and past cultivation and marshy ground by a winding track. The Gumasiāb flows to l. of the road, sometimes coming close to it, and several canals and tributary streams are crossed: the most important are apparently bridged.

100 Pass close under **Piru** peak, 1,700 ft. above the plain.

101½ **Bisitūn,** 400 houses. Camping-ground among fields to l. of road near a broken khan. Camping space is rather restricted owing to the broken nature of the ground, which is intersected by streams flowing into the Gumasiāb. No shade. Road from Bijar joins here.

General direction to Kirmanshah W. by S. Good road. Over low undulations for the first few miles.

108¼ *Route* 11 e (i) is joined (at m. 96¾) and followed over plain to

121½ **Kirmanshah.**

THE EUPHRATES VALLEY

ROUTE 12

BASRA—NEJEF (284 M.)

Authorities:—Field Notes on Mesopotamia, 1915, Route 5 a; and other information.

An easy desert route along the southern edge of the Euphrates Valley. The soil is mostly firm sand and gravel, and the going is good. Water is plentiful throughout; it is usually brackish, but drinkable, except at Qasr ibn 'Ansar (m. 144), where it is fit for animals only, and in the Bahr-i-Shināfiyeh. Fuel and fodder are plentiful, especially in spring, except between Qasr ibn 'Ansar and Nejef. Lucerne is obtainable at Basra, Zobeir, and Qasr Bīr Shagrah, but in limited quantities only. Some supplies can be procured at Samāweh; at Zobeir they are plentiful; elsewhere there are none to be got.

Miles from Basra	
0	**Basra.** The Basra—Nāsirīyeh route (13 a) can apparently be followed as far as Khamīsīyeh.
92	**Khamīsīyeh.**
	Qasr Bīr Shagrah lies about 20 m. SSW. of Khamīsīyeh. Qasr Abu Ghār lies about 15 m. NW. of Qasr Bīr Shagrah, and Qasr Nabah lies about 10 m. NW. of Qasr Abu Ghār. The only route described between Khamīsīyeh and Qasr Nabah follows this détour to SW.: it is easy going through sandy, gravelly country with much bush. Water-pan at Qasr Bīr Shagrah. It is probably possible to follow a more direct route over the open desert to Qasr Nabah.
114?	**Qasr Nabah**, a strong fort standing in a depression, near Tel Abu Sharān. General direction to Qasr ibn 'Ansar, NW.
	About 7 m. NNE. of Qasr Nabah are the extensive ruins of 'Ūr, S. of which are petroleum and bitumen wells at Tel Mughaiyir.
137	**Qasr ed-Daqāim**, ruined fort. Here there is a pond ('Ain ibn Dughaiyin of report?) of drinkable water, only slightly brackish.

Miles from Basra

144 **Qasr ibn 'Ansar,** where there is a large pan of very brackish water, fit only for animals.

The route continues NW., approaching the river, and goes over soil encrusted with salt and of the nature of quicksand. Fuel everywhere; grazing excellent.

174 **Samāweh** town. Pop. about 10,000.

The route runs along the S. (l.) bank of the Euphrates (Hindiyeh Branch, old channel: see *Route* IV C (i)).

There are now occasional patches of cultivation, and small date-groves along it.

210 **Shināfiyeh.**

Skirt S. end of Bahr-i-Shināfiyeh: water said to be unwholesome, almost undrinkable.

225 **Shāib Hisīb** (?) stream, said to be perennial. Abundant water has been found in it in February.

227 **Qasr Rahīm,** small village in plain. One spring. Plenty of camel pasture.

From here there are alternative routes.

ROUTE (i)

When the Bahr-i-Nejef is dry (that is, at any time except in the flood season) Nejef can be reached from Qasr Rahīm by the following route:—

239 **Rahbeh,** small village built round a castle in the midst of well-irrigated and cultivated land. There is a large spring near the castle walls, but it is sulphurous. Road proceeds to run among sand-hills, with brushwood and pasturage.

245 Road enters depression of the Bahr-i-Nejef. Ground spongy and heavily impregnated with salt. Direction almost due N.

259 Ascend steeply the limestone ridge on which **Nejef** stands and enter the town.

ROUTE (ii)

When the Bahr-i-Nejef is flooded the route skirts its edge. Sandy hillocks most of the way.

258 **Qal'ah 'Ozeir,** one good spring, 1 m. from edge of Bahr. Route proceeds along edge of lake, and rounds its NW. end, turning then to SE.

284 **Nejef.**

ROUTE 13 a

BASRA—NĀSIRĪYEH (140½ M.)

Authorities:—Force 'D' Route Report, Serial no. 7, with supplement (Reports of April, May, and August 1916); *Routes in Arabia*, no. 203 (mainly from Turkish Army records, 1915), Survey Maps nos. 43 and 47 (1915-16); other recent information.

The route is suitable for all arms, including field artillery. It crosses a salt plain to Sha'aibeh ridge and thence to near Khamīsīyeh traverses stony or sandy desert. It is passable for light lorries in the spring, and even in the flood season these can get to within a few miles of Khamīsīyeh. The following general account of the route in mid-August 1916 has been given (it is not certain how far the first two stages coincide with the road to Nukheileh described in detail below):—Basra—Zobeir, good, except between Fort George and Zobeir. Zobeir—2 m. beyond Nukheileh, ground hard and undulating, but with 50-yard stretches of softer soil covered with hummocks in the hollows; quite impassable for heavy lorries. Nukheileh—Gubashīyeh, ground broken and very soft sand in the nullahs; ground studded with tussocks; quite impassable for heavy lorries, but a road could be found which could take 30-cwt. Fiat lorries loaded; Fiat lorries with 16 cwt. stores and 10 men stuck in soft patches in 'Roumanila' (Rumeileh?) area. Gubashīyeh—Nāsirīyeh, going hard and good, but some little work would be needed to locate a road without soft patches; Fiat lorries with 16 cwt. stores and 10 men stuck in soft places in Gubashīyeh and Legatteh (Lagait) areas. Apart from light lorries, the road is best suited to pack transport; in the dry season the surface becomes dusty and breaks up; carts are hard on mules and bullocks are useless; the best transport animals are the local camels, which can do 3 m. p. h. The sending on of stores in boats has been found successful. For landing-places, see under m. 36, 50, 60½, 77. From about September to November the *khōr* is too shallow for water transport.

The Basra—Nāsirīyeh railway follows the general line of the route.

There is no difficulty about water, which is to be obtained either from the Euphrates *khōr* or from wells. Pumps and a 30-ft. length of hose should be taken, and it is recommended that an advance party be sent out a day before the main body, as the wells sometimes need cleaning out, after which the water should be allowed to stand for a day. Well-digging may be necessary; water may be expected

at a depth of 6–9 ft. below the surface. For Shabdeh wells see under m. 77.

Grazing is to be had, for camels only, except at Khamīsīyeh.

For fuel, only brushwood in small quantities is available, except near Barjisīyeh wood.

In hot weather a look-out should be kept for poisonous scorpions or snakes, which are specially numerous at Gubashīyeh.

Miles from Basra.	
0	**Basra.** In April 1916 the best road from Makinamalsus or Magil to Sha'aibeh Fort followed the railway embankment to the Basra—Zobeir road, and then turned along that road towards the Sha'aibeh (or Zobeir) ridge. A depression (called the Old Bed of the Euphrates) is crossed. The bed is soft, but in early April 1916 was passable for Fiat lorries and A. T. carts. (When flooded, it cannot be crossed by wheeled transport.) The road followed reached the Sha'aibeh ridge, and at 1 m. from Zobeir turned along the ridge to Sha'aibeh Fort. Surface conditions on the first stage were reported in April 1916 to be very variable, and it was recommended that the ground should be reconnoitred the day before any march.
	(It is not known how far the conditions described above have been modified by later work: see pp. 385–386.)
13	**Sha'aibeh** Fort. Good water: (i) well 100 yds. SW. of the fort, 12 ft. in diameter, 25 ft. to water level, about 6 ft. of water; supply of excellent quality sufficient for a brigade; (ii) well about 400 yds. the same capacity as (i): it is worked by donkeys and is suitable for watering animals; (iii) well roughly 300 yds. NE. of fort, of about the same size as (i) and (ii); the water in the well requires frequent changing before it becomes fit for use even by animals. Unlimited space for camping: some brushwood for fuel, to supplement wood ration.
	General direction from here to Shweibdah, WSW. Road passable for all arms (in early April 1916 Fiat lorries and A. T. carts passed over it: see also introduction).
	Proceed SW. (225°) towards Barjisīyeh wood.
17	Change direction to W. by N. (275°), following main caravan track.
21	**Shweibdah.** It was reported in April 1916 that the wells were small and shallow and that it was advisable to dig larger ones N. of the caravan track, revetted on

Miles from Basra

the inside. The water is abundant: it is slightly brackish, but becomes sweeter after the wells have been in use for a short time. Pumps are essential, as otherwise the edges of the wells fall in if men stand round them drawing water in buckets. Grazing for camels only. Some brushwood for fuel.

General direction from here to Graināt, NW. by N. Road in April 1916 was passable for Fiat lorries and A. T. carts, but see introduction to this route, and under m. 32 below.

Proceed NW. (311°).

29 Pass **Et-Tobah** mounds; from here bear slightly W. of N. (355°) towards Nukheileh tower.

32 **Nukheileh** tower. No village. Well of good water and some smaller water-holes. From here to Graināt the going is difficult for wheeled transport.

Proceed NW. by N. (326°), along edge of the Euphrates *khōr*, to

36 **Graināt,** low brick-kilns. The water of the *khōr* is brackish inshore, but was found to be sweet about 300 yds. out on May 1, 1916. The distance from the shore at which sweet water is to be found probably varies. *Bellams* drawing 3 ft. were brought to within 100 yds. of the shore on May 1, 1916. Grazing, for camels only, near camp. Some brushwood is obtainable, but not much.

About 4 m. N. by W. of Graināt is El-Lawi (Alluwi) Point, 1 m. to NE. of El-Lawi ruins. There is a good landing-place at the point, but stores could be removed thence only along the shore in the direction of Graināt, as in other directions for a radius of a mile the ground is too damp for transport.

General direction from Graināt to Ratāwi is W. by N. The road was passable for Fiat lorries in April 1916, but the stage was found an exhausting one for draught animals. In mid-August Fiat lorries with 16 cwt. stores and ten men stuck in soft patches near 'Roumanila' (Rumeileh?). See also introduction to this route.

Road runs due W. from Graināt.

42½ Road enters soft drift sand-hills through which it runs to

44 **Rumeileh,** two wells. From here proceed NW., skirting more sand-hills. Surface is now harder. The track of the Turkish Army's retreat (1915) is followed.

Miles from Basra

50 **Ratāwi.** Water from the *khōr*, brackish inshore but sweet 400 yds. out. *Bellams* carrying about 20 maunds (4 *taghars*) can be unloaded on the ill-defined island N. of Ratāwi. When the Euphrates is in flood the low-lying land between Ratāwi and this ground would have to be traversed by a causeway. Grazing, for camels only, near camp at Ratāwi. Brushwood for fuel in small quantities.

From here to Gubashīyeh the general direction is NW. by N. Fiat lorries covered this road in April 1916 (but in mid-August 1916 Fiat lorries with 16 cwt. stores and ten men stuck in soft patches in the neighbourhood of Gubashīyeh, but this may have been beyond that place: see also introduction to this route).

Follow tracks of Turkish Army's march in 1915, keeping on an average 1,000–1,200 yds. from the water's edge.

Proceed NW. by N. (321°) for 6 m.

56 Road curves westerly.

58 Buildings of Gubashīyeh come in sight.

60½ **Gubashīyeh,** mosque and khan. Excellent drinking-water in *khōr* right up to the shore. *Bellams* drawing 3 ft. 6 in. can be brought to within 50 yds. of the shore in flood season. Ample camping-ground near the water. Grazing for camels only. Brushwood for fuel in small quantities. Poisonous scorpions and snakes are numerous.

From here to Legatteh (Lagait) general direction is W. by N. (so Report: Survey Map no. 43 makes it W. by S.). Road is passable for motor lorries with difficulty. The going is heavy for wheeled transport, and in August 1916 Fiat lorries carrying 16 cwt. of stores and 10 men stuck in soft patches in this neighbourhood. For general description of road from Gubashīyeh to Nāsirīyeh in mid-August 1916 see introduction to this route. Troops should keep 1,000 yds. from the water's edge.

77 **Legatteh** (Lagait). No village. Good water from the *khōr*. Arab reports say that there is a depth of 2½ ft. right up to the bank. Grazing for camels only. Brushwood for fuel in small quantities.

From here to Hamīdiyeh the general direction is NW. (WNW.?). Road is passable for Fiat lorries and A. T. carts, but in the flood season going is heavy.

Miles from Basra

Shabdeh wells lie about 12 m. roughly SE. from Legatteh. It is reported that from either Legatteh or Shabasjīyeh the going is excellent for motors. The desert round Shabdeh has some sparse brushwood, which would present no obstacle to motors. At Shabdeh are several large wells containing good water. One of these taps an excellent spring, and is apparently inexhaustible. It is about 28 ft. deep.

In October 1916 Shabdeh was found to be occupied by the nomad section of the Harb tribe from the Hejaz.

89 **Hamīdiyeh.** There is nothing special to mark the camp at Hamīdiyeh, except that during the summer there is an Arab encampment on high ground 1,200 yds. from the *khōr*. Troops marching through at this season should camp nearer the water. Water from the *khōr*, slightly brackish inshore, but sweet about 200 yds. out. Grazing for camels only. Brushwood for fuel in small quantities.

From here to Khamīsīyeh general direction is given as NW. in Report, from Survey Map no. 43 it would appear to be only a little N. of W. Road passable for Fiat lorries and A.T. carts except in flooded areas (see below). Pasture land and gardens near Khamīsīyeh. Pass **Tel Ibareh** fort 2½ m. E. of Khamīsīyeh.

105? **Khamīsīyeh.** (The distance here given from Hamīdiyeh (16 m.) may be as much as 4 m. too long.)

The country N., E. and S., of Khamīsīyeh is flooded 'after heavy rains' (so Report: Survey Map no. 43 has 'from April to September') to a depth of about 6 in. Troops should then camp near Tel Ibareh fort (see above). When there is no flood troops could camp close to Khamīsīyeh. Water from flood (or wells at village ?). The flood water is very dirty, but quite sweet. No fuel or fodder. Very little in the way of supplies.

The village consists of about 200 houses, mostly reed-built, with a mosque and bazaar. The approaches to it are the creek leading to Sūq esh-Shuyūkh (see below) and a gate leading to the desert. The Basra—Nāsīriyeh railway passes by Khamīsīyeh.

From **Khamīsīyeh** to **Sūq esh-Shuyūkh.**

Distance by land 10–11 m. Ground low and marshy and much cut up by water-channels.

An authority who went from Khamīsīyeh to Sūq esh-Shuyūkh in Jan. 1910 by water says that the only means of communication between the two places (unless a wide détour is made) is a narrow

Miles from **Basra**

water-cut, about 3–6 yds. broad, with an average depth of 3 ft. The authority travelled in a *bellam* poled by two men. Average pace estimated at 5 m. p. h. (?), total time 3¾ hrs.

For details see *Route* IV A, pp. 135, 136, under m. 14½.

From **Khamīsīyeh** to **Nāsirīyeh** the stages given in a report compiled from Turkish Army records (1915) are as follows:—Bear NW. by W., avoiding marshy ground near Euphrates. At m. 15 from Khamīsīyeh reach **Abu Salabik**: no village: water from stream. Hence bear NNW.: reach end of desert at m. 22 from Khamīsīyeh cross rich pasture land dotted with reed huts. Five miles farther on the date plantations on the r. bank of the Euphrates are reached, 1 m. from Nāsirīyeh, which by this itinerary is given as 28 m. from Khamīsīyeh.

Report of 1916 gives route from Khamīsīyeh to Nāsirīyeh as follows:

General bearing to camp at m. 119 is NW. by W. (305°). The going is excellent. At about 1½ m. from camp (the camp near Tel Ibareh?) there is a deep ditch 'which may be avoided by keeping close to the water's edge'. 3 m. farther on pass an unfinished fort which should be left on the r., so as to avoid another deep ditch which runs from the fort to the water.

115 Enter **Zillah** area, which extends for about 1½ m.

119 Camp. **Utwaiyin,** a small hill, lies 2 m. SW. of camp. The water here is very dirty and brackish; it would probably be better 2 m. to E. No fuel. Excellent going from here to Sakharīyeh. Bear NW. (308°) to

123½ Two mounds. From here Tel Mughayir (Ur) and a small mound marking the site of Sakharīyeh camp can be seen.

131½ **Sakharīyeh** camp. Water from a channel, quite sweet. From here good raised road all the way to

140 **Nāsirīyeh.**

ROUTE 13 b

BASRA—NĀSIRĪYEH (155 M.)

SOUTHERN ROUTE TO KHAMĪSĪYEH

Authority:—Route Report of 1910.

This route, which does not follow a usual track, runs to Khamīsīyeh on a line which, at least for the greater part of the way, is slightly south of *Route* 13 a. The relation between the two routes beyond Shweibdah and Barjisiyeh cannot be exactly determined from the evidence available. The route given below between Zobeir and Khamīsīyeh was traversed on camel-back, in January 1910, by an authority who estimated his pace at 4 m. an hour on an average. Distances given here are calculated on this basis. The authority states that he followed a zigzag course owing to the insecurity of the country and the consequent anxiety of his native guides to avoid Arab encampments, &c. The indications of direction seem to be very incomplete. From Khamīsīyeh *Route* 13 a is followed to Nāsirīyeh. The ground on this southern route is apparently passable for all arms. There are soft places after heavy rain, but these can be avoided.

Miles from **Basra**	
0	**Basra.** See *Route* 13 a for the road nearly to Zobeir.
11	**Zobeir.** Leave Zobeir by a rough desert track, in a westerly direction, very slightly ascending.
17	Well, 30 ft. deep, 15 ft. in diameter; 4 ft. of water. Some slight cultivation here. About ½ m. to W. of track is the large village of **Barjisiyeh,** lying in trees in low ground and straggling away westwards.
24	Direction NW. Fall of ground from NE. to SW.
30	Small water-course running NW. to SE.
31	Mounds (5 hrs. from Zobeir). The mounds are described as 'two low *jebels* 200 yds. to N. of road'.
39	Direction NW. Smoke of villages and water (apparently the Euphrates *khōr*) seen 2–3 m. towards N.
49	Direction W. by N.
53	Dry water-course running NE.
57	Slight hollow with water-holes and high ground to N. and NE.

Miles from Basra	
80	Direction W. Many dry, shallow water-courses.
83	Direction NW.
97	High ground 500 yds. to NE. Arab *beits* in close proximity to NE.
	Direction W.
101	High ground to NE.
105	High ground to NW. Low hill 2 m. to N.
108	Low hill 1 m. to N.; water seen on the other side of it, with smoke of villages.
111	Rising ground. Fall of ground SW. to NE. Low *jebel* 200 yds. to S.
118	Low hill with square enclosure.
120	Low rising ground to W., and marshy grassy flats to NW.
125	**Tel Ibareh.**
127	**Khamīsīyeh.** From this point see *Route* 13 a, m. 92–m. 120.
155	**Nāsirīyeh.**

ROUTE 14

SAMĀWEH—HILLA (108 M.)

Via THE HILLA BRANCH OF THE EUPHRATES

Authorities:—Geographical Journal, September 1906, article by H. W. Cadoux describing a journey of September 1903; E. Sachau, *Am Euphrat u. Tigris* (journey of 1898).

The distances given below are rather uncertain, the evidence of the only travellers who seem to have followed this route in comparatively recent years being very meagre.

The greater part of the route lay over desert in 1903, the latest occasion on which it appears to have been traversed by a European. For some distance above Samāweh, as far as the fortified village of **Sheikh Tweyni** and beyond to **Abu Qawārīr,** there was fair cultivation. The place last mentioned seems to be about 18–20 m. from Samāweh. Beyond it, in 1903, lay desert. The conditions, however, may be somewhat improved now owing to the construction of the Hindiyeh Barrage. The Hilla Branch could probably be again deprived of water in the low season by the closing of the Hilla Regulator near the barrage. See further, introduction to *Route* IV C.

Miles from Samāweh	
0	**Samāweh.** The route followed in 1903 apparently strikes across the plain in a NNW. direction, cutting off the bend of the Hilla Branch to the E. Some cultivation and many irrigation canals in 1903. Pass fortified village of **Sheikh Tweyni.**
20?	**Abu Qawārīr,** village and ferry. See *Route* IV C (ii). m. 33½. Track skirts river.
35	**Imām Hamzeh,** shrine on the r. bank of the river. There is a ferry to the l. bank on which is a village of the same name.
	The track now crosses barren sandy country, the only vegetation being camel-thorn and a small desert plant with fleshy stems and leaves called by the Arabs *arid* and eaten by camels when there is nothing else to be had. The river is touched occasionally.
55	**Diwāniyeh.**
	The country now becomes less barren, but few details are given as to the route. It touches the river at intervals.
78?	Reach the river, which the route now follows. For the next 5 m. the country, in 1903, was desolate, many of the villages being deserted. The river bed was dry in September 1903, except for pools here and there. See further, *Route* IV C (ii).
83	Some improvement in cultivation for the next 10 m. Many fortified villages 200–300 yds. apart.
93	Good cultivation. Many villages with palm-groves. See *Route* IV C (ii).
108	**Hilla.**

ROUTE 15

KERBELA—HILLA (27 M.)

Authority :—Lorimer, *Gazetteer of the Persian Gulf*, 1908 (Report of December, 1905).

In ordinary weather and in the absence of floods this route is an easy one for all but wheeled traffic. In favourable circumstances and with preparation of the canal crossings near Tawarīj (Hindiyeh) and improvement of the bridges near Hilla, it might perhaps be made

passable for wheeled transport. Water, fuel, and fodder are abundant. There are no supplies *en route* except at Tawarīj, where there is a good deal of rice and limited quantities of wheat and barley; there is also some live stock. The single T.L. which connects Kerbela with Tawarīj follows the route described and is carried upon iron posts; but at the Duweihīyeh and 'Abd 'Auniyāt crossings (m. 10½–12) it is slung upon high wooden masts.

Miles from Kerbela	
0	**Kerbela.** Route goes SE., the date-groves of Kerbela flanking the road on both sides for the first mile.
4	The **Khōr el-Huseiniyeh** approaches the r. of the road. The water which escapes from this lake at its NW. corner is used for irrigation. It sometimes spreads over the road and spoils it in places.
5	Road skirts the village of **Suleimāniyeh** upon its southern side. Beyond this village is a bad slough which in times of flood can only be passed in boats.
10½	Ford the **Duweihīyeh** Canal from the Shatt el-Hindiyeh.
11	Route becomes very sandy.
12	Ford the **'Abd 'Auniyāt,** a canal from the Shatt el-Hindiyeh.
13	**Tawarīj** (Hindiyeh). Cross from the r. to the l. bank of the Shatt el-Hindiyeh by a bridge of 21 boats at the town.
	From Tawarīj the route goes almost SE. It traverses a flat, rather sandy, and partly cultivated region. The track is intersected by various canals from the Euphrates which are wider and deeper as Hilla is approached. Those nearest to the town have frail and narrow bridges, neither strong enough nor wide enough for guns, and without parapet or hand-rail. On the last three-quarters of the way from Tawarīj to Hilla the Birs Nimrūd mound (see *Route* IV C (i), p. 163, m. 138) is visible first on the r. front, then on the r.
25	Cross the **Tājiyeh** Canal. The enormous accumulations of silt-clearance which line its course make this canal appear from a distance like a high railway embankment.
27	**Hilla.**

ROUTE 16

TAWARĪJ—NEJEF (41½ M.)

Authority:—Lorimer, *Gazetteer of the Persian Gulf*, 1908 (Report of December 1905).

This was described in 1905 as being apparently not an established route, but a possible line of communication in the dry season.

Miles from Tawarīj	
0	**Tawarīj** (Hindiyeh). The general direction of the route to Kifl is SSE., through country liable to floods.
	The road at first runs somewhat W. of south, apparently bending round towards the E. of south in the neighbourhood of the Zibdīyeh Canal.
2	Cross the **Zibdīyeh** Canal, a branch of the Shatt el-Mulla. The Zibdīyeh is 12 ft. wide and 3 ft. deep in the dry season. A boat is sometimes used for ferrying baggage across the canal. Road runs in general SSE. direction.
3	Cross the **Shatt el-Mulla,** here a large canal 40 yds. wide and 8 ft. deep (1905), at a village of the Qarait tribe.
12	The road is about 3 m. W. of the Hindiyeh Branch of the Euphrates. Birs Nimrūd on the E. (see *Route* IV C (i), p. 163, m. 138) and Khān Hamad on the SW. (see *Route* 21 a, m. 87) are apparently both visible.
	Between this point and m. 18 the road bears more to the E., approaching the river. Unbridged canals intersect country between road and river N. of m. 18.
18	Road touches r. bank of the Hindiyeh Branch, and runs along it to Kifl, which lies on the opposite bank of the river, which is here 200 yds. wide.
23	**Kifl** on l. bank of river.
	Continue for about ½ m. along r. bank to point where the Kifl ferry crosses the Hindiyeh. For the route from that point to Nejef see *Route* 21 b, m. 79½–m. 97½.
41½	**Nejef.**

ROUTE 17

KERBELA TO RAMĀDIYEH (109 M.)

Via SHIFĀTHEH, RAHALIYEH, AND ROTHA

Authorities:—*Routes in Arabia*, 1915, no. 189; Lorimer, *Gazetteer of the Persian Gulf*, 1908.

Miles from Kerbela	
0	**Kerbela.** Track leaves town going W. over desert with poor grazing for sheep.
7	**Khōr Abu Dibs**, large lake on the N. at a distance of about 200 yards. It is about 2 m. long and 1 m. broad. The water is brackish; fit for drinking purposes for animals, but not for men. (See further, p. 349, bottom.) The track is here bounded on the S. by low sand-hills. At this point (m. 7) bearing slightly S. of W. (260°): flat ground.
9	Bear W. again: flat ground.
15	At this point bare sandy desert begins, and the fair grazing which had previously been obtainable ceases.
21	Bearing about W. by S. (255°). At this point a lake can be seen about 1 mile to N. According to native reports this is brackish and unfit for drinking.
33	**Shifātheh** (or Shetāteh) Oasis begins. Pop. about 8,000, composed of Shiah Arabs (not belonging to the well-known desert tribes) and a few Persians and Persian Balūchis. This is a large oasis about 7–8 m. in length, the same in breadth, with 100,000 palms.
	Shifātheh occupies a site which is flat but somewhat above the level of the surrounding country. The desert in the neighbourhood is said to be broken up by hollows and stony mounds. The date plantations of Shifātheh extend for many square miles, and among them are scattered, at intervals of about ½–1 m., 17 *qasrs*, or walled villages. The four largest *qasrs*, 'Ain, Darāwisheh, Hasāwi, and Al Bū Zain ed-Dīn, contain about 200 houses each; the smallest has 50 houses. The enclosing walls of these *qasrs* are 9–12 ft. high and about 1 ft. thick. The houses are of mud, and very poorly constructed. The oasis is irri-

Miles from Kerbela

gated by three large canals fed by the spring at Qasr el-'Ain. Some supplies are obtainable, but they are limited. Food is mostly imported. Little is grown in the oasis itself except dates and pomegranates. But lucerne for cattle fodder and small quantities of vegetables are grown in some of the spaces between the groves. A little wheat and barley is grown at **Julteh**, a place 4 miles west of Shifātheh, and also at a neighbouring place called Raudheh. There are springs at Julteh, but only rain-water at Raudheh. Live stock—1,300 sheep, 450 goats (1910). In 1908 there were said to be 100 horses and 1,500 donkeys, but no camels. Horses in 1910 estimated at 900. Plentiful water-supply for any number of men and animals from springs, the largest of which is situated in Qasr el-'Ain (m. 35 below). The water, however, issues from the ground in a warm state, and is slightly salt to the taste, with an odour of bitumen and sulphur. The smell passes away if the water is left to cool, but the taste remains brackish, and the inhabitants say that strangers often suffer from internal troubles when first drinking it, but get used to it after a time. Rain-water is procurable in hollows at Julteh till the end of July. Good water can be obtained by digging to a very slight depth at Khaidhir or Akhaidhir, a place situated in the sandy desert about 12 m. SE. of Shifātheh. Grazing for horses, sheep, and camels is good. There is a bazaar of about 60 shops in Qasr el-'Ain. The oasis does a brisk trade with the surrounding tribes.

To the N. of the oasis the desert is occupied by the Amārāt and the Dilaim; to the S. by the Shiah half-settled tribes such as the Beni Hasan, by the Amārāt, the Zagārāt, a sub-tribe of the Shammār, and others. Large tribes from the S., such as the Dhafīr, raid up here.

35 **Qasr el-'Ain** village. The principal place in the Shifātheh Oasis. See above for water, &c. The road now runs over flat ground, suitable the whole way to Rahaliyeh for guns and carriages, except perhaps after rain near Rahaliyeh. General direction of route, NNW. over plain with grazing for sheep and camels.

44 **Bardawil** (ruined fort) about 2 m. away to the E. Natives report good spring of water there.

51 Shrine, with well of water slightly salt but quite drink-

Miles from Kerbela

able. Arrangements for drawing water to be found at the well.

56 **Rahaliyeh** Oasis with 16,000 palms. Population largely negroid. The place is surrounded by brackish swamps, and is in consequence feverish and unhealthy. After rain the salt-impregnated marshy ground round the oasis becomes almost impassable. There is a Mudir here. Supplies obtainable in small quantities. Live stock—1,000 sheep, 500 goats, 900 horses, 1,200 donkeys. Plentiful water-supply for any number of men and animals from spring. It issues in a warm condition from the ground, and the same remarks apply to it as to the water at Shifātheh. Grazing all along the route between Shifātheh and Rahaliyeh for camels and sheep. At Rahaliyeh itself there is a fair for horses also. Good fuel supply.

General direction of route N., but start bearing nearly W. by N. (280°) over plain.

60 Two small springs, reported by natives not to dry up during the summer. From here track turns N.

63 Cross a dry wadi. Natives report water in the wadi after rain. Track lies over sandy desert destitute of grazing; suitable for guns and wheeled transport.

77 **Rotha.** No village. Occasional camping-ground for Bedouins. Its water-supply, however, from two large springs, is good, and sufficient for any number of men and animals. Round the springs there is good grazing for horses. The natives report that these springs do not dry up during the summer. The general direction of the route is still north, over desert without grazing of any kind. The track is suitable for guns and carriages the whole way.

93 Palms of Ramādiyeh become visible.

101 Lake **Habbāniyeh** 3 m. to E.; water brackish and unfit for drinking.

109 **Ramādiyeh** (Rumādi).

ROUTE 18

MUSEYIB—FELLŪJEH (60 M.)

Authority :—Routes in Arabia, 1915, no. 183 (Report of November 1905).

Miles from Museyib	
0	**Museyib.** Start on the Baghdad road (*Route* 21 a). The road runs along the l. bank of the Euphrates, which is here carefully revetted for about 600 yds.
¼	On the r. bank, which is here 6 ft. above low water, there is a good but narrow camping-ground for ½ battalion, on sandy soil. The river, however, is reported to rise 10 ft. in flood.
	The road crosses several canals, one of which has a strong brick bridge. The Baghdad road diverges to r. Gardens, walled and unwalled, of figs, dates, oranges, and pomegranates then begin on the l. bank.
9½	Date-gardens cease on l. bank.
	The road runs across flat, sandy country covered with camel-thorn.
10	Tomb of **Ibrāhīm el-Khalīl.**
15	**Imām Khidr Iliyās,** mosque on the l. bank with a few palms round it; some mulberry trees on the bank, which is here steep and 10 ft. above l.w. level.
	Up-stream from the mosque is a wood of tamarisk and poplar nearly 800 yds. long and 200 yds. broad.
	The best lands in this neighbourhood belonged, in 1905, to the *Dā'irat es-Sanīyeh.* Mas'ūd Arabs are found in the neighbourhood.
27	**Mahmūdiyeh** Canal. The road crosses this by a brick bridge in fair repair. There is no side-rail or parapet. The breadth of the bridge roadway is 11 ft. The canal bed is about 40 ft. deep from the top of the banks and 12 ft. wide.
	The country is still flat, sandy, and featureless, with numerous water-cuts, and covered with camel-scrub.
34½	Tomb of **Hanifeh-bin-Kādhim,** with one large and one small dome, about ¼ m. E. of the track.

Miles from Museyib	
39	**Khān Maqdam** (or Mijdam) ruins. No permanent habitations. Encampments of Zoba' Arabs may be met with. The Sabbāgh are the most important tribe in this neighbourhood. L. bank here shelving; r. steep. Breadth of river 200 yds. Poplar and tamarisk wood, 800 yds. × 150 yds. Bank of the river is here sandy. See further, *Route* IV D, m. 40.
50	Mouth of **Ridhwānīyeh** Canal. For the Decauville railway from Ridhwānīyeh to Baghdad, see p. 370.
52	The soil is here a sandy loam, with much cultivation.
56	**Abu Ghoreib** Canal. The road crosses canal by a good bridge with two strong brick arches of 6 ft. span (roadway 10½ ft. broad). The canal is 69 ft. broad between banks; breadth of water (l. w.) about 30 ft., depth of cutting 40 ft.
	About 200 yds. beyond the canal is a small graveyard.
	Road skirts pebbly ridge to E.; land cultivated near river barren elsewhere.
60	**Fellūjeh.**

CONNEXIONS BETWEEN TIGRIS AND EUPHRATES VALLEYS

ROUTE 19 a

NĀSIRĪYEH—KUT EL-AMARA (121 M.)

Authorities:—Routes in Arabia, 1915, no. 193 (Report of 1915); E. Sachau, *Am Euphrat und Tigris* (Journey of 1898); Indian Degree Maps, 3 E, 3 I, 2 L; Force 'D' Map Serial 79.

The stage from Nāsirīyeh to Suweij is under water in normal years during May, June, and July. When this is so, the flood may be avoided by making a détour round the western margin of the Butnijeh Lake. The rest of the route is reported by natives to be dry throughout the year, but is much intersected by water-cuts, and there seem to be marshes in the neighbourhood at least during the spring.

There is no drinkable water to be obtained on the part of the route between Nāsirīyeh and Decha Suweij (said to be 25 m. in length, though the distance in a direct line appears to be about 17 m.), except by making a détour (which adds 2 or 3 m.) to El-Butnijeh, and here from August till the first rains in December the water is brackish and bad, though the Arabs say it can be drunk. If practicable it would be safer to carry water for this stage. The subsoil water is 13–16½ ft. below the surface. From Suweij to Kut there is no difficulty, as, even when the bed is dry, good water can be had anywhere by digging from 3 to 6 ft.

Unless the Arab tribes are unfriendly, wheat, barley, straw, and meat should be obtainable throughout by arrangement. But owing to the uncertainty of the attitude of the Arab tribes no supplies can be relied on.

For a movement northwards from Nāsirīyeh, land-transport would be necessary throughout. There are not many boats at Shatreh normally (say some thirty small *bellams*, and ten large), and these would probably be removed before troops could reach the town.

Miles from Nāsirīyeh

0 **Nāsirīyeh.** The route leaves in a NNW. direction. The only obstacles between Nāsirīyeh and El-Butnijeh are, according to native reports, about six to eight water channels, all dry, none of them more than 6 ft. broad. These can easily be ramped. Marching very rough, but passable for all arms. (Suleimān Askari's motor lorries were driven down from Shatreh to Nāsirīyeh in March 1915, water-cuts being filled in for the purpose.)

15 **El-Butnijeh** on Butnijeh Lake. Force 'D' Report places Butnijeh at m. 13. Route proceeds to the Shatt el-Hai, here known as the Shatt esh-Shatreh, at Decha Suweij 9 or 12 m. on. The only obstacles are, according to native reports, some three to four small water channels.

27 **Decha Suweij,** small village. Force 'D' Report places it at 22 m. Here the route follows the r. bank of the Shatt el-Hai, running NW. for 10 m., crossing two creeks, one small, the other known as the Abu Shabeba, 18 ft. wide; both dry, or practically so.

37 **Shatreh (Shatret el-Muntefiq),** small town. There is a bazaar, containing about 300 shops, which is much resorted to by the Muntefiq. Besides the Shiah Muntefiq there are a small Jewish community and some Sabians. Shatreh is the head-quarters of a *Kaza* in the *Sanjaq* of Muntefiq, and is the residence of the ordinary *Kaza* officials. The Turks maintained a peace garrison of one battalion of infantry and two guns here, and some mounted police.

Route from **Shatreh** to **Durāji,** about 31 m. (The one authority for this route, E. Sachau, rode over it in January 1898. Distances taken from Indian Degree Maps 3 I, 3 E.)

The route runs SW., and passes at about 4 m. a Muntefiq village of reed huts with a watch-tower (under Sheikh Bargash in 1898); thence W. by S. to a range of mounds called **Tel el-Michzin,** site of an ancient city (6½ m.). Some distance after this cultivation ceases; the track then passes S. of a line of mounds called **Tel Medā'in** (10½ m.), site of an ancient Babylonian city. A great part of the country here is probably liable to inundation. Thence SW., passing well to the N. of a long range stretching from NW. to SE., and then passing a considerable mound, **Tel Ihzā** (15 m.), also on the S. horizon, to the **Shatt el-Khār,** 15½ m. (This is the distance according to the map. The 1898 authority says: 'a good 6 hours' journey', i.e. probably rather over 18 m.) Thence the route runs SW. past a village of Sa'ih Arabs (16½ m.), with a watch-tower and a primitive well. Thence passing (in 2 hrs.) **Tel Sanqareh** (ruins of the ancient Babylonian city of Larsa, 18½ m.) to **Durāji,** 31 m. (3 hours' ride from Sanqareh).

Miles from Nāsiriyeh

39 The **Nahr Beidhā** about here takes off from the l. bank of the Shatt el-Hai and runs SE. to the Hammār Lake (see *Route* V). **Abu Mahau** is near here. The route crosses the Shatt el-Hai above Abu Mahau at the upper end of the Nahr Beidhā. Shatt el-Hai fordable in August 1916.

Karadi, between Abu Mahau and m. 64. Position doubtful.

49 Route crosses the dry canal running E. from the Shatt to the great ruin mounds of **Tel Lōh,** about ¾ hr.'s ride from the track, and extending for 4 m. along the l. bank of the canal. The country is said to be a desert in the winter and a swamp in summer.

64 At this point the route, still keeping to the l. bank, is opposite **Mesefi,** a village with date-palms on the r. bank of the Shatt el-Hai. Force 'D' Report places this village at 14 m. from Shatreh, and 18 m. from Sheikh Heidar. About a mile farther on, on l. bank, is said to be **Sheikh Heidar.** This name, however, is reported to be unknown to the Arabs.

Above the point indicated as Sheikh Heidar a dry channel (the **Shatt el-ʿAma**) comes in on the r. bank of the Shatt el-Hai, which here apparently makes a détour to the W. See m. 90, below. Sachau's route apparently followed the Shatt el-ʿAma, and skirted the eastern edge of the Khōr Hafūr, a marshy lake which extends for about 8 m. It is the home of many pelicans, flamingoes, storks, and other water birds. Wild pigs are numerous on the swampy banks.

Main route to Kūt el-Hai apparently follows E. bank of main channel.

80 **Qalʿat es-Sikkar.** Pop. (1908) about 1,000, mostly Faili Kurds, the Arabs in the neighbourhood being Beni Hāshim. There is a small bazaar of 20 shops. Wheat and barley are cultivated in the neighbourhood, but in 1909 it was reported that there was no store of grain and no transport.

90 Above the N. end of the *khōr* the dry channel known as the Shatt el-ʿAma takes off from the E. bank.

95 **Kūt el-Hai** (Hai). Pop. (1908) 4,000. P. O., T. (line to Kut el-Amara along l. bank of Shatt el-Hai). Force 'D' Report places Kūt el-Hai 20 m. from Qalʿat es-Sikkar. About

Miles from Nāsirīyeh

two-thirds of the town consists of brick houses, the rest of huts. The neighbourhood of Hai can, in good seasons, afford to export wheat, barley, millet, maize, sesame, and some dates, besides *ghi*, wool, skins, and hides yielded by the sheep and cattle of the neighbouring Arabs. There is a bazaar of about 300 shops, and several khans and public baths. Three-fourths of the population are Shiahs. There is a Jewish community of some size, and about 100 households of Faili Kurds. The Arabs of the surrounding country are Beni Rabī'ah (mostly of the Serai section). Hai is the capital of the *Kaza* of the same name in the Muntefiq *Sanjaq* of the Basra *Vilayet*. The Turks maintained a small garrison here, and there were barracks and a military hospital for one battalion of infantry and a squadron of cavalry. The climate of Hai and the surrounding district is said to be dry and healthy. For fords between Hai and Kut see Appendix to this route.

The route continues in a general NNW. direction. Between Kūt el-Hai and Zinābiyeh 7 canals are crossed, all dry in l.w. They need ramping for wheels.

About 3 m. from Kūt el-Hai there is said to be the lower end of the long canal which is reported to run NE. from the Shatt el-Hai to the Tigris, which it enters in the neighbourhood of Mandalīyeh tracts. Not shown on recent maps.

107 **Rumiyeh** ford is passed to l.

112 **Zinābiyeh** about 1 m. to l. of route, on Shatt el-Hai.

114 **Nahr Gizan.** About this point is a *quffeh* ferry.

118 **Atab** village on the l. bank of the Shatt. From **Mahairij,** on the opposite bank, there is reported to be a well-watered route to **'Afej** (*Route* 20 b, m. 38).

Bifurcation of route. Left-hand road leads to a point on the Tigris directly opposite Kut in about 4 m.; right-hand road goes in about 6 m. to boat-bridge across the Tigris, after traversing which it is some 3 m. to Kut. There is a cross track connecting the two routes along the r. bank of the Tigris.

124 **Kut el-Amara.** (Force 'D' Report makes Kut 12 m. from Rumiyeh.)

Appendix

Notes on the Shatt el-Hai (Fords, etc.) in July-Dec., 1916

The Shatt el-Hai was fordable on July 16, 1916, and practically dry on September 5. Water had begun to flow again on November 15; on November 19 it had reached a point about 15 m. below Kut el-Amara, and on November 25 there was continuous water in it from Kut el-Amara to a point about 8 m. S. of Kūt el-Hai. On November 28, owing to a fall in the Tigris, there was apparently no longer any flow down the Shatt.

In August the Shatt was easily fordable between **Abu Mahau** and **Karadi** (see under m. 39 above); it had been unfordable at Karadi in June. In August it was almost dry at various points between 4 and 10 m. above Kūt el-Hai (m. 95 above), while towards the end of November it was 6–10 yds. wide 1–3 m. N. of that town.

At the beginning of July **Rumiyeh** ford (m. 107 above) was passable. In August there was a ford at **Zinābiyeh**, the Shatt being almost dry, and early in December, again, there were two dry reaches, each 1 m. long, down-stream of this point. At **Zuweia**, apparently in this neighbourhood (14 m. below Kut el-Amara), the stream was 5 yds. wide towards the end of November: the ground here looked bad for heavy wheeled transport or guns, though the approaches to the river-bed seemed good. In the neighbourhood of **Basrugiyeh** and the **Nahr Gizan** (m. 114 above) the Shatt, almost dry in August, was dry over a stretch of 100 yds. again in early December, showing that the level of this ford is higher than that of any other between Kut el-Amara and Zinābiyeh. 5 m. above Basrugiyeh, and about 4½ m. below the head of the Shatt el-Hai, there is a ford at **Bessouia.**

ROUTES 19 b (i–viii)

THE TIGRIS—SHATT EL-HAI

Authorities:—Force 'D' Route Reports, Serial no. 8, May 1916: Additions and Corrections, September 1916.

It appears that in the flood season there is no practicable land-route between the Tigris and the Shatt el-Hai. From the neighbourhood of Sheikh Sa'ad downwards there is, in the h. w. season, a continuous belt of flood-water several miles wide. That part of the marsh which stretches from the neighbourhood of Hirdabeh on the

N. to the Mudalīl on the S. never dries up. But N. and S. of this permanent swamp more or less practicable land-routes can be found in the dry season, the best of which appear to be: Kumeit—Kūt el-Hai (iii), 'Ali el-Gharbi—Kūt el-Hai (vi), and Sheik Sa'ad—Kūt el-Hai (vii). According to reports, there is no land-route worthy of consideration S. of Kumeit. It has proved impossible to find a through water-route except by going down to the Hammār Lake and up the Nahr Beidhā (see p. 185).

On all the routes given below there is an absence of landmarks and defined tracks, which renders 'the march of a column in waterless country dependent on guides and on compass bearings and distances taken off maps of questionable accuracy'.

All these routes, for the greater part of their course, are badly supplied with water.

The authorities throughout, except for the first part of route (iii), are Arab reports. Distances are very uncertain.

(i) Kumeit—Karadi (75 m. ?)

Follow route (iii) to **Sadraniyeh** or **Baghailat**, 20 m. From Sadraniyeh to **Karadi** a dry road was reported in May 1916: it appears, however, that owing to lack of water marches beyond Sadraniyeh would be too long for any but mounted troops. The total distance of 75 m. is from an Arab estimate: it is probably somewhat exaggerated.

(ii) Kumeit—Qal'at es-Sikkar (73 m. ?)

Follow route (iii) to **Sadraniyeh** or **Baghailat** (20 m.).

From Sadraniyeh a route runs to **Qal'at es-Sikkar** *via* 'Hachchamat' (Hachaima?) wells: it is doubtful whether it is passable for wheels. Marches from Sadraniyeh would be too long for any but mounted troops. The total distance of 73 m. is from an Arab estimate: it is probably somewhat exaggerated.

(iii) Kumeit—Kūt el-Hai (50–55 m. ?)

This route apparently becomes passable in July or August. In the h.w. season Sadraniyeh or Baghailat can be reached by boat, but there is no through water-route. Some bridging would apparently be needed for wheels on the S. bank of the Dujeileh (see route *b* below, m. 6 and m. 8), and perhaps also on the N. bank.

Water can always be obtained from the Dujeileh (or from the marsh to N.) as far as Siderat; after that there is none until Khōr Umm Gateibeh is reached. Grazing is good on both banks of the Dujeileh to Sadraniyeh or Baghailat: after that there is none until

Khōr Umm Gateibeh, when it is good. Fuel from scrub. Sheep on both banks of the Dujeileh for the first 20 m., and generally at Khōr Umm Gateibeh. In September 1916 large quantities of grain and *bhusa* were to be found at the Sadraniyeh and Baghailat forts.

On September 22, 1916, the water in the Dujeileh was of the following dimensions:—From the point where the Chediyeh Creek took off from it, for 3 m. westward, it had shrunk to a channel 8 ft. wide and 2 ft. deep; after 3 m. it widened to 45 ft., and had a depth of 3–3½ ft., as far as a point ½ m. E. of Sabab Abu Kashaibeh. Then it gradually shallowed till it was only a few inches in depth at a point ½ m. SW. of Sabab Abu Kashaibeh. Thence again it gradually widened to 150 ft., with a depth of 5 ft., at 4 m. SW. of Abu Kashaibeh. At 4 m. E. of Baghailat the width increased to 180 ft., and the depth to 6½ ft. (Unless these distances follow the windings of the canal, there is some discrepancy between them and the distances given in the itinerary.) The following points on the Dujeileh are good landmarks, and might be used as signalling stations: Rumeileh Mound, on S. bank, 3 m. W. of the Chediyeh: Tel Daraj, on N. bank: Tel Abu Kashaibeh, on N. bank, and ½ m. SW. of Abu Kashaibeh: Fort Hafiz, on N. bank, 3 m. E. by N. of Baghailat.

Miles from **Kumeit**	*(a) By the N. bank of the Dujeileh*
0	**Kumeit.** Start W. and cross the Kharash (dry at beginning of September.)
6	Cross ford on the **Dujeileh,** sandy and practicable for wheels. Follow N. bank of Dujeileh at distances varying from 500 yds. to 2 m.
9	**Sabab Tel Daraj,** canal, at beginning of September 1916, 9 ft. wide, 2 ft. deep, with muddy bottom, impracticable for wheels. On September 22, 1916, this stream could be avoided by a détour to N. along the edge of the marsh.
	Proceed along road practicable for all arms.
12	**Sabab Abu Kashaibeh,** impracticable for wheels. This stream cannot be turned. The ford is 100 yds. above its junction with the Dujeileh. It has a firm sandy bottom and sloping banks. On September 22, 1916, the water was 1½ ft. deep and 15 ft. wide. At the junction with the Dujeileh the crossing of this canal is muddy and treacherous.
	From here to Kūt el-Hai the route is practicable for all arms in the dry season. Continue along the Dujeileh, both banks of which are covered to a depth of 100–200

Miles from Kumeit

yds. with thick scrub, consisting of thorny bushes 3–4 ft. high. This belt of scrub conceals several large depressions which fill as the floods rise. N. of this scrub, between it and the marsh, there is no undergrowth.

20 ? **Baghailat** (apparently not far from Sadraniyeh on S. bank). See routes (i) and (ii), and the route by the S. bank at m. 20.

Continue along the Dujeileh to

23 ? **Siderat.** Here the water in the Dujeileh, at the beginning of September 1916, was reported waist-deep, but it 'ends abruptly' about this point.

Proceed NW. (crossing the Dujeileh bed), and following the road between the hills of Abu Jemaim on the S. and Shadaf on the N. (the space between them is about 3 m.). After passing between these hills proceed due W.

42 ? Cross the bed of the **Khōr Umm Gateibeh** (dry in September 1916). Water can be obtained in the bed (by digging ?). Grazing: sheep.

52 ? **Kūt el-Hai.**

(*b*) *By the S. bank of the Dujeileh*

0 **Kumeit.** Follow the preceding route to

6 **Dujeileh** ford. Here, instead of crossing the ford, turn along the S. bank and cross the **Chediyeh,** a branch of the Dujeileh, 20 ft. wide with muddy bottom, impassable for wheels.

8 Cross the **Nahr Fitnah,** the bed of which is 8 ft. wide and 6 ft. deep (3 ft. of water at the beginning of September).

From here to Sadraniyeh there are several small irrigation channels to be crossed, but these are no obstacles.

20 **Sadraniyeh.** Route Report states that the preceding route is followed from here, which would make a crossing to the other bank of the Dujeileh necessary. But the Dujeileh seems to be 4–5 ft. deep in September in this neighbourhood, and it may perhaps be possible to continue along the bank of the canal and join the preceding route near Siderat.

The direct route from here to Kūt el-Hai goes about WNW. from Sadraniyeh. This direct route, which passes by Hachaima wells, runs over very broken ground and is impracticable for wheels.

52 ? **Kūt el-Hai.**

(iv) Kumeit—Es-Sinn (70 m.?)

Follow route (iii) to **Siderat** (23 m.). Thence follow the line of the Dujeileh depression. From Sadraniyeh (m. 20) to **Es-Sinn** the route was reported fit for wheels in May 1916. Route (vi) is crossed at **Hasan Abu Tarabeh.**

(v) 'Atāh—Kūt el-Hai

In May 1916 a *mashhūf* route led down the **Nahr el-Gureimeh,** the head of which is a short distance below **'Atāh** on the Tigris. The canal was then 25 yds. wide and 9 ft. deep with a rapid current from the Tigris. In 1½ hrs. by *mashhūf,* the deep main marsh of the **Khōr Suniyeh** was reached. This marsh was crossed in 6 hrs. to **Khirbeh,** whence a track leads W. to Hai. The Khōr Suniyeh W. of 'Atāh never dries up.

(vi) 'Ali el-Gharbi—Kūt el-Hai (47 m.)

This route is reported by agents to be the best provided with water of all the routes between the Tigris and the Shatt el-Hai. In the dry season it is passable for all arms, though the three dry canals crossed just before reaching Kūt el-Hai would need ramping. In the h.w. season the Khōr Suniyeh would not be passable. (In May 1916 a flooded area began at m. 1 from 'Ali el-Gharbi and extended for 10 m.; water 4½–6 ft. deep.)

Miles from 'Ali el-Gharbi	
0	**'Ali el-Gharbi.** No drinking-water till
7	**Hirdabeh** wells. Pools and wells numerous. The water of the pools has a good deal of deposit in it, and is full of water-fleas; but it is not brackish, nor unpleasant to the taste: it is fit for drinking if boiled or chlorinated. The water of the wells is clear and neither brackish nor sulphurous: it is fit for drinking if chlorinated.
	From Hirdabeh to Hasan Abu Tarabeh there is good grazing, and sheep are plentiful.
8	Pass **Abu Fazl** wells, 1 m. to NW. of road.
10½?	**Sahul** wells. Water muddy, but neither brackish nor sulphurous: fit for drinking if chlorinated.
15?	**Abu Kafureh,** *nishan* (mark) only.
21	**Hasan Abu Tarabeh,** on the Dujeileh. Water obtainable by digging in the bed of the Dujeileh.

From Hasan Abu Tarabeh a route apparently runs to **Qal'at es-Sikkar,** but no details are available. The marshes would be too long for any but mounted troops with light transport.

Miles from 'Ali el Gharbi

From Hasan Abu Tarabeh there are three possible routes.

(*a*) *Northern route*, by Bujaiyar.—This is the best provided with water. At **Bujaiyar** (about m. 35) there is a pool of good water which in September 1916 was 200 yds. broad and 3 ft. deep. It was in existence later in the dry season (October?). From Bujaiyar proceed to Kūt el-Hai by Maraibeh wells: see route *b* below. By this way **Kūt el-Hai** is reached at about m. 47 from 'Ali el-Gharbi.

(*b*) *Central route*, direct to Maraibeh.—First water at **Maraibeh** wells (m. 38). Between Maraibeh wells and Kūt el-Hai 'three dry canals' are crossed, needing ramping for wheels. 'Two big nullahs' are also mentioned, which may be included under the three canals. By this line **Kūt el-Hai** is reached at about m. 45 from 'Ali el-Gharbi.

(*c*) *Southern route*, by Qal'at 'Abd and Medeideh.—Water obtainable by digging at **Medeideh** (m. 33). Between Medeineh and Kūt el-Hai the same obstacles are met with as beyond Maraibeh on route *b*. By this line **Kūt el-Hai** is reached at about m. 45 from 'Ali el-Gharbi.

Miles from Sheikh Sa'ad

(vii) SHEIKH SA'AD—KŪT EL-HAI (33 M.)

0 **Sheikh Sa'ad.** There is no information as to the fitness of the road for wheels as far as Gussab's Fort. There seems to be no serious obstacle on the way. Water from the Tigris and good grazing as far as **Shoaniyeh.** From there no water, but fair grazing, to

9½? **Abu Saifi,** a *nishan* (mark) on the Dujeileh. Water in the bed of the Dujeileh. Crossing easy.

According to map T.C. 43 (July 1, 1916), a track branches off here WSW. to the Shatt el-Hai at Atab and Bessouia ford.

Beyond the Dujeileh there is no water nor grazing till

18? **Gussab's Fort,** on the **Shi'b Gussab,** 30 ft. wide, easy to cross. Water at Gussab's Fort from the Shi'b Gussab in the h.w. season, and from wells in the dry season. These wells are not in ordinary use, and the water contains a slight deposit, but is not brackish: it could be made drinkable. Water can also be obtained at 4 ft. by digging. Poor grazing near the fort.

Miles from Sheikh Sa'ad	
	Here route (viii) joins.
	From Gussab's Fort to Kūt el-Hai the road would be practicable for all arms, and probably for motor transport, if the canals between the Yadhub and Kūt el-Hai were ramped. Grazing fair: probably some sheep: for water see m. 30.
	Proceed, skirting the E. side of the **Khōr Gussab,** and then the W. side of the **Khōr ed-Dozah** (Khōr Maraibeh).
30?	Cross the **Yadhub** Canal, 20 ft. (?) wide, running from the Shatt el-Hai to the Khōr ed-Dozah. The crossing of the Yadhub where the route strikes it is marshy and very difficult, but a better crossing may be found 1 m. farther E.
	Water from wells in the Yadhub tastes good, and could be rendered drinkable by chlorination. There are wells in the centre of the Khōr ed-Dozah (dry in August), the water from which is like that at Gussab's Fort.
	Between the Yadhub and Kūt el-Hai there are many 3-ft. irrigation channels (and perhaps three larger canals, dry in l.w.) which would need ramping for wheels.
33	**Kūt el-Hai.**

(viii) Dujeileh Redoubt—Kūt el-Hai

(*a*) *Eastern Route by Gussab's Fort* (27 m.)

Passable for all arms in the dry season if the canals in the last 3 miles before Kūt el-Hai were ramped (see route (vii) under m. 30).

Miles from Dujeileh Redoubt	
0	**Dujeileh Redoubt.** No water nor grazing till
12	**Gussab's Fort.** See route (vii) for this place and for continuation of route.
27	**Kūt el-Hai.**

(*b*) *Western Route by Zinābiyeh* (28 m.)

Water in l.w. from pools or by digging.

0	**Dujeileh Redoubt.** No details for route as far as
11	**Zinābiyeh,** on the E. bank of the Shatt el-Hai.
	From here follow the bank of the Shatt el-Hai, crossing 7 canals (all dry in l.w.), which would need ramping for wheels. At m. 16 Rumiyeh ford is passed on the r.
28	**Kūt el-Hai.**

ROUTE 20 a

BOGHEILEH—HILLA (61½ M.)

Authority:—Sarre and Herzfeld, *Archäologische Reise im Euphrat- und Tigris-Gebiet* (account of a journey in February 1908); native informtion, 1916.

This route follows the dry course of the Shatt en-Nīl across a plain inhabited only by nomads, except in the neighbourhood of Hilla. The plain has a very slight slope from W. to E. (about 30 ft. in 50 m.). The only eminences are mounds marking the sites of old settlements, and the banks of dry canals. The soil is alluvial. In the shallow depressions of the plain, flood-water from the Euphrates from time to time forms large marshes, which may remain for one or more years if they receive no further supply from the Euphrates. If renewed by more flood-water they may continue for decades. Their water becomes more and more salt, and eventually they dry up, leaving a salt crust on the soil. So long as the water is not too brackish, the nomads settle on the edges of these *khōrs*, and here and there practise a little cultivation.

Route passable for all arms, though difficult for wheels in flood. Water limited; further supply by sinking wells. Grazing good in rains. No fuel. No supplies except fresh meat in rains, when Arabs come to pasture cattle, sheep, and camels. At Nejmi, meat throughout year. Camping space unlimited.

Miles from Bogheileh	
0	**Bogheileh.** Leave town in WNW. direction along canal called Nahr Abu'l Jamūs. Cultivation. Tel Nu'mān 2½–3 m. to N.; to S. is Tel Siqūriyeh (5–5½ m.) covered with black stones. Floods W. of town, June 1916.
2½	Many small *khōrs* to m. 33 in rain: can be avoided. End of cultivated area (1908). To l. are high canal-banks bounding the horizon. Route goes nearly WSW. **El-Ifteh.** Three wells; good clear water at 6 ft.; plentiful if more wells sunk.
6½	Remains of the **Shatt en-Nīl** Canal. The Shatt en-Nīl is here a mere strip of earth about 24 paces wide, darker and softer than the surrounding soil and producing more vegetation in spring. The banks are indicated by bare yellow strips of earth 2–3 ft. high. Low mounds of soft earth strewn with potsherds occur along the Shatt en-Nīl

Miles from Bogheileh	
	at intervals of a few minutes, marking the site of ancient settlements.
	Follow course of Shatt en-Nīl.
6¾	The Tigris visible to NNE.
8¾	**Tel Rusiyyeh** ¾ m. to N.
11¾	Remains of larger canal-bed running SE. from the Shatt en-Nīl far into the distance.
13½	**Ishān Abu ʿAqs Māl en-Nejmi,** low mound.
14¾	Pass two high banks running parallel in a SSE. direction from Shatt en-Nīl for a distance of about 110 yds.
16½	Low mound with ruin, called **Nejmi.** Remains of brick tower. No water, but Khōr el-Baiyadh (bottom soft mud), 2–5 m. N. according to season, always contains water, sweet in rains, but should be chlorinated ; in dry season wells should be sunk near edge. Permanent Arab settlement.
	Continue along line of canal.
19½	**Uhaimir en-Nejmi,** mound. Just beyond this point a large canal-bed with high banks joins the Shatt en-Nīl from the N.
20¼	Large *khōr*, called **Umm es-Sumeikh** or **Dhabti,** lies to N. of the route and extends to within a short distance of Nīliyeh. Some cultivation along its edge in 1908.
21¾	Large canal-bed branches off to SE., leading to the high *tel* of Abu Jadu (3½–4 m. away).
22	Some cultivation to r. (1908).
22¼	Arab camp to r. (1908). Another camp lay a short distance to W.
24	In 1908 cultivation to r. ceased.
26	Arab camp to l. (1908).
27	Large canal-bed takes off to SE.
	In 1908 cultivation to r. of road, along the edge of the *khōr*, began again.
28½	Cultivation ceases.
29½	SW. corner of *khōr* lies to N. of route.
30¾	**Nahr Abu Bogheileh** (old canal-bed) takes off to SSE.
32½	**Nahr Ghafah** (large canal-bed) takes off to S. by E.
33	Ruin area of **Nīliyeh** lies on both sides of Nīl Canal for about ½ m. Remains of brick walls. In the E. part of this area there are the remains of a brick bridge which crossed the canal. Good water from wells ; further supply at 8–12 ft. by digging.

Miles from Boghei-leh	
	Two routes in addition to, and S. of, that below, run to Hilla, both passable for all arms: (1) direct; hard surface, no water; (2) slightly S. of W. to **Hamzeh** (m. 45; at least 7 wells, others reported); thence slightly N. of W.
33½	Beyond Nīliyeh, the bed of the Shatt en-Nīl is 60 paces wide. Canal-beds taking off from the Shatt en-Nīl become more numerous.
36¾	In 1908 an area of shifting sand-dunes 10–16 ft. high was entered here. This belt of dunes was 4–5 m. broad from E. to W.: its length is uncertain. The belt stretches NE. to SW., and the sand appears to be moving in a NW. or W. direction.
40	Large canal with very high banks takes off to NNE.
41	Large canal takes off to S. To N. a high canal-bank (20–26 ft.) approaches the Shatt en-Nīl from the ENE.
41½	High canal-bank just mentioned joins Shatt en-Nīl.
42	**Abu Hatab** shrine: in 1908 the high sand-dunes to S. of the shrine threatened to cover the building.
43½	Shatt en-Nīl makes a détour to N. Track continues W.
44¼	Cross bed of very large canal with a smaller canal parallel to it on its W. side.
44½	Cross small canal-bed.
45½	Cross small canal-bed. Sand-dunes to S. (1908).
45¾	Cross canal-bed.
46¾	Cross small dry canal, on the farther side of which is a tomb called **Umm el-Aulad.**
	Track turns NW.
47	Track rejoins course of Shatt en-Nīl, which it follows W.
47½	**El-Azibeh** tomb on r.
48½	Ruin called **Abu Sudair** on r.
49½	Canal-bed with very high banks takes off to SSE.
50½	Canal-beds take off to r. and l.
50¾	Here a large canal-bed takes off to ESE., and another, a short distance farther on, to SSE.
52	Very large canal-bed with high banks takes off to SE.
	To NNW. is seen a large mound called El-Uhaimir (1½–2 m. distant).
53¼	Very large canal-bed takes off SSE. Another dry canal running S. by E. takes off a short distance beyond.
54¼	Track leaves bed of Shatt en-Nīl and turns SSW.
54½	Cross two very large canal-beds.

Miles from Bogheileh	
55½	**Shākhet en-Nīl** village (Āl Bū Nāji Arabs), with cultivation round it.
56½	Pass another village, to NW. of Shākhet en-Nīl. Track now runs W. by S. to Hilla.
56¾	End of cultivation (1908).
57	Cross old canal-bed.
57¼	Cross old canal-bed.
57¾	Cross modern canal.
58	Cross old canal.
58½	Cross old canal.
59	Cross large old canal, which contained some water in Feb. 1908. Village ½ m. to N.
59¾	Cultivation begins.
61	Outskirts of **Hilla.**
61½	**Hilla,** boat-bridge.

ROUTE 20 b

BOGHEILEH—KHAIGAN ES-SAGHIR (72 M.)

This track is said to be much used by caravans, and probably practicable for troops as far as 'Afej. Beyond that point it runs over hard flat desert, and is always dry and fit for motors, as ther are no bridges or nullahs. Native information, 1916.

Miles from Bogheileh	
0	**Bogheileh.** Route runs SW. to
17	**Ez-Zahra,** where there are said to be 20 wells of excellent water. Thence (S. by W.?) to
32?	**El-Jaheish,** on a creek of the same name. Thence S. to
38	**'Afej** (see p. 171). 150 shops: supplies obtainable. Excellent grazing. Track keeps N. of the Khōr 'Afej.
55	**Alwat Jandil.** There is ample camping ground here; grazing is excellent, and the water of the Khōr 'Afej is good to drink.
72	**Khaigan es-Saghir** (Kigan Ashu of Degree map, sheet 2 D), on the Hilla Branch of the Euphrates (Route IV C (ii), m. 111).

ROUTE 21 a

BAGHDAD—NEJEF (111 M.)

Via KERBELA

Authorities :—Lorimer, *Gazetteer of the Persian Gulf* (1908 ; Report of Nov. 1905) ; *Military Report on Region between Baghdad and Persian Gulf* (1911 ; Report of 1903).

General direction of route, SSW. This is not a metalled road, but is suitable for wheeled traffic in ordinary weather, and is the main carriage-road to Kerbela, Nejef, and (as far as m. 29) Hilla. Travellers used to take one carriage to Museyib, where they crossed the Euphrates by a bridge impassable for wheels in heavy rains, and another carriage thence to Kerbela and Nejef.

The whole country is stoneless, with brown soil, and the road, full of deep ruts, is in places a foot deep in dust or mud according to weather ; but when one track is too much worn another is taken.

The country from Baghdad to Museyib is, though cultivable, for the most part desert. There is cultivation here and there in the neighbourhood of Baghdad, and near Mahmūdiyeh (m. 21) and Iskanderiyeh (m. 33). There are permanent marshes between m. 10 and m. 15. From Museyib to Kerbela the road skirts the belt of cultivation along the Huseiniyeh Canal.

There is abundant water on the route from streams and canals, but no bushes except *shōk*, or thorny plants. Fodder is available at Mahmūdiyeh, Iskanderiyeh, and Museyib. There is fair camel grazing all along the route, and supplies are obtainable in limited quantities at Mahmūdiyeh, Iskanderiyeh, and Museyib.

Double T.L. to Hilla accompanies route to neighbourhood of Museyib.

For note on connexions between the N. part of this route and the Tigris below Baghdad see Appendix at end of route.

Miles from Baghdad	
0	**Baghdad.** Leave by south gate along embankment, pass railway station, and cross brick bridge with ramp leading up to it over the ruins of the old city wall and ditch. Water sometimes collects on either side of the bridge in pools 1½ ft. deep, and might be an obstacle to guns, but not to cavalry or infantry. From a short distance beyond this bridge to the Kharr bridge the road

Miles from Baghdad

runs along the top of an embankment which is revetted with brushwood, and pierced at intervals by brick culverts giving passage to flood-water that crosses the line of the road here in wet weather. The top of the embankment is about 15 ft. above the surrounding country, and is generally 24 ft. wide: where it leads on to the Kharr bridge it attains its maximum breadth of 45 ft.

3 **Kharr** bridge, an iron (trussed-girder) bridge over Kharr Canal (dry to the end of l.w. season). Toll-house and 12 other houses. The ends of the bridge, both of which are approached by ramps, are two stone abutments, 16 ft. broad and 54 ft. long, projecting from either bank. The central portion consists of a single iron girder 171 ft. long, carrying a metalled roadway 9 ft. wide with an iron footway 2 ft. wide upon either side of it. In April when the water in the Kharr stream is 10 ft. deep, the height of the roadway above the water is 12 ft. At the S. end of the bridge, on the E. side of the road, is a two-storied brick house, behind which are about 20 mud houses.

After crossing the Kharr bridge the road trends to the S., diverging from the bridge embankment, which continues westward for about 2 m. and ends in the desert.

5 The road, after striking a bend of the river, immediately leaves it. General direction S. by E.

8 Pass **Khān el-Kharābeh,** a ruined caravanserai E. of the road. Cultivation in neighbourhood.

10 Swamps begin and continue till m. 15. The country is reported to be sometimes dry, but apparently in some years (as in 1903) it may be half under water even in the dry season as far as can be seen on each side. In flood time this part of the country is described as one sea of water on which are numerous boats. Snipe and duck are found here in the season.

There are two water-channels (at m. 10 and m. 11) with large pools of water in them. These two channels are in flood-time navigable, and carriages cannot cross them.

The road itself is raised and is only very rarely under water. From here direction of the road is S.

15 Open country begins, lying too high for irrigation or inundation. Irrigable country begins again in the neighbourhood of Mahmūdiyeh. Ample water in wells.

Miles from Baghdad

17 **Khān Azādeh,** deserted caravanserai on the W. side of the road. (Another account places it at at m. 13.)

21 As Mahmūdiyeh is entered the canal of the same name from the Euphrates is crossed; the canal has been found to be here 27 ft. broad and 4 ft. deep in November: it flows for 8–9 months in the year; the bridge over it (in good repair in 1908) is 18 ft. wide, and has a small arch of 6 ft. span in the middle. A little higher up the canal is only 10 ft. broad. This canal is the property of the *Dā'irat es-Sanīyeh,* and irrigates fields of wheat, barley, and millet.

Mahmūdiyeh. About 4 hours from Baghdad by mule-carriage. Pop. (1908) 1,000. A growing village of about 150 houses (1908), including 11 khans and 12 shops; the centre of a cultivated area. The khans are mostly defensible, one of them being partly loopholed and provided with circular towers at the four corners. In the aggregate these khans would provide accommodation for about 1,000 men and the same number of animals. Water muddy but good.

Some of the Dilaim tribe camp in the neighbourhood in the cold weather. There are also a Sanīyeh *Ambār* or store-house, and a Sanīyeh primary school. The place formerly contained some *zaptiehs* and a few regulars.

Direction slightly W. of S.

For routes to the Tigris see Appendix at end of route.

26 **Khān el-Bīr,** deserted caravanserai on W. side of road.

29 In this neighbourhood the route to Hilla *via* Khān el-Hasweh diverges to l., going slightly E. of S. See *Route* 21 b.

33 **Iskanderiyeh,** 50 mud houses with a khan and several brick houses. The canal on which it is situated belongs to the *Dā'irat es-Sanīyeh.* Cultivation is being rapidly developed, especially to the E. of the village; there is also some grazing in the neighbourhood, and numerous flocks and herds may be seen in winter between Iskanderiyeh and Museyib. The school and mosque are the property of the *Dā'irat es-Sanīyeh,* which is represented by a local manager. The inhabitants are nearly all Shiah agriculturists. Route proceeds SSW.

Just beyond the village the **Nahr Iskanderiyeh,** a deep canal from the Euphrates, is crossed. It was spanned in 1914 by a brick bridge in a fair state of repair.

Miles from Baghdad

Between Iskanderiyeh and Museyib there is sometimes an extensive slough, known from the tract of country in which it is situated as Abu Lūqa.

The road strikes the l. bank of the Euphrates not far above Museyib town. About 50 yds. before reaching the river bank it crosses a high brick bridge (roadway 10 ft. wide) over a deep canal.

The approach to Museyib is along a broad embankment, carefully revetted for 600 yds., which contains the river at this point. The river tends continually to break through to the ancient bed of the Euphrates at this bend. Until extensive works are carried out, the town of Museyib must remain from this cause liable to destruction, and the Hindiyeh Barrage might be rendered at least temporarily useless. Museyib is entered through plantations.

41 **Museyib.** The Euphrates, which runs through the middle of Museyib, is crossed by a boat-bridge of 24 pontoons, a rickety and ill-maintained structure. Some of the boats are connected only by insecure gangways without hand-rails.

This bridge is reported (1914) to be dangerous for loaded animals, and impassable for wheels. Banks of river 20 ft. above water level, the upper 15 ft. of which are steep. River here 185 yds. wide, 8 to 10 yds. deep: current 2½ to 3½ m.p.h., at time of l.w.; 5 to 6 m.p.h. in high flood.

The road for vehicles from Museyib to Kerbela skirts the northern edge of the cultivation dependent on the Huseiniyeh Canal at a distance of 2 or 3 m. from the canal.

54 Pass the tomb of **Imām 'Aun.**

60 Cross Bāb Baghdad bridge over the Huseiniyeh Canal: passable for wheeled traffic (see pp. 254, 297 for other bridges).

61 **Kerbela.**

Miles from Baghdad	
41	From **Museyib** an alternative route for horsemen and foot-passengers follows more closely the N. bank of the Huseiniyeh. Network of canals on first 7 miles.
48	Road crosses a medium-sized distributary from the Huseiniyeh, empty and ruined. Immediately beyond this it runs over the **Wall** distributary by a brick bridge, 18 ft.

Miles from Baghdad	Miles from Baghdad	
		wide, with no hand-rail or parapet. The banks of the Wall are 45 ft. apart, 25 ft. high, and precipitous; the stream at the bottom flows 6 ft. wide and 3 ft. deep. A short distance beyond the Wall the road crosses the Hamīdiyeh distributary, which has banks 25 ft. apart and 16 ft. high, the flow of water being similar to that in the Wall. The bridge over the Hamīdiyeh is of brick, and carries a roadway 8 ft. wide.
	52	Cross another distributary known as the **Abu Suleiman,** narrower than the preceding ones, and spanned by a very narrow bridge of wood and earth.
		A square Arab fort with 30 grass huts outside stood about here in 1903.
	53	**Khān 'Ātiq,** old khān and forts, ruined. Half a mile to l. (1903) Sheikh Ibrāhīm's square fort, with 100 mud and grass huts outside, on l. bank of Huseiniyeh Canal; half a mile farther on, also on l. bank of canal, fort of his brother with 50 huts (1903). A quarter of a mile on the r. is **Kawaz Huseiniyeh,** a square fort with 50 Arab huts, and another quarter of a mile on **Qal'ah Sa'ud,** a square fort with 20 huts, also on r. (1903).
		For the next 5 m. the way lies along the r. bank of the Huseiniyeh, and a number of small canals are passed, the bridges over which are bad and unfit for wheels.
	58	The road then crosses to the l. bank of the Huseiniyeh by the Pul-i-Sufaid: roadway 20 ft. wide, in bad repair. For the last few miles the way lies through dense date plantations; and in the last 3 m., that is from Pul-i-Sufaid to Kerbela, there are continuous walled enclosures adjoining it on either side.
	61	**Kerbela.**

NOTE ON THE HUSEINIYEH BEYOND KERBELA. See also on the Huseiniyeh, pp. 174, 176, 395.

The Huseiniyeh Canal, 3 m. beyond the Pul-i-Sufaid, passes N. of Kerbela town, and divides, at a bridge NW. of the city, into two branches. One of these runs off in the direction of the tomb of Hurr, about 3½ m. NW. of the town. It is called the Rashdīyeh, and is much larger than the other. At its entrance it is 24 ft. wide, with banks 20 ft. high, and flows 12 ft. wide and 3 ft. deep in winter, being practically dry from June to November. After running NW. for some distance it turns SW. and approaches Razāzeh on its E. side. In this reach it has the land called Qurtah, inhabited by the Yasār tribe, upon its r. bank.

Razāzeh (about 12 m. from Kerbela) is a small estate with about 750 inhabitants, which in 1908 belonged by grant from the Vali to an Anazeh sheikh, who, with his cousin the Kaimmakam of the place, were tent-dwelling Bedouin. There was a mud granary in the place, formerly a fort. The value of the Government share (⅕) of the crops of Razāzeh is estimated at 500 *liralis* per annum.

Beyond Razāzeh the Rashdīyeh turns S. and soon ends in a marsh called Khōr Abu Dibs.

Miles from Baghdad

The other branch of the Huseiniyeh, the Hanāidiyeh, circles round Kerbela town, near which it is 20 ft. wide, with banks 25 ft. high, and is 4 ft. broad and 1 ft. deep in winter, but practically dry from June to November. It flows to the Khōr Huseiniyeh or Khōr es-Suleimāniyeh, as it is also called from the village of Suleimāniyeh —a large lake or open swamp, fed also by waste water from the Huseiniyeh, and from the Hindiyeh Branch of the Euphrates.

From Kerbela, after leaving the belt of gardens and date-groves, about 1 m. broad, that surrounds the town, the road goes SE. by S. over flat, featureless desert; to W. of the road the desert is of yellow sand and fine gravel; on the E. is ground which is under water at flood time, but on which at other times there is good cultivation and grazing.

65 About 2½ m. beyond the belt of gardens and date-groves, water-holes (brackish water) enough for 1,000 camels a day.

69 Water-holes, pools, and swamps, with an unlimited quantity of water on l.

73 **Khān Noqeileh.** There is here a large caravanserai 100 yds. square with walls 19 ft. high on the outside; it would accommodate 400 horses and 300 men. There are the usual open cubicles round the courtyard, and the usual back-galleries of stables. Water from a well ¼ m. distant. There are two other small khans at this place, each of which would hold 50 horses and 20 men. No supplies are obtainable except a little chopped straw.

74 Large inundations on l.

76 **Abu Ru'yeh** Canal, 50 yds. wide, 8 ft. deep, current ½ m.p.h., runs from here more or less parallel with road about 1 m. away. The Nahr Abu Ru'yeh is a natural channel filled with water up to m. 87, where it is dammed up for irrigation; it is a difficult obstacle, as the bottom is soft mud. After m. 87 there was no water in the Abu Ru'yeh in autumn, 1903.

(According to the *Persian Gulf Gazetteer*, 1908, about midway between Noqeileh and Khān Hamad (m. 87 below), a stream 50 yds. wide and 4 ft. deep, said to be a branch of the Shatt el-Hindiyeh, is twice struck on the l. of the road, and this, it is said, appears to be part of the Si'adeh mentioned in *Route* 21 b, m. 90½. Si'adeh may be another name for a part of the Abu Ru'yeh.)

77 Arab village 1 m. to l. (1903).

Miles from Baghdad	
80	Arab village 1½ m. l. (1903).
81	**Kubuzo,** large Arab village, 1½ m. l. of road.
86	**Ajdeh,** Arab village, 1½ m. l. of road.
	General direction of route SSE. Country on l. marshy, on r. desert.
87	**Khān Hamad,** large walled enclosure, 250 yds. long by 100yds. wide, with five caravanserais inside it opening one into the other. In these are the usual arched cubicles with stables behind them. The outer walls of the enclosure are 18 ft. high; and, as there are parapets above the roofs of the stables, the whole could be easily defended against rifle fire. There is accommodation for 500 horses and 1,000 men. Besides the large enclosure there are 2 or 3 small khans and about 50 ordinary mud houses. Water is from wells, and is said to be always sufficient, but food and fodder are scanty. To the S. of this place is sandy desert, and to the N. and E. of it are about 400 date-trees.
	The direction of the route continues SSE.; the road is sandy for some distance after leaving Khān Hamad. It runs between the desert on the r. and low-lying lands connected with the Hindiyeh on the l. These last are liable to inundation, but have good grazing during the cold season.
90½	Lagoons and swamps 1 m. to l., extending parallel to the road for some miles.
91½	Fort and mud village of Beni Hasan Arabs, 1½ m. to l.
95	Road crosses **Abu Ru'yeh** Canal; no bridge and no water (see m. 76). The going soon becomes better.
99	**Khān Mosallā** (also called **Khān Mirza**), walled enclosure, containing two caravanserais which lead one into the other. Outside are two small khans and a few coffee-shops, and about 200 yds. to the E. are some 30 Arab huts. The place would hold 800 horses and 600 men; but there are practically no supplies. Water is obtained from wells and from a canal which comes from the Shatt el-Hindiyeh.
	The route goes SSE., and lies over fine sand which makes the going heavy.
111	**Nejef.**

Appendix

The following connexions between the N. part of the above route and the Tigris below Baghdad are reported (native information, 1916).

(i) *Mahmūdiyeh* (m. 21 above) *to the Tigris opposite Salmān Pāk*

This route, 13 m. in length, follows the Mahmūdiyeh Canal until due S. of Khiamiyet, where it turns NE. Some small nullahs are crossed, easy to fill or bridge. Track is well defined, level, and firm in dry weather, and passable for all arms and transport; impassable after heavy rain. Wheat, barley, and millet are principally cultivated hereabouts. Wood, mostly tamarisk and camel-thorn, is plentiful. Water at all seasons from canals or wells sunk in their beds. Ctesiphon arch is in view all the way.

(ii) *Mahmūdiyeh* (m. 21 above) *to Hurīyeh*

This route, 12 m. in length, follows the S. side of the Mahmūdiyeh Canal, and leads direct ESE. to the Hurīyeh tract on the Tigris (see *Route* III C, m. 166¼). Track passable for wheels in dry season; impassable in flood season. There are two sweet wells at Jebur forts, 4 m. SSE. of Mahmūdiyeh, and 3 m. S. of the route.

(iii) *Khān el-Bīr* (m. 26 above) *to Salmān Pāk*

A direct route, 14 m. in length. It is distinct for about half this distance, after which it is lost in the desert, but Ctesiphon arch becomes visible as a mark. At first slightly undulating and broken, it afterwards becomes level and firm, and is possible for all arms and transport in dry weather; impassable after rain. Water from irrigation cuts when river is high; good water can be had at any time by digging to a maximum depth of about 12 ft. Camel-thorn is plentiful. A few donkeys and pack-horses are available.

(iv) *Museyib* (m. 41 above) *to Hurīyeh*

This route, 20 m. in length, crosses a canal ¼ m. out of Museyib, by a good bridge. The canal is 15 ft. wide, and always contains water, with 2 ft. of mud at bottom. For heavy transport or guns a new bridge would be necessary. At Khān el-Hasweh, 7½ m., track crosses the road to Hilla and Nejef (see *Route* 21 b, m. 34). The country throughout is flat, and the route suitable for all arms. No water except at Khān Hasweh; grazing very poor.

ROUTE 21 b

BAGHDAD—NEJEF (97½ M.)

Via HILLA

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908 (Report of December 1905); *Military Report on Region between Baghdad and Persian Gulf*, 1911 (Report of 1903); and other information.

This is an unmade road, but is fit for driving as far as Hilla. The route follows the Kerbela road to m. 29. From Hilla to Nejef there was, in 1903, a path for pack animals only. As far as Hilla the greater part of the route passes through country which, although cultivable, is for the most part desert, with scanty grazing. There are a few scattered permanent villages surrounded by areas cultivated at flood time, when there is water carried in those canals still in good order. From the ruins of Babylon (m. 56) to Hilla the route runs through cultivation and vast date plantations. The construction of the Hindiyeh Barrage may have already improved the character of the country for some miles to the N. of Babylon. As far as Hilla water is plentiful throughout, and there is good camel grazing. Firewood is abundant, but practically no other supplies are obtainable. A double line of telegraph runs from Baghdad to Hilla.

S. of Hilla the road, after passing through an area impoverished, till recently at least, by the drying up of the Hilla Branch of the Euphrates, runs through country which in 1903 was inundated for a great part of the year, the area and depth of the inundations varying with each annual flood. For the last 7 miles the route runs over sand and gravel. These conditions may have been modified by the Hindiyeh Barrage. Water on this part of the route was, in 1903, described as abundant; fuel and fodder were not scarce, and it was thought that large quantities of live stock and grain could always be collected.

Miles from **Baghdad**	
0	The route leaves **Baghdad** by the Baghdad—Kerbela road (see *Route* 21 a).
29	The route diverges gradually to the l. from the Baghdad—Kerbela—Nejef route 2–4 m. S. of **Khān el-Bīr**, and begins to run slightly E. of S.

Miles from Baghdad

34 **Khān el-Hasweh.** Here the route is 2 m. SE. of Iskanderiyeh village on the Baghdad—Kerbela road (see *Route* 21 a, m. 33). Khān el-Hasweh stands somewhat high on the top of a slight eminence in an otherwise featureless country. The khan is a one-storied building with a courtyard surrounded by 38 arched recesses used as lodging-places. Behind these recesses are rows of vaulted stables. Parapet wall, about 4 ft. high, runs all round the roof. The courtyard would accommodate 100 men, and the stables 150 animals. Attached to the khan is a village of some 60 domed brick dwellings and two coffee-shops. A few animals are owned in the village, but supplies, except firewood, are not to be obtained. The inhabitants are nearly all Sunnis. The soil in the neighbourhood is a gritty mixture of pebbles and sandy clay. The cultivation, of which there is a good deal in the direction of Iskanderiyeh, all belongs to the *Dā'irat es-Sanīyeh.* There was a small Turkish *zaptieh* post here.

39 Grass huts on r., water from distant wells near Iskanderiyeh.

40¾ **Museyib** Canal marked on map about here.

41¾ Another canal indicated, and some distance farther on (at or before m. 44) a third canal. They were dry in the autumn of 1903. These two canals are spanned by brick bridges, and the latter is apparently the **Nāsirīyeh** Canal from the Euphrates.

43 **Khān Nāsirīyeh,** a deserted khan on the eastern side of the road.

48½ About here a small water-channel is crossed.

50 **Khān Mahāwīl,** khan with walls 18 ft. high on outside, very similar to that at Khān el-Hasweh but in worse repair. Attached to the khan is a village of about 600 inhabitants. It is surrounded by mud walls which are 10 ft. high and topped with thorns. The place is the head-quarters of the Mahāwīl *Nahiye* of the Hilla *Kaza,* and consequently the seat of a Mudir. There is one coffee-shop and a small *zaptieh* station. A few animals are available and there is plenty of fuel; but grain, notwithstanding the existence of a considerable cultivated area, is generally scarce, being exported. On the S. side of the village flows the **Mahāwīl** Canal from the Euphrates, with a stream in April about 20 ft. wide by 12 ft. deep. About 50 date-palms belonging to village on the

Miles from Baghdad	
	bank of the canal. The Mahāwīl Canal has water since the Hindiyeh Barrage came into operation. It is crossed by a high brick bridge in bad repair which carries a roadway 10 ft. wide and rises 12 ft. above the level of the water.
	The road traverses a plain strewn with débris, which possibly marks the site of the city of Hashimiyeh, the capital, before Baghdad, of the Abbasid caliphs.
54	Brick bridge over the **Khātūniyeh** Canal, which was formerly dry but now probably has water since construction of Hindiyeh Barrage.
56	Brick bridge over **Nīl** Canal. This canal was cleared out in 1914 and has now water from the Hindiyeh Barrage.
	For the next 3 miles the way passes amid the ruin-mounds of **Babylon.** See pp. 173, 175.
	Mud-walled village, **Kuweirish,** which had in 1908 about 300 inhabitants employed mostly on German archaeological excavations.
60	Brick bridge over **Wardiyeh** Canal, which, like the Nīl Canal, was cleared out in 1914 and is now supplied with water.
	Open grazing, cultivation, and date plantations up to suburbs of Hilla.
62	**Hilla,** on both banks of the Hilla Branch of the Euphrates. The two parts of the town are connected by a bridge of 15 boats.
63	Date-palms of Hilla end. Owing to drying up of Hilla Branch of Euphrates the grazing a few years ago was poor and the country semi-desert. Large shallow *khōr* 2–3 m. to W. of the road, formed by the Hindiyeh Branch of the Euphrates: this *khōr* extends for about 10 m.
67½	**Birs Nimrūd** on hill by the *khōr* 2 m. to r. See p. 163.
69	Arab square fort and grass hut village 1 m. to l.
71	Brick bridge over canal, dry in autumn of 1903.
75	Road runs through marshy country as far as Kifl. Not much cultivation, but fine grazing (1903).
77	Large inundations and marsh on r. (autumn 1903).
78	Large inundations and marsh on r. (autumn 1903).
78½	Brick bridge over canal 18 ft. wide, 3 ft. deep in autumn of 1903.
78¾	Brick bridge over canal 15 ft. wide, 2 ft. deep in autumn of 1903.

Miles from Baghdad	
79	**Kifl.** Surrounded by water in dry season; large sailing-boats come right up to village.
	On leaving Kifl road goes through marshy country, with some cultivation and fine grazing. Frequent grass huts and square forts of Beni Ḥasan Arabs on the r. to within about 12 m. of Nejef.
79¼	Cross canal, 22 ft. wide, 4 ft. deep (autumn, 1903), by dam.
79½	Cross **Hindiyeh** Channel by ferry-boat. Channel (autumn, 1903) 240 yds. wide, 3–8 ft. deep; current 2 m p.h. Road goes along r. bank of Hindiyeh Channel about 9–10 m. through fertile cultivated land and pasture.
84½	In this neighbourhood lies the village of **'Amrān,** which the road passes about ½ m. to E.
89	In this neighbourhood the road turns W. for ¼ m., leaving the bank of the Hindiyeh.
89¼	**Shatt el-Mulla** is crossed, here running 50 yds. wide and 2 ft. deep (autumn, 1903). The canal here has easy sloping banks. Road again trends southerly. Marsh to l. apparently passed.
90½	The **Si'adeh (Abu Ru'yeh ?)** Canal, empty and broken, is crossed without difficulty.
	The country becomes desert.
97½	**Nejef.**

NOTE.—When the route is followed from Nejef to Kifl, the minaret of Kifl comes into sight soon after leaving Nejef, and Khān Mosallā on the Kerbela—Nejef road becomes visible to westwards soon after the r. bank of the Hindiyeh is reached.

ROUTE 22

BAGHDAD—FELLŪJEH (43½ M.)

Authorities:—Field Notes on Mesopotamia, 1915; *Military Report on Arabia,* 1904; Bury, *Report on Baghdad—Aleppo Road,* 1907; and other sources of information.

This is a good though unmetalled driving-road, presenting no difficulties in dry weather, though the sand and sandy clay is in places rather heavy. In wet weather the going is probably heavy throughout. In spring the 10 or 11 miles between Baghdad and

Aqarqūf is sometimes badly flooded (see under m. 11½). The country is mostly desert, with scattered patches of cultivation (see under m. 27½). Nomads with flocks of sheep are occasionally seen on the route, but no appreciable amount of supplies can be expected. Water is apparently not plentiful. Grazing mostly camel-thorn and tamarisk, though some grass may be found in places in spring. Fuel scanty. The miles given below are taken from an account of 1905. Another estimate gives 21 m. to Abu Ghoreib and 39 m. to Fellūjeh, and a third gives 40 m. to Fellūjeh. There appear to be several possible tracks; see e.g. m. 1½ m. 11½.

Miles from Baghdad	
0	**Baghdad.** The road leads through the r.-bank suburb of Baghdad, past gardens and broken mud-walls. According to map of 1916, road in dry season (described below) diverges from *Route* 21 a, just beyond brick bridge (p. 345); in wet season caravans go along the top of the *sudd* to Kharr bridge (pp. 345, 346), and leave *Route* 21 a immediately beyond it. This road apparently leads also to ʿAqarqūf.
1½	Monument called Tomb of Zobeideh. It forms a notable landmark about ½ m. to the N.
3	*Zaptieh* post, with five police (November 1905). The road passes some brick-kilns lying close to the W. About 400 yds. off, in the same direction, is a dyke 12 ft. high, some clay huts, and graves.
4½	The route leads W. by N. through flat and open country, largely covered with camel-thorn. 220 yds. farther on the road passes a telegraph wire 300 yds. to the N.
5½	**Saqlāwiyeh** Canal, here about 50 yds. wide, touches the road (water in November 1905 40 ft. wide, 2 ft. deep).
6½	The road from Kerbela to Kazimain crosses route.
7½	Large dry canal goes off to NW.
10	The route lies over flat, open, featureless country covered with camel-thorn.
11½	Nullah, easy to cross for all arms. 220 yds. farther on is a deep brick well with good water 35 ft. below the ground-level.
	ʿAqarqūf ruins about 2 m. to the N. In April 1896 the journey up to near this point had to be made in a boat, the marshes formed by the overflow of the Saqlāwiyeh Canal extending right up to the walls of Baghdad.

Miles from Baghdad	
	From 'Aqarqūf an alternative route to Fellūjeh passes through Abaddi, a police post about 3 m. N. of Abu Ghoreib, mentioned at m. 27½.
17½	Up to this point the soil has generally been a sandy clay, which now gives way to sand, while tamarisk scrub replaces camel-thorn.
18	(In a Report of Feb. 1908 New Samīyeh police post and khan are placed about here: see under m. 23½ below.)
20½	The road crosses a large ruined canal. The route now lies over a barren dusty plain.
23½	The road crosses several small canals with good water. **Nuqtah es-Samīyeh.** (In Feb. 1908 'Old Samīyeh fort, not used now' was reported about here.)
27½	**Abu Ghoreib**: customs station. There are two large walled khans here, and two smaller ones, giving accommodation for 200 horses and 400 men. Large quantities of grain are stored here. The place is situated on high, dry, gravelly ground. There is cultivation all round, and the land is marshy in places. The Arabs in the neighbourhood are Zoba'. From Abu Ghoreib the road runs WNW.
30½	The route runs through undulating country, over sand and fine shingle, with cultivation on the S., desert on the N.
37	The road passes over shingle.
43½	**Fellūjeh.** 6 hrs. from Nuqtah es-Samīyeh.

THE ARABIAN DESERT

ROUTES 23 a, b

ZOBEIR—UMM QASR

General Note

Of the two routes from Zobeir to Umm Qasr described below, *Route* 23 b is longer and heavier going, but is much used by the Arabs in spring owing to its good camel-grazing. Neither it nor the direct route (23 a) is liable to inundation.

ROUTE 23 a

ZOBEIR—UMM QASR (29 M.)

Direct Route

Authorities :—Force 'D' Route Report, Serial no. 5 (May, 1916); Lorimer, *Gazetteer of Persian Gulf*, 1908.

The road is an undefined track across the desert. At all seasons it is passable by all arms except heavy artillery and heavy motor transport, but it becomes heavy after much rain. Light motor lorries could use it in dry weather. It is not liable to inundation.

Water is plentiful. There are wells or water-holes, with good water, every few miles along the track. At these places water is generally within 15 ft. of the surface, and could be got in unlimited quantities by sinking fresh wells. As a general rule, in the vicinity of Zobeir water near the surface is sweet, whereas that in deep wells is brackish.

Desert bushes provide a little camel-grazing and fuel. No supplies nor forage can be obtained. Unlimited space is available for camping.

Miles from Zobeir

0 **Zobeir.** The general direction to Umm Qasr is SSE. The route runs over a plain with very slight undulations.

Between Zobeir and m. 4 is the **Dirhamīyeh** district, where there is scattered cultivation of lucerne, maize, rice, and dates. The cultivated plots are surrounded by tamarisk. Large numbers of buffaloes, cows, and sheep are kept.

1½ **Dirhamīyeh** water-holes. Sweet water for one brigade in standing camp. Zobeir gets its drinking-water from these holes. A British brigade was encamped here for some weeks in the flood season of 1916.

At this point a route from **Junction Island** (14½ m.) joins the present route (see Force 'D' Route Report, Serial no. 5; 1916). For landing and anchorage near Junction Island see *Route* I C. There is no water nearer to Junction Island than the Umm Khayal wells (see below, m. 13), said to be some 5½ m. to NW. (WNW.?) From Junction Island general direction is NW. Road leaves the Khōr Zobin ½ m. N. of the island, and runs along a slight hog-back ridge, but parts of it are submerged in the flood season In the dry season it is good for all arms except heavy artillery or heavy motor traffic. No water till Dirhamīyeh.

4 Route runs over open gravelly plain with a very slight descent to Rāfidhīyeh. Fair canal grazing and a few scattered houses with irrigated gardens.

5 **Agelah** water-holes. Sweet water for one brigade in standing camp.

6 **Rāfidhīyeh** wells. There are five wells, of which three contain undrinkable water, and two drinkable but slightly brackish water. Water for one brigade in standing camp.

At Rāfidhīyeh is the country residence of the Naqīb of Basra, a quadrangular enclosure with bastions at N. and S. angles. A few trees.

Here the route from Zobeir to Umm Qasr by Safwān diverges to S. (See *Route* 23 b.)

The direct route to Umm Qasr continues SSE. over open desert to

13 **Umm Khayal** wells. Water for one brigade, May 1916. The supply here, and at the other places mentioned below as far as Umm Qasr wells (inclusive), could be greatly increased by sinking fresh wells.

From here the route continues SSE. over open desert. Going is good.

Miles from Zobeir	
15	**Rāfidhīyeh** wells. Water for one battalion, May 1916.
18	**Riathib** wells. Water for one battalion, May 1916.
20	**Hadameh** wells. Water for one brigade, May 1916.
23	**Mafram** wells. Water for one battalion, May 1916.
28?	**Umm Qasr** wells (?). Water for one battalion, May 1916. (But see below under m. 29.)
29	**Umm Qasr** fort. This is a mud fort in ruins, measuring about 120 ft. each way. It stands about 1 m. from the W. bank of the Khōr Zobeir, the water of which is undrinkable. The Report here followed states that 300 yds. N. of the fort there is a well 12 ft. deep giving a plentiful supply of good water, and that 'there are no other wells in the vicinity'. It is uncertain whether by 'Umm Qasr wells', given in the same Report as 1 m. from the fort, this single well is meant.
	The ground in the immediate neighbourhood of the fort is firm and gravelly.
	For an account of the best landing-place on the Khōr Zobeir near the fort, see p. 61.

ROUTE 23 b

ZOBEIR—UMM QASR (34 M.)

Via Safwān

Authorities:—Force 'D' Route Report, Serial no. 5 (May 1916); Lorimer, *Gazetteer of Persian Gulf*, 1908.

This track is passable at all seasons by all arms except heavy artillery and heavy motor transport, but there are many strips of fine heavy sand which would greatly impede wheeled transport. It is not liable to inundation.

Water-supply as on the direct route (see *Route* 23 a, introduction). Good camel and sheep grazing in spring. Some scrub for fuel. No supplies nor forage. Unlimited space for camping.

Miles from Zobeir	
0	**Zobeir.** General direction to m. 10 is S. Follow *Route* 23 a above to
6	**Rāfidhīyeh.** For water, &c. see *Route* 23 a, which is here left.
10	**Mā el-Hadd.** Water from wells for one brigade.

Miles from Zobeir	
	General direction to Safwān, S. The track is sandy but fairly good.
20	**Safwān,** a village situated on slightly rising ground just within the Turkish frontier, and consisting of two or three small enclosures containing a few houses and of a date-grove, surrounded by a wall, belonging to the Naqīb of Basra. There is a ruined fort 300 yds. E. of the date-grove.
	There are a large number of wells close to the date-grove, and there is water for one brigade. Just N. of Jebel Sanām (see below) water is to be found, which is brackish but drinkable for animals. Good camel and sheep grazing. Plenty of scrub for fuel.
	Jebel Sanām is an isolated hill 4–5 m. W. of Safwān: it affords a good point for observation and signalling.
	From Safwān the general direction to Umm Qasr is ESE. Road is sandy and heavy.
26	**Riz el-Banat** wells.
34	**Umm Qasr.**

ROUTE 23 c

ZOBEIR—KOWEIT (100 M.)

Via MUTLA'AH PASS

Authorities:—Lorimer, *Gazetteer of the Persian Gulf*, 1908; *Field Notes on Mesopotamia*, 1915.

An unmade track, ordinarily practicable for wheeled transport all the way to Koweit, though considerable spadework would be necessary at the Mutla'ah Pass, 3 m. N. of Jahrah, as well as the spreading of brushwood or similar material, to render passable the soft sand crossed just after issuing from the pass.

Water is limited at Qa'shanīyeh; and there is no water at all at any halting-place between Qa'shanīyeh and Jahrah, a distance of about 47 m. Water should therefore be stored at two intermediate halting-places, which are optional. At Koweit water is limited, and only passably good. Fuel is scarce throughout, except at Jahrah. There is fair camel-grazing throughout, except perhaps in the desert N. of Jahrah. Some lucerne is generally to be had in the vicinity of Jahrah and at Safwān. The supplies *en route* are very limited. Certain commodities are obtainable at Koweit.

Miles from Zobeir	
0	**Zobeir.** Follow *Route* 23 b as far as
20	**Safwān.**
	Route goes between SE. and SSE. over slightly undulating stony desert. It is now within the Koweit principality.
30	Alt. 170 ft.
32	**Qa'shanīyeh** wells, six in number, and containing good water at 18 ft. About 6 m. to the ESE. are the hill and the sweet-water wells of Umm en-Niqqah. See *Route* 23 d, m. 6.
34	Route begins to traverse the broad, shallow depression of **Sil Jirfān.**
37	Route ascends from Sil Jirfān.
	The whole region up to about 69 m. is known as the **Bātih.** It is undulating, waterless desert, lying somewhat high (alt. 130–220 ft.).
	The route here crosses numerous slight ridges, and passes through the locality called the **Bātih el-'Aud.**
39½	**El-Hammār** (alt. 210 ft.).
48	**El-Abateh** ridge (alt. 220 ft.).
	The route now descends to cross the low-lying tract called **Raudhatein,** falling away to the W.
52	Alt. 130 ft.
55	Pass two mounds: the one to left on shoulder of ridge is known as **'Azīyeh.**
	Track ascends.
59	Cross over ridge of **El-Yāh** between mound on r. known as **El-Daiya'** (270 ft.) and another summit to l. (280 ft.); descend to the **Zaqlah** depression.
69	Alt. 130 ft. The track now runs to the r. side of the depression, and reaches the
77	**Mutla'ah** Pass (alt. 180 ft.), gap in a belt of low hills (320–410 ft.) known as the **Jāl ez-Zōr.** The Mutla'ah Pass is named from a hill 320 ft. high on the E. side of it. The hill on the W. side is called Muteili'ah. About 10 m. W. of the pass are the Khashm el-'Ifri hills, a landmark on the road at the pass and to the S. of it. See introductory remarks above on the road here.
	Route descends to Jahrah plain.
80	**Jahrah,** fortified khan, small village, gardens and houses of Sheikh of Koweit; permanent population about 500; but in the hot weather there are sometimes six or seven times that number: this floating population is generally of the

Miles from Zobeir

Muteir tribe. Several good wells of drinking-water, and several of salt water. Fuel is very scarce, as it has to be brought in 15 m. Supplies include limited quantities of certain vegetables and lucerne, also fowls, eggs, and milk. Jahrah, which enjoys a dry and healthy climate, is near the western extremity of the bay on which Koweit is situated. It is a little more than a mile inland from high-water mark. It is well built of sun-dried bricks, and has a circumference of about 1½ m. There are outlying patches of cultivation round the walls, and many enclosures containing wheat, date-trees, lucerne, tamarisk, &c., surrounded by mud walls from 2 to 3 ft. thick and 8 to 10 ft. high. Most of these contain their own wells, the water of which is, as a rule, only good for irrigation. There is an old fort in disrepair on the NW. frontage of the village, as well as a new one, built by the present sheikh (1915), clear of the SE. end of the village. Jahrah stands in an open plain of sand sprinkled with camel-grazing; the desert rises gradually from the village towards the W. and SW. 1 m. to the N. of the village is a plain called Moreitibeh, on which Bedouin camp in the hot weather; it has many wells containing water at a depth of 12 ft.

General direction of route to Koweit about E., making a détour to S. round the curve of a bay. The ground is fairly firm. Route crosses slight, almost imperceptible undulations running at right angles to the road. Wells called Gartāmeh, Qulbān Yāsīn, and Megkarreh, lie on the N., and others called Rijām el-Hōseh, Soleibīyeh, and Jedūdīyeh on the S. of the route.

A route goes from Jahrah to Koweit, following the line of these southern wells.

90 Road now begins to skirt the S. shore of Koweit Bay.

95 Going from here to Koweit soft and heavy owing to sand.

100 **Koweit.**

ROUTE 23 d

UMM QASR—KOWEIT (97 M.)

Authority:—Lorimer, *Gazetteer of the Persian Gulf*, 1908.

It is not clear whether this route would be passable for vehicles. The going is generally over undulating stony ground, with occasional stretches of sand or mud. Water appears to be plentiful.

Miles from Umm Qasr	
0	**Umm Qasr.** From Umm Qasr the route leads to Koweit by Qasr es-Sabīyeh and the coast of the bay of Koweit. The width of the Khōr es-Sabīyeh, the western side of which is skirted, varies from ½ m. at some places to 1 m. at its mouth. Depths of 1–5 fathoms are found, but navigation is very difficult at its mouth owing to numerous patches and rocks almost dry at low tide. The banks are swampy.
4½	Route crosses low ridge. Umm Qasr visible from this point.
6	**Baheith** well: the water is bitter. Umm en-Niqqah wells lie 4 m. to W. (See *Route* 23 c, m. 32).
8½	**Bahreh** well. Water good and plentiful.
11	**Sābarīyeh.** Between this point and 'Arfajīyeh (m. 26) numerous wells are reported, with good and plentiful water. The country is flat and stony.
13	**Sobeir** wells.
16½	**Zamūmi** wells.
18	**Karrādi** well.
19	**Haswān** wells.
20	**Turfāwai** wells, of drinkable but somewhat bitter water.
23	**Muttawwa'iyeh,** five wells, of which only two hold water.
26	**'Arfajīyeh.** A place with a ruined mud enclosure and numerous wells of fairly good water. There are no trees, but some signs of former cultivation exist. Low hill visible about 8 m. WSW. is Qādhīyeh. From this point to Qasr es-Sabīyeh the route runs over slightly undulating stony country.
29	**Akhfarūnbith,** well in a dry water-course.

Miles from Umm Qasr	
30½	**Hoqeijeh,** eight or nine wells of slightly brackish water, with a few tamarisk trees, a ruinous mud enclosure, and traces of cultivation.
31½	**Shamīmeh** wells are passed.
36½	**Qasr es-Sabīyeh,** a fortified mud enclosure about 3 m. from the top of the promontory dividing the Khōr es-Sabīyeh from Koweit Bay. The fort is 100 × 80 yds. At high tide the sea approaches it closely. The bank is steeply shelving. Landing is difficult, on account of mud, at all tides. Water-supply comes from wells outside the fort and is brackish. There is a date plantation here, and on the landward side the place is surrounded by tamarisks.
	From Qasr es-Sabīyeh the route at first runs over undulating stony ground.
45½	**Mogheireh,** fresh wells.
	Beyond Mogheireh the route passes through some sand-hills.
47½	The route now for about 7 m. runs across a mud-flat which is not submerged at high tide.
49½	**Mishāsh el-'Ajman** wells.
	Bahreh wells lie about 1 m. NW. of Mishāsh el-'Ajman: water only slightly brackish.
54½	Track enters loose sand extending to Mudeireh.
57½	**Mudeireh.** One well of fresh water liable to become silted up in rainy weather.
	The route from Mudeireh to Jahrah enters stony barren ground between the Zor hills and the muddy shore of the bay.
59½	**Mahraqah** well, of drinkable but brackish water.
61½	**Ghadha'i,** brackish wells.
65½	**Kuweikih.** 20 wells of brackish water at 9 ft. Matair Arabs camp here in summer.
69½	**Mo'taradhah** well.
71	**Umm el-Khuweiseh.** A well, now silted up, with a few wild date-trees.
77	**Jahrah.** For road to Koweit see *Route* 23 c, m. 80–m. 100.
97	**Koweit.**

ROUTES 24 a and b

NOTE ON THE ROUTES LEADING FROM THE LOWER EUPHRATES VALLEY (NEJEF—BASRA) INTO ARABIA

(A) Routes from the Euphrates Valley to Hā'il and Boreidah

Desert routes to **Hā'il** and **Boreidah** start from **Basra, Sūq esh-Shuyūkh, Samāweh,** and **Nejef.** They are described in detail in the *Handbook of Arabia* (in preparation), from which the following notes are taken. They are possible for the passage of regular armed forces of moderate size, if special arrangements have been made for transport and supply on the way. Thus over the route *Darb es-Selmān* (from Samāweh or Nejef to Hā'il) Turkish columns have twice marched in recent years (1903 and 1905). On the first occasion 2,000 men, on the second six battalions, got through to Hā'il and beyond. But it should be observed that on each occasion they had been invited by the Emir of Hā'il, who provided guidance and transport. Without these facilities (still more, had the Emir actively opposed) the result would probably have been different. The distance from Samāweh to Hā'il was covered by Ahmed Feizi's force (late winter, 1905) in about three weeks.

Supplies are generally unprocurable. In spring, animals for killing might be obtained from herdsmen near the track. Forage exists only for camels. Fuel is afforded by sparse and low bush vegetation in the desert hollows, and a comparatively small party would soon exhaust a considerable area round its camp. Water on the routes from Samāweh, Sūq esh-Shuyūkh, and Nejef is scanty and difficult of access except after rain, when pools (*khabrahs*) might be found: up to within 70 m. of Hā'il there are on these routes very few permanent wells yielding a sufficient supply for more than a small party (Hayyānīyah, Hazil, Lōqah, Leinah).

(i) From **Zobeir** to **Boreidah** *via* **Koweit.** For the Section Zobeir—Koweit see *Route* 23 c, in this handbook. For the Section Koweit—Boreidah see *Handbook of Arabia*, vol. ii, Route 9, and Chapter II, B (i). Distance from Zobeir to Boreidah, 351½ m. This is an important route with no serious obstacles; there are wells at most of the

stages, and pools which remain for about a week after rain. There is generally enough grazing for a small caravan. No permanent settlement occurs between Jahrah (m. 20 from Zobeir) and 'Ain ibn Faheid (m. 316½). At Riqa'i (m. 96) the route is joined by a track from Zobeir (six stages, about 123 m.), on which no water is to be found: *Handbook of Arabia*, vol. ii, Route 8, and Chapter II, B (i).

There is also a route, very badly supplied with water, from Koweit to Zilfi (295 m.)—see *Handbook of Arabia*, vol. ii, Route 10, and Chapter II, B (i)—and there is a direct route from Koweit to Riyādh, with long waterless stages.

(ii) From **Sūq esh-Shuyūkh** to **Hā'il.** See *Handbook of Arabia*, vol. ii, Route 7, and Chapter II, A (ii) (*b*). Distance 397 m. It runs through the *dīrah* of the Muntefiq and Dhafīr to Leinah (m. 207), and thence to Bīr Beleghbīyah (m. 240), whence the Darb Zobeideh (see (iv) (*a*) below) is followed to Hā'il. The route is possible for camel transport. Water is obtainable except for four stages between Qasr Bīr Shagrah (m. 21) and Bīr el-Arkamīyah (m. 101), and for two stages between Bīr Unsab (m. 154) and Bīr Umm 'Amāreh (m. 194). Fuel and fodder are plentiful, especially between m. 101 and m. 204: the fodder is parched in summer. No other supplies between Sūq esh-Shuyūkh and Hā'il.

(iii) From **Samāweh** to **Boreidah.** See *Handbook of Arabia*, vol. ii, Route 6, and Chapter II, A (ii) (*a*). Distance 365 m. This route follows at first the eastern branch of the track known as the *Darb es-Selmān* (see (iv) (*a*) below). About 50 m. N. of Leinah the western branch of this road comes in from Nejef. At Leinah wells (m. 160) the *Darb es-Selmān* diverges to Hā'il. The track to Boreidah runs through Qusaibah and 'Ayūn el-Qasīm. Heavy going for laden camels and stony ground likely to lame camels occur in parts of this route. Water up to Leinah is indifferent in quality or dependent on rain, and is very scarce between Leinah and Qusaibah (m. 309). Fuel and camel-grazing are scarce till Leinah is reached. There is no permanent settlement between Samāweh and Qusaibah, and no supplies are obtained up to 'Ayūn (m. 337). Transport animals other than camels are owned in numbers by the tribes about Samāweh.

(iv) From **Nejef** to **Hā'il.**

(*a*) The *Darb Zobeideh*. See *Handbook of Arabia*, vol. ii, Route 3, and Chapter II, A (ii) (*a*). Distance 403 m. This route runs past Birket Jumeimah (m. 160) to Bīr Beleghbīyah (m. 252). Thence it goes past the Sha'ībah wells (m. 318), near which a track branches to Boreidah. This was formerly the route followed by the *Hajj*, and there is a continuous series of tanks and reservoirs along the road: yet it has fallen into disuse. Water is scarce: the rains are

not sufficient to fill the reservoirs. Fuel and fodder are generally found along the track in sufficient quantities for small caravans. The western branch of *Darb es-Selmān* track diverges from the *Darb Zobeideh* about 50 m. S. of Nejef and runs to join the eastern branch (from Samāweh) about 50 m. N. of Leinah wells. The *Darb es-Selmān* rejoins the *Darb Zobeideh* at Bīr Beleghbīyah (m. 252), where also the route from Sūq esh-Shuyūkh (see (ii) above) comes in.

(*b*) Route *via* **Hayyānīyah**. See *Handbook of Arabia*, vol. ii, Route 4, and Chapter II, A (ii) (*a*). Distance about 342 m. This route is now followed by the *Hajj* and by food caravans. It runs about 40 m. W. of the *Darb Zobeideh*, passing through country occupied by the Shammār from midwinter to early spring, and in spring and summer by semi-nomadic Shiah tribes from the Euphrates Valley, who descend as far S. as 120 m. from Nejef to pasture their sheep and donkeys. Going is generally good except after rain. Water is not plentiful. At all regular watering-places except Lōqah (m. 163) there is sufficient water only for small caravans. Permanent wells are very few (Lōqah at m. 163, Hayyānīyah at m. 247½, Qulbān et-Tayyim at m. 307½, and Jeithanīyah at m. 320½). In winter and spring there are rain-water pools, varying in number and extent according to the season. The presence of herds in the neighbourhood of the northern part of the route suggests that there are water-holes at some distance from the track. In winter there is camel-grazing all along this route. In winter and spring fresh meat can be obtained from herdsmen. Otherwise, no supplies are obtainable.

(*c*) Route *via* **Hazil** wells. See *Handbook of Arabia*, vol. ii, Route 5, and Chapter II, A (ii) (*a*). Distance about 372 m. At Bīr Samīt (m. 82) a route from Kerbela comes in. From here to Bīr Hazil (at m. 193), and from Bīr Hazil to Bīr 'Atwa (at m. 288), water is obtainable only from rain-water pools, dry in summer. Fuel and camel-grazing in most places. No supplies.

(B) Routes from Basra through Koweit to Hofūf and Qatīf

These routes pass through Koweit. For the tracks from Basra (Zobeir) to Koweit see *Routes* 23 a–d in this volume.

Koweit to **Hofūf**: see *Handbook of Arabia*, vol. ii, Route 12, and Chapter II, B (iii). Distance from Koweit 345 m. An easy route over ground mostly level. Water obtainable throughout and generally plentiful. Fuel scarce on most of the route. Fodder generally good except in spring. General supplies must be taken from Koweit.

Camels, donkeys, and cattle at Ntā' or Antā' (m. 154) and Sarrār (m. 162).

Koweit to **Qatīf**: see *Handbook of Arabia*, vol. ii, Route 13, and Chapter II, B (iii). Distance 256 m. The Hofūf route is followed to Inqair (m. 112). The surface is generally good. Water good in the first stages, in the Biyādh district and in the Qatīf oasis. Fuel generally scarce. Fodder generally sufficient for a small caravan. No other supplies.

RAILWAYS

(i) **Kurna—Amara** line.—This runs along the r. bank of the Tigris. Rails were laid practically throughout by the middle of November 1916. (Compare *Routes* III A and 4.)

(ii) **Basra—Nāsirīyeh** line. This starts from Magil and passes Basra town in the neighbourhood of the Zobeir Gate, and thence follows the line of a *bund* across the low-lying plain, liable to inundation, which extends to the W. of Basra. Having crossed this area the line apparently runs about parallel with, and not far from, the edge of the Euphrates inundation. The line had been completed as far as Khamīsīyeh by the middle of November 1916. Between Khamīsīyeh and Nāsirīyeh the line crosses ground subject to inundation, and will be embanked when completed. (Compare *Route* 13 a.)

(iii) **Ridhwānīyeh—Baghdad** Decauville line.—This line connecting the Euphrates with Baghdad apparently starts from near the mouth of the Ridhwānīyeh Canal (*Route* IV D, m. 61) and runs by Abu Thubbah and Tel Aswad (*Route* IV D, under m. 66). There are stations at the places named, and also at Kharr near Baghdad (apparently in the neighbourhood of the Kharr bridge, *Route* 21 a, m. 3). It was reported in May 1916 that the trucks on this line were man-handled.

GAZETTEER OF TOWNS

AHWĀZ-NĀZIRĪ. On the l. bank of the Kārūn. Lat. 31° 20′, long. 48° 41′.

Pop. about 7,500 (Ahwāz, pop. 1,500, 200 houses; Nāzirī, pop. 6,000, 900 houses). P.O. T. (Mohammareh—Shushtar, Shushtar line: branch to Ramuz and Borasjūn, where the Bushire—Teheran (Indo-European) line is joined). Telephone (Anglo-Persian Oil Co.'s line from Maidān-i-Naftūn to 'Abbādān. Telephonic communication with Mohammareh).

River Routes.—For the navigation of the Kārūn above and below the rapids, and of the Āb-i-Dīz, see *Route* II A. The Kārūn is the most important highway in this region.

Land Routes.—

(i) To **Mohammareh** *via* both sides of the Kārūn. (See *Routes* 6 a and 6 b.)

(ii) To **Shushtar,** *via* both sides of the Kārūn. (See *Route* 6 c.)

(iii) To **Shush.** (See *Route* 6 d.)

(iv) To **Amara.** (See *Route* 8 a.)

(v) To **Isfahan.** (See *Routes in Persia*, vol. iii, 69.)

(vi) To **Maidān-i-Naftūn.**

General Description.—Ahwāz village lies on a somewhat high bank at the head of the Ahwāz rapids at the NW. end of a low range of sandstone hills which subside before reaching it. Nāzirī village (or Bandar-i-Nāzirī) lies about 1 m. S. of Ahwāz below the rapids on a slight elevation overlooking the river: opposite it is the village of Amīnīyeh.

The importance of Ahwāz-Nāzirī lies mainly in the position of the two villages above and below the practically unnavigable rapids of the Kārūn. Cargoes brought up or down the Kārūn have to be transhipped here (see *Route* II A). Before the war a horse-tramway, belonging to the Persian merchant Mu'in et-Tujjar (see under Mohammareh), conveyed goods between Nāzirī and Ahwāz wharves.

In 1914 there were apparently three wharves at Nāzirī, and two above the rapids.

Climate.—Rainfall for 1913, 12·62 in. Lowest temperature recorded, 39°·4 F. on February 23; highest, 115°·8 F.

Supplies and Commerce.—Ahwāz is a centre of the grain-trade of Arabistan, but has practically no supplies locally produced. The water-supply is ample and good. Mules are fairly numerous, and are in the hands of guilds of muleteers, each man owning 3 to 10 mules, but all work together and accept collective contracts.

In 1914 the Anglo-Persian Oil Company had drilled test-wells at Ahwāz. The Oil Company's pipe-line from Maidān-i-Naftūn runs close by.

Administration and Authorities.—The Ahwāz district is under a vice-governor appointed by the Sheikh of Mohammareh. In 1914 the vice-governor was the Sheikh's son Khasib Khān. There is a British vice-consul at Ahwāz.

AMARA. On the l. bank of the Tigris, 92½ m. above Kurna, and 151½ m. below Kut el-Amara.

Pop., estimated, 10,000 about 1905; estimated by an observer in 1915 at about 20,000.

P.O. T. (the Fāo—Basra—Kut el-Amara—Baghdad line passed through Amara before the present war). Bridge of boats.

River Routes.—

(i) For communications on the Tigris see *Routes* III A, B.

(ii) Boat communication through the marshes on both sides of the Tigris below Amara. Details not available.

Land Routes.—

(i) To **Kurna** and **Basra.** (See *Routes* 2, 4.)

(ii) To **'Ali el-Gharbi.** (See *Routes* 5 a, 5 b.)

(iii) To **Ahwāz.** (See *Route* 8 a.)

(iv) To **Dizfūl.** (See *Route* 8 b.)

Landing and Anchorage.—See *Route* III A, m. 92½.

General Description.—The town stands on a strip of ground enclosed on the W. by the Tigris, on the N. by the mouth of the Jehāleh and Musharreh canals, and on the E. by the Jehāleh. N. of the Musharreh lies a belt of dry ground, beyond which is a marshy area liable to inundation. E. and SE. of the town lie extensive marshes in which boat communication is possible (details not available). At some distance S. of the town are marshes inhabited by Āl Bū Mohammed. The width of the Tigris at Amara averages 197 yds.: its depth varies from about 13 ft. (high water) to about 6½ ft. (low water). There are date plantations on both banks of the Tigris. On the r. bank is the suburb of Daffās, which before the

war was connected with Amara by a boat-bridge. There was also apparently a boat-bridge across the mouth of the Jehāleh Canal N. of the town. Along the whole river frontage (about ½ m. in length) runs an embankment or wharf faced with brick. The northern quarter is the older and extends the whole way between the Tigris and the Jehāleh. Here is a fine building which belonged to the *Dā'irat es-Sanīyeh*, and here also were the Turkish barracks, the principal Government offices, and a large covered bazaar. In the southern quarter are 27 well-built houses of recent date facing the river; 15 of them were built by the *Dā'irat es-Sanīyeh*, and the rest by local sheikhs.

Climate and Hygiene.—In summer the heat is very great, but dry, and the nights are comparatively cool.

Amara has the reputation of being the most healthy town in Irak after Baghdad. In the surrounding country cases of leprosy are said to be rather numerous.

Supplies and Commerce.—Wheat, barley, maize, rice, and sesame are brought here from the surrounding country; fruit and nuts can be obtained in the town. Before the war there was a considerable export of cattle to Syria and also to Basra. *Ghi*, rice, and barley were sent to Baghdad and Basra, the greater part of the *ghi* being shipped on to Bombay and the Levant ports, and a considerable quantity of the barley to Europe. Amara wool was also exported, and is said to be of good quality. Skins and hides were sent to Baghdad. The manufactures of the town are Arab cloaks, Kurdish rugs, and Sabian silver ware. There are perhaps 150 or more shops in Amara. The currency employed before the present war was mainly Persian silver *qrāns*.

Inhabitants.—The bulk of the population are town Arabs, but there are large numbers of Lurs from Pusht-i-Kūh who work as porters, and Arabs who appear to live a semi-nomad life in huts on the edge of the city. The larger shopkeepers and merchants are nearly all Persians and Jews. There is a colony of Sabian silversmiths who live in a quarter of the town near the junction of the Musharreh and Jehāleh canals, and a fair number of Christians, who appear to be for the most part artisans and scavengers.

Administration and Authorities.—Amara under the Turkish régime was the head-quarters of a *Sanjaq* of the same name in the *Vilayet* of Basra. The town was administered by the *Mutessarif* of the *Sanjaq*, under whom was a municipal council. The garrison usually consisted of one infantry battalion, one squadron of cavalry, and three or four field-guns. The *Dā'irat es-Sanīyeh* had a head office here, and there were Mamurs of the Customs, Public Debt, and

Sanitary Departments, and of the Tobacco Régie. A harbour-master superintended shipping and river conservancy. The Persian Government was represented by a consular agent.

History.—Amara has grown up since 1860 in consequence of the pacification and material development of the district. The recent prosperity of the town was largely due to the improvement of agriculture by the *Dā'irat es-Sanīyeh.*

BAGHDAD. On the Tigris in lat. 33° 20′ N., long. 44° 25′ E.: about 220 ft. above sea-level. Pop. about 200,000. P.O. T. (lines Basra—Kut—'Azīziyeh and Basra—Hilla meet and continue *via* Mosul to Constantinople: line to Kirmanshah and Teheran *via* Bāqūbeh, Khanikin, and Karind: line *via* Fellūjeh and Deir to Aleppo. Condition of telegraph lines bad; slight atmospheric disturbance causes interruption of service. In winter Baghdad may be without telegraphic communication for several days at a time. The telegraph poles are of iron on the plains, on account of the annual inundations.) Wireless station at South Barracks.

Bridge of boats connecting E. and W. Baghdad somewhat above middle of town. Bridge is 240 yds. long and consists of 24 wooden pontoons, moored both to banks and to buoys in midstream. The roadway is fit for any use, and is protected by a parapet or rail, but the steep ascent and descent at each end make it difficult for horses, and especially at low water for wheeled vehicles heavily laden. A section of three boats near the r. bank can be swung downstream to let steamers or masted vessels through, and the bridge can also be opened at the other end. The whole bridge is removed in particularly high floods, especially if the wind blows hard up the river.

River Routes.—

(i) To **Basra** and the sea *via* the Tigris. (See *Routes* I A, B; III A, B, C.)

(ii) To **Samarra** and **Mosul** *via* the Tigris. (See vol. iii, *Routes* III D, E.)

Land Routes.—

(i) To **Kut.** (See *Route* 5 c.)

(ii) To **Nejef** *via* Hilla. (See *Route* 21 b.)

(iii) To **Nejef** *via* Kerbela. (See *Route* 21 a.)

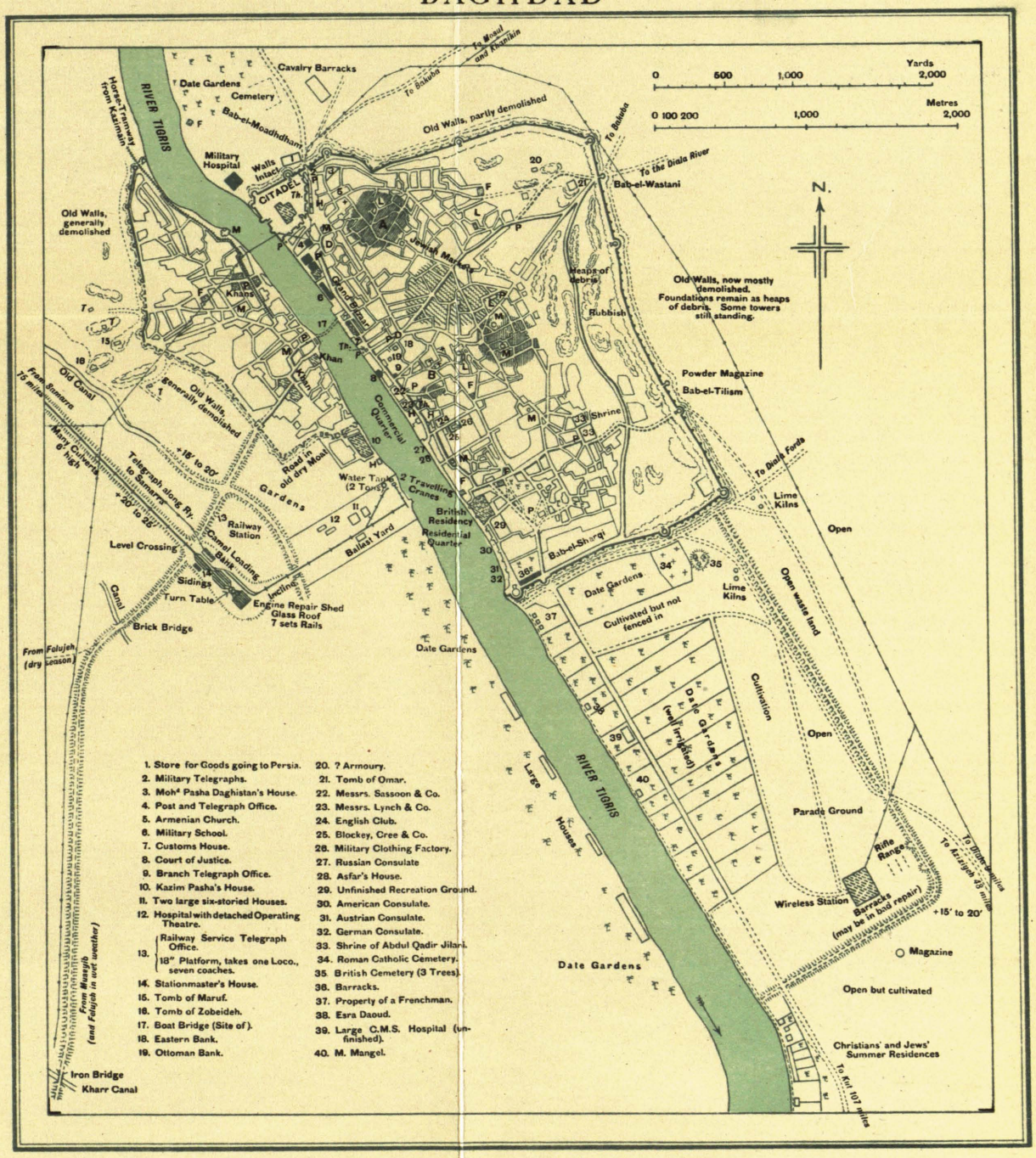
(iv) To **Aleppo** *via* Fellūjeh, and up the Euphrates Valley to Meskeneh. (See vol. iii, *Route* 46.)

(v) To **Ānah** across the desert. (See vol. iii, *Route* 48.)

(vi) To **Mosul** *via* the r. bank of the Tigris. (See vol. iii, *Route* 25 b.)

(vii) To **Mosul** *via* Kirkuk. (See vol. iii, *Route* 25 a.)

BAGHDAD


Yards
0 500 1,000 2,000
Metres
0 100 200 1,000 2,000
N.
RIVER TIGRIS
Cavalry Barracks
Date Gardens
Cemetery
Bab-el-Moadhdham
Horse-Tramway from Kadhimain
Military Hospital
Walls intact
CITADEL
Old Walls, generally demolished
Old Walls, partly demolished
To Mosul and Khanikin
To Baluba
To the Diala River
Bab-el-Wastani
Jewish Market
Grand Bazar
Khans
Khan
Heaps of debris
Rubbish
Old Walls, now mostly demolished. Foundations remain as heaps of debris. Some towers still standing.
Powder Magazine
Bab-el-Tilism
Shrine
Commercial Quarter
Old Canal
From Samarra 75 miles
Marsh Cultivation 6' high
Old Walls, generally demolished
Road in old dry Moat
Water Tanks (2 Towers)
2 Travelling Cranes
British Residency
Residential Quarter
Gardens
Telegraph along Rly. to Samarra
+15' to 20'
+20' to 22'
Railway Station
Level Crossing
Camel Loading Platform
Sidings
Turn Table
Incline
Engine Repair Shed Glass Roof 7 sets Rails
Ballast Yard
Canal
Brick Bridge
From Falujah (dry season)
From Musayib (and Falujah in wet weather)
Iron Bridge
Kharr Canal
Bab-el-Sharqi
To Diala Fords
Lime Kilns
Open
Open waste land
Date Gardens
Cultivated but not fenced in
Date Gardens (well irrigated)
Cultivation
Large Houses
Parade Ground
Rifle Range
Wireless Station
Barracks (may be in bad repair)
+15' to 20'
To Aziziyah 23 miles
To Diyala 3 miles
Magazine
Open but cultivated
Christians' and Jews' Summer Residences
To Kut 107 miles
1. Store for Goods going to Persia.
2. Military Telegraphs.
3. Moh^d Pasha Daghistan's House.
4. Post and Telegraph Office.
5. Armenian Church.
6. Military School.
7. Customs House.
8. Court of Justice.
9. Branch Telegraph Office.
10. Kazim Pasha's House.
11. Two large six-storied Houses.
12. Hospital with detached Operating Theatre.
13. Railway Service Telegraph Office. 18" Platform, takes one Loco., seven coaches.
14. Stationmaster's House.
15. Tomb of Maruf.
16. Tomb of Zobeideh.
17. Boat Bridge (Site of).
18. Eastern Bank.
19. Ottoman Bank.
20. ? Armoury.
21. Tomb of Omar.
22. Messrs. Sassoon & Co.
23. Messrs. Lynch & Co.
24. English Club.
25. Blockey, Cree & Co.
26. Military Clothing Factory.
27. Russian Consulate
28. Asfar's House.
29. Unfinished Recreation Ground.
30. American Consulate.
31. Austrian Consulate.
32. German Consulate.
33. Shrine of Abdul Qadir Jilani.
34. Roman Catholic Cemetery.
35. British Cemetery (3 Trees).
36. Barracks.
37. Property of a Frenchman.
38. Esra Daoud.
39. Large C.M.S. Hospital (unfinished).
40. M. Mangel.
Principal Roads through City.
Government Buildings.
Possible Billeting.
F. Flour-Mills.
Church.
M. Mosque.
P. Police Post.
P. Pump.
D. Dispensary.
H. Hotel.
L. Liquor Shop.
T. Tomb.
Ta. Theatre.
A,B. Brothels.
Jewish Quarter.
Allowah Retail Grain Market.

(viii) To **Kirmanshah** *via* Khanikin. (See vol. iii, *Route* 28 a.)
(ix) To **Kirmanshah** *via* Mandali. (See vol. iii, *Route* 28 b.)
(x) To **Beledrūz** *via* Bahriz. (See vol. iii, *Route* 30.)
(xi) To **Bāqūbeh** *via* the l. bank of the Diyāleh. (See vol. iii, *Route* 31.)

Railway.—The **Baghdad—Samarra** section of the Constantinople—Baghdad railway is complete. It follows more or less the line of the Baghdad—Samarra road (see vol. iii, *Appendix*). The Baghdad station lies SSE. of the r.-bank quarter, and a line 1,300 yds. long connects it with riverside wharves nearly opposite the Russian Consulate.

A **horse-tramway** runs from W. Baghdad to the suburb of **Kazimain** (†3½ m.), starting from near the bridge of boats: it is a single line of normal gauge; about 14 two-horse cars (1904), each of which could carry 50 men: sidings about every ½-mile, each accommodating three cars.

A fairly regular **motor-car service** was established, about a year before the outbreak of war, between Baghdad and Bāqūbeh *via* Khān Beni Sa'id.

Anchorage and Landing.—The regular mooring-place for river steamers is on the l. bank a little below the bridge of boats.

General Description.—The town stands on both sides of the Tigris, which flows through it from NW. to SE.: the longer and more important part of the modern town is on the E. bank, and extends for a distance of 3 m., including the Citadel. The breadth of the river here varies from less than 250 yds. to more than 350 yds. Its depth at l.w. is 12–15 ft. opposite the British Residency below the bridge of boats; in h.w. the river has been known to rise as much as 13 ft. in a day, and reaches the depth of 30–36 ft. in April: no steamers can make any headway against such a rise. The current is 1½–2 m. an hour (l.w.); at h.w. it rises to 4 m. an hour. The banks at the town, and for some distance above and below it, are firm, steep, and high, and of good clay soil. Beyond the walls the banks are fringed with a belt of cultivation fertilized by water-lifts, and are planted with date-groves with fodder-crops between the palms. A good many willows are seen below the city on both banks. These serve partly for fuel, partly to prevent the erosion of the bank. But these fertile belts are narrow, and on its landward sides the city is closely hemmed in with parched clay desert. The area in the immediate neighbourhood is low lying and imperfectly protected from flood by embankments; in h.w. the city may become an island cut off from communication except by boats.

About four years ago Nazim Pasha constructed two embankments

(*sudd*, about 6–7 ft. in height) which encircle the town on the NE., E., and SE. The N. end of the outer *sudd* is reported to be about $2\frac{1}{2}$ m. from the Citadel (see below), and to be broad enough for a carriage to drive along it. It runs from Mo'adhdham to Qarāreh. On the SE. side of the city a third *sudd*, enclosing an area of about 3,000 × 1,500 yds., runs past a line of mounds about 20 ft. above the plain, which lie, apparently, 1–2 m. from the S. gate. The western end of this line of mounds is apparently about $\frac{1}{4}$ m. from the Tigris.

The Christian cemeteries lie SE. of the town, outside the wall of the city; they are surrounded by mud walls. The South Barracks, built by Nazim Pasha in the same region, have to a great extent collapsed, as the result of the floods of 1914. On the N. side of the town there is a military hospital a short distance above the Citadel, and near it a large hospital built by a rich Jewish merchant.

The city on both sides of the river was surrounded by a wall of earth and brickwork, following on the E. side the line of the fortifications of Mustashīr (1095 A.D.); this was dismantled about forty-five years ago, but still forms a continuous embankment 10 to 15 ft. high, along which runs a path or road with a deep ditch in front. Otherwise Baghdad was an open town before the present war.

On the l. bank the remains of the city-wall form with the river a rough parallelogram about 2 m. long with an average width of somewhat over 1 m., containing the main town of Baghdad. About one-third of this area (the part next the desert) is empty or occupied by graveyards, ruins, and rubbish-heaps. Towards the S. there were once numerous date-groves, but in recent years these have been rapidly making room for new houses. One of the old gateways (called Bāb et-Tilism, the Talismanic Gate, bricked up in 1639) is now a military magazine. It is a fine octagonal tower standing at some distance from the houses in the SE. part of the long face of the wall that looks towards the desert. Towards the NW. end of the same stretch of wall is the Bāb el-Wastāni (the middle gate), a domed octagonal chamber standing outside the present line of the wall, with which it is connected by a low bridge leading across the moat, flanked with walls on either hand.

The quarters of the city that lie on the r. bank begin farther upstream than those on the left, and extend to a greater distance above the bridge of boats. The city-wall on this side follows a more irregular course than on the other, and encloses an area of considerably less depth, but the vacant spaces within it are not so large proportionally as on the eastern bank.

The streets of Baghdad are winding, ill kept, and generally too

narrow for the passage of vehicles. In the better residential quarters there are houses of considerable height, sometimes of three stories, generally built of soft yellow brick; in the poorer parts of the town the houses are low and built of unburnt brick. There are few inequalities of ground, though there is apparently a rise in the W. town, and one quarter in the W. centre of the main town is higher than the rest. Among what can be regarded as main streets may be mentioned a road rather wider than the rest, leading from the main bazaar near the E. end of the bridge of boats past the military barracks and Government offices to the NW. gate (Bāb el-Mo'adhdham): shortly before it reaches the gate it traverses the Maidān, the principal piazza of the town. A little S. of this, in a back street, is the post and telegraph office. There are also, however, a fairly broad asphalted street constructed by Nazim Pasha, which runs from the S. end of the bazaars as far as the S. gate,[1] a short broad street which leaves the main thoroughfare referred to above at a point near the English Club (see below) and runs past the Government cloth factory and barracks, and a broad road which runs S. from the S. gate towards the village of Qarāreh.

The general view of the town, as seen from a height, such as the tower of the Roman Catholic church, is as a whole flat and monotonous, but certain prominent objects stand out above the general level. The most conspicuous landmark is the minaret of the Sūq el-Ghazal, or Thread-market, a tower rising to about 100 ft. in the very centre of the main town. Minarets and cupolas rise here and there, of which the most prominent are the domed shrine of Sheikh 'Abdul Qādir near the SE. extremity of the town, the blue cupola of the Jāmi' el-Maidān towards the W. end, the summit of the Jāmi' es-Serai nearer the middle of the town, close to the Government offices, and the Azbaq mosque, just within the Bāb el-Mo'adhdham. There is also the tall chimney of the Government cloth factory. The modern bazaars, in the district near the bridge, are long, vaulted, dark brick structures. The old bazaars are usually covered in with wood. The Citadel or Arsenal lies near the river in the northern quarter of the E. town, and is used for military stores. The Law Courts and the civil and military offices of the Government form a block of buildings known as the *Serai*, beginning about 350 yds. above the bridge with a considerable frontage on the river. Immediately above is the local office of the *Dā'irat-es-Sanīyeh*. The customs-house, on the left bank, is a little below the end of the bridge of boats (the building is proved by an Arabic inscription

[1] A new broad road, approximately along this line, and continued through the city to the N., is reported to have been recently constructed.

still to be seen to have been formerly the Mustansirīyeh College, founded A.D. 1233). About ½ m. below the bridge is the old British Residency, now converted into an hotel: the new British Residency, with its dependent buildings, is about ½ m. below this, not far from the SE. end of the town, the largest and most commodious building in the town. At the E. end of the bridge are the bazaars. The English Club is about 100 yds. E. of the old British Residency. The Russian Consulate is about ¾ m. below the bridge: then follow the French and Austrian Consulates. The Persian Consulate is on the r. bank about 150 yds. above the bridge. All of these consulates are liable to change their site, the buildings not being the property of the respective Governments. The present American Consulate is about 150 yds. below the British Residency. The present German Consulate is stated by a resident in Baghdad (1914) to be about 250 yds. below the Residency. In 1909 it was reported to be about the same distance above the Residency.

Within Baghdad itself, apart from Kazimain (see below, p. 383), the most important religious centre is the mosque and tomb of 'Abdul Qādir, a most popular place of pilgrimage. 'Abdul Qādir, who died in A.D. 1253, founded the Qadiriyeh sect of Dervishes, still a widespread order with many members in India. Near the mosque is a *tekīyeh* or hostel for pilgrims, many of whom were British subjects: the hostel and shrine are under the charge of the head of 'Abdul Qadir's family, who holds the title of *Naqīb*, and has great influence, derived partly from his wealth and partly from the sanctity attached to his position.

On the r. bank just outside the N. quarter of the town lies the tomb of Sheikh Ma'rūf, a contemporary of Harūn er-Rashid. The tomb is surrounded by a cemetery in which is a building known as the tomb of Zobeideh, wife of Harūn el-Rashid, but this identification is certainly erroneous: the princess was buried at Kazimain, though the exact site of her burial is unknown.

Climate and Hygiene.—Owing to the neighbourhood of the desert, Baghdad suffers from extreme variations of temperature: the usual summer maximum at 8 a.m. is about 95° F., the winter minimum 31°–26°. The maximum summer temperature occurs between 12 noon and 5 p.m. from July 1 to Aug. 31, when it varies between 106°–124° F. The climate is dry: clouds are seldom seen, and rain does not fall on more than twenty days in the year, and that almost entirely in winter. December, January, and February are cool and bracing months; March and April are warm and unsettled, with occasional thunder and dust storms; May and June are hot but fine, often with a cool NW. wind at night; in July, August, and

September the heat is excessive, and the inhabitants live in subterranean rooms, *serdābs*, by day; during October the heat begins to abate, and in November the weather becomes cool again. The prevailing winds are from NW. and N.; the E. wind in the summer is accompanied by high temperature: the S. wind is always oppressive, and brings dust.

The usual town diseases are found here, and the city has been visited at times by epidemics of cholera and bubonic plague (see vol. i, p. 45). Malaria is not generally serious, except when the country round the city is flooded. For the 'Baghdad Boil' see vol. i, p. 45. Brothels are situated in a district about 300–500 yds. E. of the Citadel, and about the centre of the city some 200 yds. from the river.

Water is filtered in the houses in large porous jars called *zeers*, which are left uncovered and form breeding grounds for mosquitoes (see also below on water-supply). There is no modern drainage system; sewage is conveyed on the backs of donkeys to gardens outside the city, and vegetables are there grown on sewage-impregnated soil.

Supplies and Commerce.—Baghdad has a narrow belt of date plantations and fruit gardens extending above and below the town, of which the date-palms are estimated at 177,800 and other fruit-trees at 130,000. Otherwise it is not the centre of a productive region, but supplies of wheat and rice come largely from the Hilla district, Beled-rūz, and Mosul; there are 116 flour-mills, worked by horses, in the city. In the Maidān and three other quarters of the town water is supplied in pipes, pumped from the Tigris by an oil-engine of 20 h.p.; but no attempt is made to filter it or even to allow the silt to settle. The shrine of 'Abdul Qādir and part of the quarter round it are supplied by water raised by irrigation lifts worked by horses and transmitted in pipes. Elsewhere the river-water is brought in skins on donkeys (1 skin being the usual load) at a cost varying between 2·8 rupees and 4·11 rupees per 100 skins, according to the distance from the river. Many houses in the town have private wells, but the water in them is not sweet, and is fit only for watering roads, &c. The level of water in these wells varies with the level of the Tigris. The shops in the town were before the war well provided with European articles, including Manchester cotton goods.

Baghdad is the chief industrial town in Irak, but its manufactures are for the most part not mechanical. Machinery driven by steam was to be found in 1908 only in a private ice-factory, an army clothing-factory, and army flour-mills of the Turkish Government, and in two out of several wool-presses. The army clothing-factory has a tall

brick chimney which is a prominent landmark. There were at the outbreak of war three or four ice-factories and flour-mills worked by oil-engines. The most important manufactures are the making of silken thread and stuffs; cotton and woollen goods and tent canvas are also made. Arab cloaks, *'abas*, are made in great numbers, and fancy goods both in silk and cotton are extensively produced. There are a number of tanneries, of which about 40 are in the suburb of Mo'adhdham (see below, p. 383): the leather, though only rough-tanned, is much exported to Europe: native shoes and boots are manufactured from it. The Baghdad coppersmiths are famous and numerous, and there is a manufacture of clay earthenware.

For purposes of transport the following animals could probably be obtained at a few days' notice: 300 mules, 500 ponies, 1,000 donkeys, and 1,000 camels (1903). The pack-mules are similar to the Persian breed, the ponies are sturdy and country-bred, and the donkeys are hardy and strong. In 1903 there were 80 4-wheeled, 4-horse pilgrim wagons, each carrying about 14 men (dépôt at Kazimain); also 20 2-horsed carriages and 14 horse-tramcars. A few motor-cars have been used in the service between Baghdad and Bāqūbeh. Besides the river-steamers, of which the Turkish Co. owned eight and the Euphrates and Tigris Steam Navigation Co. three, plying as far as Baghdad, there were about 100 *safinehs*, large sailing-boats, and 500 *quffehs*, which are largely used as ferry-boats.

Baghdad absorbs most of the import trade of Irak, and Basra may be regarded as little more than its seaport (see under Basra). It is a centre of commercial transport, especially to Persia: it is estimated by experts that three-quarters of the imported goods are transmitted to Persia. Persia in return sends carpets, skins, wool, gums, and opium; and wheat is obtained there in years of scarcity for local consumption. With regard to internal trade the importance of Baghdad is not so great, but it is the principal centre for the distribution, throughout the whole country, of cotton piece-goods, which constitute half the total sea-borne imports of Irak. To Mosul are sent sugar, coffee and spices, and metals, and in return come the best wool in this part of Asia, with mohair and oak, walnut, and poplar timber, of which the two former are much exported. The timber which comes to Baghdad *via* Mosul comes mostly from farther north. Bāqūbeh supplies fruit and firewood in return for manufactured articles.

At the outbreak of war four British firms had agencies in Baghdad, and there were one or two German firms: the Imperial Ottoman Bank has a branch, and also the Eastern Bank.

Inhabitants are of many races and religions. The Jews form

the largest racial group, numbering about 55,000; the Arabs come next with about 38,500, of whom some 7,000 are Bedouin sojourners. The Turks number probably about 4,000, mostly belonging to the official class, the Kurds 5,500, the Persians 5,000. There are about 8,000 native Christians of various races, some Afghans and Pathans, who are mostly watchmen and door-keepers, a few Mohammedan Indians, but no Hindus. The Turks live mainly in the W. part of the main town; the Jews' old quarter lies N. of the Sūq el-Ghazal (Thread-market) in the centre of the main town: the old quarter of the Christians lies W. of the Thread-market, but the Jews are overrunning the Christian quarter, and the Christians spreading eastwards. Elsewhere Arabs, Persians, and Kurds are intermingled, but the quarters on the r. bank are predominantly Persian and almost wholly Shiah. Most of the European residents live along the l. river bank towards the S. end of the town. The Jews are coming more and more to control the trade of Baghdad, making it more difficult for the European merchant to hold his own; during the past 20 years the native Christian merchants have mostly disappeared and many Mohammedan merchants have found themselves forced to take Jews into partnership. Of the Moslems about five-ninths, including the well-to-do families, are Sunnis, about four-ninths Shiahs. The most influential Moslem inhabitant is the Naqīb of Baghdad, 'Abd er-Rahman Effendi, who lives on the l. bank of the river immediately above the British residency. Of the native Christians the Gregorian Armenians and Chaldaean Catholics numbered, about 10 years ago, each about 2,000, the Syrian Catholics about 1,400, the Roman Catholics (or 'Latins') about 1,200, the Catholic Armenians 1,000, Protestants 200, but these numbers have probably increased during the interval, especially as Christians from Northern Mesopotamia have recently been moving into Irak to escape the Kurds. The Roman Catholics, Syrian Catholics, and Catholic Armenians are closely connected and are under a single bishop (Bishop of Babylon, who resides at Baghdad). These Catholics are said to have increased in numbers in recent years, and may considerably exceed the totals given above. The Christians are mostly Christians by descent: there are few recent converts. The followers of the different religions and sects are distinguished by characteristic clothes.

Administration and Authorities.—Baghdad is the capital of the *Kaza*, *Sanjaq*, and *Vilayet* of Baghdad. The *Kaza* includes both parts of the town, and on the l. bank of the river extends both above and below the city, and eastwards to the Diyāleh River. (For the *Vilayet* see vol. i.) In this *Kaza* there is no Kaim-

makam, the administration being carried on by the Vali of the *Vilayet*, who resides in the city. The city itself is nominally administered by a municipal council supervised by the civil authorities; in point of fact their power before the war seems to have been limited to offering suggestions to the Vali. Baghdad was the head-quarters of the 6th Turkish Army Corps and had a permanent garrison, the infantry being quartered in barracks capable of containing 3,000 men on the l. bank between the bridge of boats and the Serai, and the artillery in the Citadel with stables outside the Bāb el-Mo'ādhdham.

There were before the war a British Resident in Baghdad, a Russian Consul-General, and a French Consul, a German and Austrian Consul, a Persian Consul, an American Vice-Consul, and Belgian, Norwegian, and Spanish Representatives.

History.—Pre-Mohammedan Baghdad is of no historical importance, though remains of a quay have been found which show that there was a settlement here in the time of Nebuchadnezzar. The town was founded as a great city in A.D. 762 by the second Caliph of the Abbasid line, Mansūr. He established on the r. bank a great town which he called Dar es-Salam, 'the Home of Peace', but the older name of the site, Baghdad, prevailed. This 'Round City', which lay N. of the present W. town and extended nearly as far as Kazimain, was for a while the capital of the whole Moslem Empire and was the centre of an imperial road-system. A second palace was built for his son, Mahdi, on the l. bank. The city reached the zenith of its prosperity in the Caliphate of Harūn er-Rashid at the end of the eighth century. After his death the 'Round City' suffered in the consequent civil wars, and in A.D. 836 was deprived of its position as capital of the Moslem world by the removal of the Caliph's court to Samarra. In A.D. 892 the Caliph Mu'tadid established the capital at Baghdad, but preferred the eastern bank, and from this time onward the 'Round City' was gradually more and more eclipsed, and there are now no traces of it. From the tenth century onwards the Baghdad Caliphs, although still recognized in most Mohammedan countries as the religious heads of the Moslem faith, gradually lost the greater part of their political power, and Baghdad in consequence was on the way to becoming little more than a provincial capital; at the close of the twelfth century the W. city is described as being almost in ruins, while the E. town contained large uninhabited spaces. In 1258 Mongols under a grandson of the great Jengiz took and plundered the city: the Abbasid dynasty was extinguished and the religious importance of Baghdad passed away. These Mongols retained possession of the town until ousted at the

end of the fourteenth century by Tatars under Timur Lang. In the fifteenth century it passed from the possession of one Mongol horde to another until the Persians occupied it in A.D. 1508. Thenceforward its possession was disputed by Persians and Turks until it was finally taken by the latter under Murad IV in 1638. From the first part of the eighteenth to the first part of the nineteenth century it was the capital of a practically independent *pashalik*, but from that time the authority of Constantinople was reasserted. Till 1884 the Baghdad *Vilayet* comprised the whole of Turkish Irak, but since then the southern portion has been separately established as the *Vilayet* of Basra.

Kazimain (called Kāzimīyeh by the Turks and known also as Imām Mūsa), on the r. bank of the Tigris about 3 m. from Baghdad. Pop. about 8,000. Bridge of 21 boats, carrying road to Mo'adhdham, which is about 1½ m. E. of bridge, joins road to Baghdad—Samarra. Horse-tramway to Baghdad (for routes see under Baghdad).

All the inhabitants are Mohammedans, and about seven-eighths are Shiahs, 1,000 being Persians: 200 (1908) British subjects, Indian or of Indian descent.

The town has grown up round the sanctuary, where are buried the seventh and ninth Shiah Imāms: there is a large and magnificent Shiah mosque. Pilgrims passing from Samarra to Nejef stop here to pay their respects to the shrine, and in the cold weather largely increase the population. It is an unhealthy place, partly owing to the passage through it of nearly all the Shiah corpses sent from Persia to be buried at the holy places of Nejef and Kerbela. Ophthalmic and venereal diseases are prevalent.

Kazimain is the capital of the Kazimain *Kaza* of the *Sanjaq* of Bagndad: the *Kaza* includes the country S. of Baghdad from the Tigris to the Euphrates.

Mo'adhdham (also called A'Dhamīyeh), on the l. bank of the Tigris about 2 m. from Baghdad Citadel. Pop. about 2,000. Bridge of 21 boats, carrying road to Kazimain. A short distance E. of the town is *Route* 25 a (ii), see vol. iii, p. 144. The road to Baghdad is unmetalled and very rough: hackney carriages and omnibuses drawn by four mules ply between Mo'adhdham and Baghdad.

For the important tanneries of Mo'adhdham see under Baghdad above: there are market-gardens here and a small bazaar.

The inhabitants are almost all Sunnis: some good houses on the river bank are the villas of wealthy inhabitants of Baghdad.

The town owes its importance mainly to the tomb of Abu Hanifa, a shrine with a tiled dome. He was a historian and contemporary

of the Caliph Mansūr (second half of the eighth century), and founder of one of the four orthodox Sunni sects. The office of *Matawalli* of this shrine is hereditary in a local family.

Mo'adhdham is the head-quarters of a *Nahiye* in the Baghdad *Kaza*, and is the residence of a Mudir.

BASRA. On the r. bank of the Shatt el-'Arab, 69¾ m. by river from the Persian Gulf. Pop., town and suburbs, 80,000 (Consular report, 1914). Wireless station, P.O., T. (Fāo—Basra) now (1915) connected with Mohammareh across the river. Before the war there were two lines from Basra to Baghdad: (*a*) *via* Kurna and Kut el-Amara, (*b*) *via* Nāsirīyeh and Hilla.

River Routes.—

(i) To **Mohammareh** and **Persian Gulf.** (See *Route* I A.)
(ii) To **Kurna.** (See *Route* I B.)
(iii) To **Nāsirīyeh.** (See *Route* IV A.)

Land Routes.—

(i) To **Fāo.** (See *Route* 1.)
(ii) To **Kurna.** (See *Route* 2.)
(iii) To **Mohammareh.** (See *Route* 3.)
(iv) To **Hawīzeh** and **Dizfūl.** (See *Route* 7.)
(v) To **Hā'il.** (See under *Route* 24.)

General Description.—The main part of the town (Basra proper) lies about 2 m. back from the river, from which the tops of its minarets are visible. Along the river front are a number of large private houses, some of which belong to Europeans, the offices, sheds, and wharves of various firms, the late British and German Consulates, and the Turkish custom-house. The German Consulate lay about ¾ m., and the British Consulate about 1 m., above Khōrah Creek. The premises of Messrs. Lynch lie immediately below the former British Consulate.

Two large creeks, the Nahr Ashar and the Nahr Khandaq, leave the r. bank of the river 400 and 1,100 yds. respectively above the British Consulate. They run in a general SSW. direction for about 3 m. Their width is about 50 yds. at the entrance, and gradually diminishes. The mouth of the Nahr Ashar, which leads to the main town, is marked by the large Turkish custom-house which is situated on its N. side, while to S. of it is a workshop, formerly belonging to the *Dā'irat es-Sanīyeh*, in which there were a few machine-tools, and where small castings could be made and ordinary engineering repairs

executed. Immediately opposite the Turkish custom-house on the l. bank of the Shatt el-'Arab is the former Turkish Marine Hospital. On the spit between the Ashar and Khandaq creeks, called Dōb, a little way back from the Shatt el-'Arab, is the large suburb of Maqam or Ashar, the former name being that by which it is generally known, while the latter is that given to it by the Turks. Ashar suburb is approached by the creek of the same name, on the n. bank of which it lies. It contains shops, cafés, and a considerable population. On the SE. side of this suburb the Ashar Creek is crossed by a wooden bridge passable for vehicles: on the NW. side towards the Khandaq Creek lie the former Turkish barracks. The Khandaq Creek in the neighbourhood of its mouth is the centre of the grain trade. It is lined with stores and dépôts, and many *maheilehs* and other sailing craft lie moored at its entrance. At ¾ m. up the creek, on its n. bank, is a dry dock which belonged to the *Dā'irat es-Sanīyeh*.

Passenger *bellams* ply on the Ashar Creek from the Shatt el-'Arab to the main town, and there is also a road for vehicles (the Strand) along its S. bank. Along this road are numerous large houses belonging to Europeans or natives.

On the outskirts of Basra proper, and close to the Ashar Creek, is the *serai* or principal group of Government buildings. The main town, which stretches up the Ashar Creek for about 1 m. to the bridge called the Jisr el-Ghurbān, was before the war unlighted, unpaved, and notoriously insanitary. The main bazaar runs near the Ashar Creek southwards through the busiest part of the town to a suburb called Mishraq: it is about ¾ m. long, and is built of brick and roofed all the way. At the N. end are a few shops which deal in European commodities. In Mishraq is the mosque of Sheikh 'Abdallah Bāsh A'yan; from the minaret a good view can be obtained of the town and surrounding palm-groves.

Just below the Jisr el-Ghurbān mentioned above are some of the best native residential houses, occupied by officials and rich merchants.

The walls and gates of the town proper, which till recently existed in a dilapidated state, have now practically disappeared. The better houses in the residential quarters are mostly built of soft, yellow burnt brick, but timber is often used for the upper stories.

The low ground between Basra and Zobeir is protected against floods from the Euphrates by the Sha'aibeh *bund* (built 1915–16), which starts at Magil and runs for about 10½ m. to the edge of the high ground E. of the tomb of Imām Anas. It is 6½–8 ft. high and 8–10 ft. wide on top. At about 1 m. from Magil another new *bund* diverges S. to the neighbourhood of the Zobeir gate (about 3 m.),

continuing thence towards the high ground at Zobeir. The Nāsiriyeh railway goes along it.

Anchorage and Landing.—See *Route* I A, m. 69¾.

Climate and Hygiene.—In December and January the weather at Basra is cold, sometimes with frost at night. The months of July, August, and September are intensely hot, and the population lives largely in underground rooms. The rest of the year resembles the spring and summer of Southern Europe. The greatest heat experienced in summer is ordinarily about 112° F., and in winter the thermometer falls to 35° or lower. The hottest weather is generally in July, the coldest in January.

The climate is injurious in summer and malaria prevails all the year round. An outbreak of bubonic plague occurred in 1910, and epidemics of cholera in 1910 and 1911. Before the present war the native population used the Ashar Creek for drinking-water and also as a sewer.

Supplies and Commerce.—Wheat, barley, and rice are locally available in normal times. The amounts vary in different years. Dates are abundant, especially in September. Vegetables, poor in quality, can be procured at Zobeir. Fruit is plentiful. Beef is scanty and poor in quality, but sheep are numerous.

The best water is from the open stream of the Shatt el-'Arab, but this is not wholesome owing to drainage from swampy areas. The water from the Ashar Canal is drunk by the poorer classes, but as they are said to use the canal as 'wash-tub, bath, dustbin, and cesspool' it had better be avoided. Norton tube-wells would be useful at any camps away from the river, and their use was recommended after the 1857 expedition to Mohammareh (p. 414). Watering animals in the river is difficult as the banks are shelving and muddy. Pumps with a length of pipe to run the water into troughs should be used.

Date-trees are difficult to fell and too valuable for fuel. A small prickly shrub called *shōk* grows outside the town. Coal is stored for river steamers; average stock with Gray, Mackenzie & Co., about 800 tons.

For transport at Basra in normal times 200 camels could be obtained (a large number could also probably be secured from Zobeir), 200 donkeys, and 1,000 horses, including 200 pack-horses.

Basra, besides having a local trade in dates and grain, is the port of Baghdad, which is the chief distributing centre in Mesopotamia. Practically all goods consigned to the interior are included in the shipping returns of Basra, whose imports and exports constitute the foreign trade of Irak and to some extent of Western

Persia also. Under the Caliphates Basra was a clearing-house where traders from Africa, India, and the Far East met to transact business with the Moslem world and with Europe. The importance of Basra began to decline with the discovery of the Cape of Good Hope, and became still less when the Suez Canal was opened. At the present time it shows signs of recovery, although it was adversely affected by the political and economic crisis through which Turkey passed in 1913, aggravated by severe agricultural depression consequent on the poor grain crops of that year.

In 1911 the total value of imports into the port of Basra was £2,855,677, that of exports £2,525,847. In 1912 imports were valued at £2,637,809, and exports at £3,246,560. In 1913 the value of imports was £3,899,273, that of exports £1,939,259. In these figures is included the value of goods imported to or exported from Baghdad by way of Basra.

It will be seen that in 1911 there was an excess of imports over exports of about £330,000; in 1912, an excess of exports over imports of about £608,000; and in 1913, owing to the failure of the cereal crops and to the large imports in connexion with the Baghdad Railway, an excess of imports over exports of about £1,960,000.

The principal imports were cotton goods, woollen cloths, loaf and crystal sugar, date-box wood and planks, yarn and twist, machinery, coffee and tea, copper, iron and steel (for the Baghdad Railway), petroleum, gunnies. In 1913, when the rice crop failed, much rice was imported from India.

The principal exports were dates, cereals (barley, wheat, and rice: very variable), seeds, wool, *ghi*, liquorice, opium (from Persia), gall-nuts (from Kurdistan), hides and skins, carpets, horses (from Arabia). Dates are the most valuable export, and are sent chiefly to England and America. The export of liquorice is also important. The root, which grows especially on the Tigris banks, is collected in the winter months, when it contains most juice, and, after being weighed and cured at the receiving stations, it is forwarded to Basra, where it is baled by hydraulic power. The export of cereals in the three years 1911–13 varied from 231,171 tons in a good year (1912) to 44,283 tons in 1913, when the harvest was bad. The cereal exported in the largest quantities is barley. See further vol. i, chap. xii.

The date trade supplies the only local export of any importance, most of the business done being in the way of agency or forwarding. The Euphrates valley as far as Hilla probably draws directly on Basra for its imported commodities, but this is perhaps the limit of the importance of Basra as a pivot of internal trade. The key to

Baghdad trade is to be found in the ocean trade prevailing at Basra and the river freights between Basra and Baghdad.

British interests in Basra date from the establishment of the English Factory by the East India Company more than 150 years ago. In 1913 the number of steam vessels of all nationalities that entered and cleared the port of Basra was 195, with a net tonnage of 327,913, and of these 163 were British, having a net tonnage of 254,714. The number of sailing vessels was 250 (19,026 tons), of which 137 were British (11,595 tons).

Despite its commercial importance the Turkish Government had not constructed wharves or pontoons at Basra, leaving ships to load and unload by means of lighters.

The following lines of ocean steamers called regularly at Basra :—

The British India Steam Navigation Co., Ltd.
The Ellerman & Bucknall Steamship Co., Ltd.
The Strick Line.
Messrs. Marcus Samuel & Co.
Messrs. Andrew Weir & Co.
The Arab Steamers, Ltd.
The Bombay and Persia Steam Navigation Co., Ltd.
Haji Sultān 'Ali Shustari Line.
The Hamburg-Amerika Line.
The Russian Steamship Navigation Co.

Numerous steamers were chartered annually for the export of dates at harvests.

During the years preceding the present war the following lines of river-steamers navigated the Shatt el-'Arab and Tigris up to Baghdad :—

The Euphrates and Tigris Steam Navigation Company (Messrs. Lynch Bros.).
The Idarah Nahriyah, a Turkish company.

These companies were amalgamated in 1914 under the name 'Mackay, Lynch & Co.'

Trade on the Tigris was largely carried on in sailing vessels (*maheilehs*). For these craft see vol. i, p. 166.

The European firms with offices at Basra are :—

Messrs. Lynch Bros. (Merchants: carrying-trade on the Tigris and Kārūn).
Messrs. Gray, Mackenzie & Co. (Merchants: importers and exporters: agents for the British India Steam Navigation Co. and Ellerman & Bucknall Steamship Lines).
Messrs. Strick, Scott & Co. (Merchants: importers and exporters, shipowners: agents for the Anglo-Persian Oil Company).

Messrs. MacAndrew, Forbes & Co. (American firm; exporters of liquorice).

Basra Trading Company (British firm; exporters of dates and grain).

Messrs. Wonckhaus & Co. (German firm; agents for Hamburg-Amerika Line).

Russian Steamship and Trading Company, of Odessa, had an agency here.

Messrs. Asfar & Co. are an important native Christian firm.

There is a branch of the Imperial Ottoman Bank at Basra.

Inhabitants.—The population is mainly composed of sedentary Arabs. There are also several thousand Persians, a considerable Jewish settlement, and a small colony of resident Indians. Negroes of servile origin are fairly numerous. In 1913 there was a floating population of the labouring class which numbered some 10,000 persons, variously engaged in the grain-trade of the port.

The Sunni and Shiah sects are said to be about equally balanced in numbers. The few Indian Mohammedans are mostly Sunnis. Some of the wealthiest merchants are Jews.

Administration and Authorities.—Basra town was the head-quarters of the Turkish *Vilayet* of the same name, and the seat of a Vali. It also formed a *Nahiye* in the Basra *Kaza.* The latter area was under the direct charge of the Vali. The city was nominally under a powerless and inefficient municipal council. The *Dā'irat es-Sanīyeh* had offices here, including a Mamur and subordinate staff, who control the Shatt el-'Arab properties. There was a local Sanīyeh committee. The principal offices of the navigation branch of this department were established here under a director subordinate to the central committee in Baghdad. There was a Mudir of customs under the Director-General of Customs at Baghdad. Shipping and river conservancy were in the hands of a harbour-master.

The Turkish garrison consisted normally of two battalions of infantry, with some artillery and a detachment of engineers. A naval commodore was stationed here in command of two gun-boats.

One of the most important personages in Basra before the war was the unscrupulous Seyyd Talib Bey (*Naqībzādeh*), who had great influence among the Arabs of the town. He is said to have terrorized Basra with a band of armed men.

In 1914 there were at Basra British, French, Russian, American, Dutch, Persian, and German consuls.

History.—Old Basra, the ruins of which lie about 8 m. SW. by W. of the modern town, and extend for about 3 m. in the same direction

up to the walls of Zobeir, was founded by the Caliph Omar in A. D. 638. In the Middle Ages Old Basra was famous as a seat of learning and as the port for the sea-borne commerce between the flourishing Mesopotamia of the Caliphate and the countries of the Farther East. (The *Arabian Nights* make Sinbad the Sailor start from Basra on his voyages.) The city was connected with the Shatt el-'Arab by the much more ancient town of Ubullah, which is believed to have stood on the site of the present Maqam.

Basra suffered from the rapid decline of Mesopotamian prosperity due to the Mongol invasions of the thirteenth and fourteenth centuries. The old city was eventually abandoned, and New Basra took its place. In the seventeenth century Basra was occasionally visited by English merchants engaged in the Indian trade.

In 1668 Basra (on its present site) was conquered by the Turks, and, except for short intervals in the eighteenth century when it was held first by Persians and then by Muntefiq Arabs, it remained in their hands till 1914. Under the Muntefiq Arabs the population of Basra had sunk to a few thousands. The town apparently owed its revival mainly to the development of trade with British India in the nineteenth century: a development made possible by the policing of the Persian Gulf by the British Government, and by its influence in Irak. In recent years the advantages and disadvantages of Basra as a possible terminus for the Baghdad Railway have been under consideration. It was at first believed that the commercial value of its position would be largely discounted by the cost of maintaining a depth of water on the Shatt el-'Arab bar sufficient to allow large ocean-going steamers to enter the river at any time. It has lately been reported, however, that at a moderate outlay the bar could be dredged so as to allow the passage of vessels drawing 25–26 ft.

BURUJIRD. The capital of the province of Burujird, Persia. Alt. 5,050 ft. (5,315 ft. according to another authority). Pop. estimated at 22,000–25,000. P.O. T. (wires reported frequently cut, and communication completely interrupted, in 1911–12).

Routes.—

(i) To **Hamadan.** (See *Routes in Persia*, vol. ii, Routes 66, 67.)
(ii) To **Sultanābād** and **Kum.** (See *Routes in Persia*, vol. ii, Route 59.)
(iii) To **Khurramābād.** (See *Route* 11 f.)
(iv) To **Kangavar.** (See *Routes in Persia*, vol. ii, Routes 68, 70.)
(v) To **Kirmanshah.** (See *Route* 11 g.)

General Description.—Burujird is situated in the fertile plain of Silakhor on the river Tahīj, a tributary of the Dizfūl river, and is enveloped in gardens with picturesque summer-houses. There are many thriving villages on the hills above the town. Burujird was formerly surrounded by walls and a ditch, but the walls have for the most part fallen, and the ditch is dry and under cultivation. Many houses are ruined.

Supplies and Commerce.—The bazaars, from which the caravanserais are entered, are small. The water-supply seems to be unlimited throughout the valley, and being very near the surface could be easily procured even in dry years. Grapes and melons are plentiful, and all kinds of supplies are to be obtained in the bazaars. The town had formerly a large manufacture of printed cotton goods, but this has declined. Cotton is grown in the neighbourhood. Carpets, felts, and the uppers of native shoes are mentioned as other manufactures, and opium, almonds, and gum tragacanth are exported. The town is an important road-centre, and under settled conditions should be capable of large commercial development.

History.—In the years preceding the war Burujird was almost continually in a state of unrest. In January 1911 the Lurs rose against the governor-general because he had executed a relative of their chiefs. In 1911 the place was the scene of some fighting during Sālār ed-Dauleh's rebellion.

Administration.—As the capital of a province Burujird has been the seat of a governor-general, but the province has sometimes been united with that of Luristan. A regiment of infantry (nominally 1,000 men, probably about 200–300 in fact) is quartered here in normal times, with a few gunners, and it has been reported that there are six Austrian brass guns and 700 muzzle-loading muskets. The town is the place of embodiment of the Savareh-i-Bakhtiyāri and Yar Ahmadi, nominally 1,000 strong, but it is doubtful if they actually number 200.

DIWĀNIYEH. About midway between Samāweh and Hilla. Pop. 4,000 (1908), but then decreasing. P.O. T.: single line to Samāweh, double line to Hilla. Bridge of 9 boats.

Routes.—

(i) To **Samāweh.** (See *Route* 14.)

(ii) To **Hilla.** (See *Route* 14.)

General Description.—About four-fifths of the town lie on the l. bank: half of this main quarter is composed of brick houses, and

here are the *serai* and the barracks (for about 1 battalion). The town is surrounded by open desert beyond the date plantations, and is open and undefended except by a ruinous wall on l. bank.

In the neighbourhood of Diwāniyeh the average breadth of the river-bed is 90 to 95 yds., and the deepest part is almost always within 10 ft. of the steep bank which borders the outside of curves. The height of the banks above the bottom of the river-bed is 13 to 16 ft.

Supplies and Commerce.—The town itself has only a few date-trees, and for supplies depends on outlying places connected with it. Dates, wheat, barley, and rice are cultivated in the *Kaza*, wherever (as for instance on the **Dighāreh** Canal) the inhabitants have not been compelled to migrate by lack of water. The water-supply of the town comes partly from the river, partly from wells, which are sweet. The trade of the place is insignificant: there were (1908) about 200 shops, 4 khans, and 4 grain stores.

Inhabitants.—All but a few of the Arabs are Shiahs, and besides the Arabs there are only a few Turks, Jews, Persians, and Christians.

Administration and Authorities.—**Diwāniyeh** is the head-quarters of a *Kaza* and *Sanjaq* in the *Vilayet* of Baghdad with the usual officials. The Turks kept a small garrison, usually employed in collecting the revenue of the neighbourhood.

DIZFŪL. On the l. bank of the Āb-i-Diz about 35 m. NW. of Shushtar. Pop. about 15,000 (?). P.O. (Persian). T. (communication with Shushtar, Ahwāz, and Mohammareh).

River Route.—The Āb-i-Diz has been navigated to Umm el-Wāwiyeh, 20 m. from Dizfūl (see *Route* II A).

Land Routes.—

(i) To **Shushtar** and **Ahwāz,** and **Mohammareh.** (See *Route* 6 c.)
(ii) To **Basra.** (See *Route* 7.)
(iii) To **Amara.** (See *Route* 8 b.)
(iv) To **Zorbatiyeh.** (See *Route* 10 a.)
(v) To **Khurramābād.** (See *Routes* 11 a, b, c.)

Dizfūl is situated on cliffs rising about 100 ft. above the river-bed, and extends about 1½ m. along the bank. The houses are closely packed, and the streets narrow, crooked, and dirty. Stone and brick bridge, in bad repair, with roadway 16 ft. wide, towards S. extremity of town. Supplies (meat and grain) usually plentiful. Fuel plentiful. Good grazing in spring. Centre of mule-supply. Before the war it was thought that 300 camels and 1,000 mules could be hired here at short notice. Working mules could be purchased up to 200. Mule-market for young stock (up to 2½ years); the animals sold are

bred mostly by the Lurs, especially the Sagwand. (See further Appendix E.) In addition to this trade, the town is (or has been) the seat of considerable manufacturing industries in textile, steel and iron goods, indigo, &c.

The inhabitants are all Shiahs, and many of them follow religious vocations; there are numerous mosques and shrines. The most prominent sections of the population are the Seyyids, and the Tujjar or merchants. There is a Persian deputy-governor, but the real administrative power is in the hands of the religious leaders, of whom the most important are the *Mujtahids.*

FELLŪJEH. On the l. bank of the Euphrates, 43½ m. W. of Baghdad. Pop. (1908) 600. Alt. 129 ft. A branch T.L. runs NNE. from W. end of the village (٣3½ m.) to join the line from Baghdad to Aleppo. The Baghdad—Aleppo T.L. (2 wires) crosses to r. bank ٢9 m. W. by N. of Fellūjeh, and then continues up r. bank.

River Routes.—For communication by the Euphrates see *Route* IV D, and vol. iii, *Route* IV E.

Land Routes.—

(i) To **Baghdad.** (See *Route* 22, and vol. iii, *Route* 46.)

(ii) To **Museyib.** (See *Route* 18.)

(iii) To **Ramādiyeh** by r. bank of the Euphrates. (See vol. iii, *Route* 46.)

(iv) There are various tracks on l. bank forming a fairly continuous line from Fellūjeh to above Ramādiyeh, but there is no regular through route.

General Description.—The village is on the l. bank, at the N. end of an inverted U bend. The up-stream arm of the U is about 2½ m. long. The **Sinthabaneh** Hills lie opposite, back from the r. bank. Behind these hills are old quarries of white stone, which are still worked (1907). The houses of Fellūjeh are of sun-dried bricks. There is an isolated house belonging to Kāzim Pasha. It stands on the r. bank near end of bridge. In Fellūjeh proper are a mosque, 2 or 3 khans, and a bazaar of about 30 shops. The khan on the r. bank is said to be dirty and uncomfortable. There is also a *serai.* The village is the seat of a Mudir.

Supplies.—There is some cultivation along the river. Some grain, fruit, and bread may be had. There are not many dates. Sometimes large flocks of sheep and goats are seen hereabouts. The nomadic Arabs, when they wander, take their camels and mares with them, but leave their sheep in the custody of the settled Arabs living near

the river. Drinking-water is supplied by wells or from the river. There is said (March 1896) to be good open ground on which to encamp outside Fellūjeh.

HILLA. On the Hilla Branch of the Euphrates, 11 m. by river below the bifurcation. Pop. (1908) about 30,000. P.O. T. (Basra—Hilla—Baghdad line: branch to Tawarīj—Kerbela). Bridge of 15 boats.

River Routes.—For communication by Euphrates with places above and below Hilla see *Routes* IV A, B, C, D.

Land Routes.—

(i) To **Samāweh** *via* Diwāniyeh. (See *Route* 14.)
(ii) To **Nejef.** (See *Route* 21 b.)
(iii) To **Kerbela** *via* Tawarīj. (See *Route* 15.)
(iv) To **Baghdad.** (See *Route* 21 b.)
(v) To **Bogheileh.** (See *Route* 20.)

General Description.—Hilla stands among date-groves on both banks of the river, which is here about 100 yds. wide. Before the construction of the new barrage the channel at Hilla was sometimes entirely dry in the l.w. season. The portion of the town on the r. bank is surrounded by a strong brick wall, 16 ft. high, with towers at intervals, now much out of repair. There is no town-wall on the l. bank, but several walled date-gardens. The principal part of the town (called Shāmiyeh as lying nearer the desert) stands on the r. bank: here are the barracks, well built of Babylonian bricks, forming the back of a large open square which fronts the river at the boat-bridge. The *serai* consists of a large block of buildings in good repair a little N. of the barracks. Other noticeable buildings in this quarter are a tall minaret in the centre and a large mosque outside the NW. gate on the road to Kerbela. Both this and the E. quarter (called Jezīreh, being situated in Mesopotamia) are largely constructed of bricks brought from the site of Babylon.

Supplies and Commerce.—The steady decline in the agricultural prosperity of Hilla, due to the failure of this arm of the river, makes it difficult to estimate local supplies, but in 1908 it was calculated that under favourable conditions supplies could be collected in a week as follows: 400 tons of wheat, 600 tons of barley, 100 tons of rice, 1,000 oxen and cows, 600 buffaloes, 300 horses, 1,000 donkeys, 50 mules, 700 camels, 5,000 sheep. Besides barley and wheat, dates and *ghi* were then being exported. Manchester goods, sugar, and coffee were imported. Arab saddles and felt used for rugs and horse-furniture were manufactured. There was a large covered bazaar con-

taining 2,000 shops: there were 120 grain stores, 18 khans, and a warehouse for the storage of petroleum. Before the construction of the new Hindiyeh Barrage, the people of Hilla had in l.w. to obtain drinking-water by digging holes in the river-bed to an average depth of 3 ft.

Inhabitants.—Of the inhabitants more than three-fourths are Shiah Arabs: the remainder are mostly Sunnis. There are 700 or 800 Persians, a few Oriental Christians, and Punjabi Indians.

Administration and Authorities.—Hilla is head-quarters of a *Kaza* in the *Sanjaq* of Diwāniyeh in the *Vilayet* of Baghdad, with the usual officials. It was, after Baghdad and Basra, the most important Turkish military station in Irak, and was a centre from which the Turks attempted to control the tribes of the surrounding marshes and deserts.

KERBELA. The greatest of the Shiah centres of pilgrimage, on the edge of the Syrian desert, about 55 m. SSW. of Baghdad, and about 20 m. W. of the Hindiyeh arm of the Euphrates.

Pop. perhaps about 50,000 (exclusive of a large floating population).

P.O. T. (before the war there was communication with Baghdad and Basra *via* Hilla, and by a branch line with Nejef).

Routes.—

(i) To **Baghdad.** (See *Route* 21 a.)
(ii) To **Hilla.** (See *Route* 15.)
(iii) To **Nejef.** (See *Route* 21 a.)
(iv) To **Ramādiyeh.** (See *Route* 17.)

General Description.—The town stands on the Huseiniyeh Canal, which flows from the Euphrates. The canal bifurcates at the NW. corner of the city, and of its two arms one runs off to the NW., and the other circles round the western side of the city. At the bifurcation the Huseiniyeh is spanned by a curious double bridge, passable for carts. On the N., S., and E. Kerbela is surrounded by cultivated lands, fruit gardens, and date-groves; and about 2 m. to the SE. begins the marsh known as the 'Ain el-Huseiniyeh, formed by water from the Huseiniyeh Canal and the Hindiyeh. On the W. the desert extends almost to the walls of the town. No general view of Kerbela can be obtained except from the towers and minarets of the Shiah shrines, which are not accessible to Europeans. The site of the town is on the whole level, but the ground is somewhat higher towards the NW. corner. Kerbela consists of an old town on the N., still walled on its eastern,

northern, and western sides, but open towards the S.—the side on which the new town adjoins it. The old town is crowded and irregularly built; the new is well laid out, with a broad main street running from N. to S., and is comparatively clean. A mile or more to the S. of the new town is the large mansion of a Punjabi Indian's family; it is known as Afzal Khān's Fort. The walls of the old town are of brick, 20–30 ft. high, with towers projecting at intervals as bastions. There are two tiers with loopholes, and in the inside is a banquette, supported by arches, which affords standing-room for the defenders of the upper tier. The perimeter of the walls is about 2 m. They are pierced by 5 gates, and about 25 towers still remain; but the whole work is now in bad repair.

Shrines.—The chief of the shrines which make Kerbela a centre of pilgrimage for the whole Shiah world is that of Husein, the son of 'Ali, which stands in the old town towards its western end. The interior is not accessible to Christians, but is known to consist of a large outer court, called the Sahn, with 7 gates, and of the Haram, or sanctuary proper, a building with a gilded dome flanked by two tall gilded minarets. A yet larger minaret of tile-work rises from one corner of the Sahn, and near it is a smaller Sahn thrown out from the Great Court. The tomb of Husein is in the Haram. The tomb of 'Abbās, half-brother of Husein, lies E. of Husein's tomb, nearer to the centre of the town; it has a dome of glazed brick and gilded minarets. Both the tomb of Husein and that of 'Abbās have treasuries, popularly supposed to contain vast wealth.

Less important shrines are the Kheimehgāh, a small building W. of Husein's tomb, marking the site of Husein's tent before the battle in which he was killed; the tomb of 'Aun, Husein's nephew, 7 m. NW. of Kerbela, on the road to Museyib; and that of Hurr, who deserted to Husein from the enemy, $3\frac{1}{2}$ m. to the NW.

Supplies and Commerce.—The bazaars are well provided with supplies of all kinds. The agricultural and garden produce of the environs is large, the lands along the canal being well cultivated, while the gardens near the city are extensive and productive. There is usually a large surplus of dates for export.

The water-supply is ordinarily from the canal, or, when that fails, from wells, numbers of which are sunk in the canal bed. The canal supply used to be uncertain, but the construction of the Hindiyeh Barrage should remove this defect. The well-water is brackish.

Kerbela is not a good place for the collection of transport. Mules cannot easily be got, and camels are not obtainable, except in autumn when the Bedouin are in the vicinity.

Some twenty shops dealt in European wares. There was a con-

siderable trade, the main exports being dates, skins and hides, wool and tobacco, as well as consecrated articles such as rosaries, praying tablets, &c. The chief imports were piece-goods, carpets, petroleum, candles, sugar, spices, coffee, and tea.

Inhabitants.—Of the fixed population three-fourths at least are Persian (or Balūchi), and almost the whole of the remainder Arabs. There are a few Turks and Jews, and about 1,200 British Indians. The Moslem population is almost entirely Shiah, and the *Mujtahids* are a numerous and influential body, though Kerbela is not so important as Nejef as a centre of Shiah culture and learning.

A number of residents in Kerbela received annuities from the Indian Government, which was trustee for some endowments made by British Indians.

The floating population consists of Shiah pilgrims and their attendants, who come in thousands every year, mainly in the cold weather. Many bring with them the corpses of relatives for burial; many come that they themselves may die and be buried in this holy spot. In normal times most of the pilgrims came from Persia and India.

Administration and Authorities.—Kerbela is the head-quarters of a *Sanjaq* and *Kaza* in the *Vilayet* of Baghdad. In addition to the Mutessarif, a Mudir of the Sanitary Department and a Mamur of the Tobacco Régie used to be stationed here.

The military garrison consisted nominally of one regular battalion, but there used rarely to be more than 240 men actually in the city, where they were quartered in a hired caravanserai.

A British vice-consul (an Indian) and a representative of the Persian Government were maintained here before the war.

History.—The battle in which Husein, the son of ʿAli, was slain by the troops of the Caliph Yazid was fought in 680 A. D. To this event Kerbela owes its importance, for the martyrdom of Husein has exercised perhaps a more profound influence on Shiah religious feeling than any other event in the history of Islam. Kerbela has come to be regarded as the holiest of all the Shiah holy places.

KHURRAMĀBĀD. The capital of Luristan, Persia. Alt. variously estimated from 3,875 to 4,700 ft. Pop. variously estimated from 2,000 upwards: perhaps about 6,000. T.

Routes.—

To **Burujird.** (See *Route* 11 g.)

To **Isfahan.** (See *Routes in Persia*, vol. iii, Route 83, &c.)

To **Dizfūl.** (See *Routes* 11 a, b.)
To **Deh Bālā.** (See *Route* 11 d.)
To **Kirmanshah.** (See *Route* 11 e.)

General Description.—The town is situated on the r. bank of the Kashgān river or Āb-i-Khurramābād, the ruins of a former city (see *History*, below) lying on the l. bank. The river here is broad and usually shallow, and fordable everywhere, but at times it carries a large volume of water. A steep isolated rock above the town is crowned by the ruined Diz-i-Siyeh (black castle). The town is poorly built, with houses mainly of mud. It is of no military strength. There is a camping-ground, suitable for a brigade, W. of the town.

Climate.—The summer is very hot, and from June to September the inhabitants are away on the hills. Heavy rains fall in October, and the winter is severe, with a considerable fall of snow. The transition from winter to summer is rapid.

Supplies and Commerce.—The bazaar is poor and ill-supplied, and the surrounding country, though fertile, is insufficiently cultivated with a little rice, wheat, and barley. Fruit and vegetables, however, are abundant in summer. Khurramābād is a wool-mart for the Lurs, but has little industry.

History.—The site on the l. bank has been occupied from very early times. A high circular brick tower, an aqueduct, and a ruined bridge are among the ancient remains. When the Arabs overran Persia Khurramābād became a point of strategic importance. From about 1100 to 1600 it was the capital of the Atabegs of Luristan.

Administration.—The town is the seat of the Governor of Luristan, whose residence is at the foot of the castle walls.

KIFL. On the l. bank of the Hindiyeh arm of the Euphrates, immediately above the bifurcation of the Kūfeh and Shāmiyeh channels. Pop. about 2,000. T.L. Nejef—Hilla passes the town. Ferry.

River Routes.—For communication by the channels of the Euphrates between Kifl and other places on the river see *Routes* IV A, B, C, D.

Land Routes—
(i) To **Nejef.** (See *Route* 21 a.)
(ii) To **Hilla.** (See *Route* 21 b.)

General Description.—Kifl is surrounded on three sides by creeks from the river, which are not often more than 3 or 5 ft. deep; some of them extend for several miles. At h.w. the village is surrounded by floods, and is then connected with the mainland only by a winding

embankment about 3 ft. broad and ¼ m. long. In 1908 the town consisted of about 70 houses of masonry and a large number of reed and mud huts: the village is filthy. It was reported in 1908 that there was an excellent landmark to all the country-side in a solitary minaret, which became visible on the road a few miles after leaving Nejef, but it was in an insecure condition. The shrine of Ezekiel stands in the middle of the village in a courtyard surrounded by a wall within which most of the Jews of Kifl live.

Supplies and Commerce.—There is some cultivation: a good many date plantations, especially on the E. side of the Shāmiyeh Channel. Trade is chiefly with Hilla town and Tawarīj (Hindiyeh). There is a bazaar.

Inhabitants.—About 200 are Jews, the remainder Arabs. Some of the Shiah pilgrims who pass between Kerbela and Nejef come by water and stop here, but the place is mainly important as the resort of Jewish pilgrims, who visit the tomb of Hizqil or Ezekiel, mainly at Pentecost. Many Jewish corpses are sent from a distance for interment.

Administration and Authorities.—Kifl is the head-quarters of a *Nahiye* in the *Kaza* of Hindiyeh.

KIRMANSHAH. The capital of the province of Kirmanshah, Persia, which lies to the N. of Luristan. Alt. 5,100 ft. Pop. estimated from 40,000 upwards; one authority gives 60,000 as a minimum, having regard to the excessive crowding of the Kurdish inhabitants. P.O. T. (Baghdad—Teheran line).

Routes.—

To **Senna.** (See *Routes in Persia*, vol. ii, Route 78, &c.)
To **Hamadan.** (See *Routes in Persia*, vol. ii, Routes 71, 84.)
To **Khurramābād.** (See *Route* 11 e.)
To **Kut el-Amara.** (See *Route* 9.)
To **Baghdad.** (See vol. iii of this handbook, *Routes* 28 a, b.)
To **Suleimaniyeh.** (See vol. iii of this handbook, *Route* 35.)

General Description.—Kirmanshah is situated on an undulating plain some 30 m. long from E. to W. and 6 m. broad, with many small villages. Fine gardens lie to the S. and N. of the town. Kirmanshah was formerly walled, but the fortifications have so far decayed that the town is now open, and the gates, though their names survive in common use, have disappeared. The streets are mostly narrow and tortuous, and the houses of the common people are mean buildings of mud, but there are some comfortable houses

of merchants, and some fair public buildings, a governor's palace, barracks, arsenal, &c.

Climate and Hygiene.—The climate in summer is mild, but as a rule not excessively hot, though sometimes the inhabitants withdraw to the hills at that season. The winter is very cold, but there is not very much snow. The climate, being dry, is healthy. Fever, small-pox, and diphtheria, however, are not uncommon, and in recent years cholera, and, earlier, plague, have occurred. The water-supply is unsatisfactory (see below).

Supplies and Commerce.—The bazaar is large and well stocked, and all supplies are available in quantity. The water-supply is ample, but it runs from house to house, and is contaminated: it is also heavy and indigestible, and is liable to cause diarrhœa and dysentery. Kirmanshah is an important trading-centre, and has a customs-station, which, under Belgian direction from 1899, has yielded largely-increasing returns. This station is the centre for the administration of a number of others along the frontier, along which armed guards are maintained to prevent smuggling.

Inhabitants.—The inhabitants are principally Kurds, and the authority of their chiefs, some of whom reside in the town, is considerable both here and in the neighbourhood. The most common language is Kurdish, but as it is spoken here many Persian words are mixed with it. The Persian nobles in the town have little influence. There are a few Ottoman Jews, in whose hands is most of the foreign import and export trade. There are commercial agents representing merchants of Baghdad, Hamadan, Isfahan, Kashan, Yezd, and other places. The inhabitants are mostly of the Shiah sect. Large numbers of pilgrims pass through the town on their way to or from Kerbela, Nejef, and Kazimain.

History.—Kirmanshah dates from the later part of the fourth century, but the earliest town probably did not occupy the present site. The place was the scene of much fighting in 1770–80, when the governor, Mirza Mohammed Taki, proclaimed himself independent. About the close of the nineteenth century the governor, Ala ed-Dauleh, had the province well under control, and he was responsible for many improvements in the town. In 1911 began the rebellion of Sālār ed-Dauleh, brother of the ex-Shah Mohammed Ali, and in and after that year Kirmanshah was more than once occupied and reoccupied by his forces and by government troops.

Administration.—The town is the seat of the governor of the province of Kirmanshah, with the customary staff and bodyguard. There is a Turkish consulate-general, and British and Russian consulates were established in 1904.

KOWEIT. On the NW. shore of the Persian Gulf, about ϒ80 m. SSE. of Basra. Pop. 30,000 to 40,000. Other estimates place the number somewhat higher. 3,000 houses, or rather more.

Routes.—

To **Zobeir** and **Umm Qasr.** (See *Routes* 23 c and d.)

To **Boreidah.** (See *Route* 24 a (i).)

To **Hofūf** and **Qatīf.** (See *Route* 24 b.)

General Description.—The town lies on a small projection or tongue of land, which terminates in Ras 'Ajūzeh, on the southern side of a great bay of the same name as the town. The bay is 20 m. long E. and W., and has a maximum breadth of 10 m. N. and S., in the greater part of which there is anchorage, with good holding ground. In a N. wind there is a considerable sea in the southern part of the bay, but not enough to distress a large vessel. The depths of the harbour are from 10 to 16 fathoms off the Ras el-Ardh; from 5 to 9 fathoms off Ras 'Ajūzeh; 4½ to 5 fathoms northward of Ras 'Usheirij; and from 5½ to 6 fathoms in Dohāt Kādhimeh, shoaling to 4 fathoms near the narrows at its head. The town extends about 1 m. along the beach. It is provided with numerous substantial stone breakwaters which form tidal harbours for native craft. The beach dries out to a considerable distance, and landing when the tide is out is not a pleasant operation; ponies are taken out and are mounted from the boat; failing which it would be necessary to wade a long way. At high water the sea washes up to the front row of houses, and landing from boats on any of the sea-walls is easy.

The site of the town is generally flat, but the SW. quarter stands rather higher than the rest, and has steep lanes leading up to it from the beach. The streets are irregular and winding, and many are blind alleys. Most houses have only a ground floor, but appear higher owing to the parapet-wall round the roof.

The town is comparatively clean, well built, and prosperous in appearance, with many solid stone houses, others being built of sun-dried brick. The main bazaar is broad and open, clean and busy. It lies about the middle of the town at right angles to the sea.

During the last forty years the town has completely outgrown its old walls. On the S. side there has grown up a long suburb called Murqāb, which is the point of arrival and departure for the caravans trading between Koweit and the interior. Here may be seen strings of camels; and here, too, the Bedouin mostly congregate, camp, and transact their business, as, if armed, they are not allowed in the town.

There are some 500 shops, 3 caravanserais, 6 coffee-houses, 3 schools, and 20–30 mosques, 4 of which are *Jāmis* or Friday congregational mosques. There are also numerous warehouses and stores.

There has been a British Residency at Koweit for some years.

Climate and Hygiene.—The climate of Koweit is said to compare favourably with that of most Persian Gulf ports. It has been stated that in December and January the climate is perfect, bracing in the mornings and evenings, and never unpleasantly hot. On the other hand, a 1908 Report says that it is sometimes bitterly cold in winter, especially when a *Shamal* (N. wind) is blowing. In summer the prevailing wind which blows from the NW. is somewhat tempered by crossing 10 m. of water in the bay, and the clean desert sand cools down rapidly at night. The air, however, except in a breeze, is laden with vile odours, chiefly that of fish-oil.

Fever is practically unknown, and dysentery and ophthalmia are rare. The sanitary system is rudimentary, the sewage being deposited in large, open public cesspools in the various quarters.

Supplies and Commerce.—Water, reported to be of indifferent quality, is obtained from the following sources:—

(1) Scattered wells SW. of the town, and 4,000 to 5,000 yds. ENE. of Bandar Showeikh. Most of the water for the town is got from these wells.

(2) Wells with abundance of water about 3 m. SSE. of Koweit.

(3) Wells at Ras 'Ajūzeh, E. of the town.

(4) Wells at Jahrah.

Water is also brought from the Shatt el-'Arab, and a tank steamer has recently been acquired by the Sheikh for this purpose. Better water, however, is procurable from the wells of Qasr es-Sirreh, 8 m. SSE. of Koweit, or from those of Mushrif, 2 m. E. of Qasr es-Sirreh.

Forage and vegetables are mostly brought from Jahrah or imported from abroad. There is sparse grazing for herds of the Bedouin during the winter months and there is some pasture for camels, but otherwise the place has no agricultural resources. There are no date plantations or cultivated fields round Koweit. Most kinds of food-stuffs can in normal times be procured in the town.

Koweit is the only port for the Jebel Shammār district of Central Arabia. The population is almost entirely engaged in pearl-diving, fishing, and the coastal trade. Some 500 boats are engaged in the pearl industry, their size varying from 30 to 300 tons. A large number of the pearl-fishers now visit the Ceylon pearl banks in winter. The fish weirs on the flat beach are very conspicuous.

Most of the carrying trade is with the upper and western part of the Persian Gulf and the Shatt el-'Arab; its ordinary limits are Qatīf on the S. and Basra on the N., and the boats engaged in it are seldom absent from Koweit more than two months at a time. The

sea-going cargo-boats number 30–40, some of them being of as much as 1,000 tons. There are besides a number of small coasters. About 300 carpenters in Koweit gain a livelihood by boat-building. All the material is imported from India.

The chief imports, in order of value, are arms and ammunition, rice, Indian and American piece-goods, tobacco, wet dates, wheat, coffee, barley, and sugar. It is reported that most of the rice, wheat, coffee, barley, and American piece-goods are re-exported to Nejd. Exports, in order of value, include tobacco, wheat, pearls, wet dates, and *ghi*. There is also a small export of lambskins to Russia *via* Baghdad, and a more important trade in horses to India.

Juss is manufactured in a gypsiferous tract to the S. of the suburb of Murqāb.

As elsewhere in Arabia, the Maria Theresa dollar, 'real' (the value of which is about 1 rupee 8 annas), may be considered the standard medium of exchange, while Persian *qran* and Turkish copper coins are also met with. English sovereigns are occasionally met with, and the Indian rupee is accepted. Bills can be obtained on Basra, Bushire, and Bombay, and also, it is said, on Nejd.

Inhabitants.—The inhabitants are Mohammedan (mostly Sunnis) and, like most Arabs, tolerant to others and not over-rigid to themselves. The strict Wahhābī faith is prescribed, and the efforts of Nejd have been uniformly unsuccessful in making proselytes.

The great majority are Arabs belonging to the 'Atub, Hawāzin, Rusheideh, Beni Khālid, 'Ajmān, Dawasir, Anazeh, and Dhafīr tribes, besides Hasawīyeh from Hasa and Bahreinis from Bahrein. There are also about 1,000 Persians, some Jews and Jana'at, and about 4,000 negroes. There is no Indian colony (1908 Report).

The Arab population is on the whole not of a robust type. The complexion of many is sickly.

Administration and Authorities.—The administration is patriarchal. Hospitality is offered to all guests, who must, however, leave their arms at the gate. The Sheikh (who belongs to the 'Atub tribe) exercises political power and the judicial functions of a *Kazi*. Punishment is rarely inflicted, and there seems to be but little governmental interference with the liberty of the subject in any respect, and to be little need for it.

No tribute is or ever has been paid either to the Emir of Nejd or the Turkish Government. Nor is tribute exacted from other tribes. The Sheikh has a Customs Department, but no statistics are available. Koweit, in fact, under a succession of common-sense rulers, has become a thriving free-trade port. In December 1914 the Sheikh of Kweit adopted a special flag of his own.

The boundaries of the Sheikh of Koweit's power follow roughly a line drawn from the Khōr es-Sabīyeh, passing immediately S. of Umm Qasr and Safwān to Jebel Sanām and the Bātin depression; thence along the Bātin to Hafar; and from Hafar southwards so as to include Summām. On the S. the Sheikh's influence reaches as far as the N. border of the Radāif, and the boundary may be considered to run from Jebel Munīfeh on the coast to the Nu'eirīyeh hill at the NW. corner. The Koweit principality is about 190 m. from NNW. to SSE., and 160 m. from ENE. to WSW. It also includes the islands at the mouth of Koweit Bay.

Koweit and district (within 10 m.) can supply perhaps 12,000 fighting-men.

History.—The chief importance of Koweit in history dates from 1871, when 'Abdallah ibn Feisal, ruler of Nejd, appealed for assistance against his brother Sa'ud to Midhat Pasha, then Vali of Baghdad. Sa'ud had seized El-Qator and Qatīf and also some ships belonging to Koweit. As a result of a conference between Midhat Pasha and the Sheikh of Koweit it was decided to co-operate with 'Abdallah against Sa'ud. The latter was defeated, and according to the Turkish account the Sheikh placed himself under Turkish control, assumed the Ottoman flag, and by accepting the title of Pasha acknowledged henceforth a certain subjection to Turkey. According to the Koweit account the Sheikh was granted the title of Pasha in return for services rendered, at the same time receiving grants of land in the neighbourhood of Fāo, and a grant of money which was paid regularly until 1898.

From 1871 to 1897 the question of the sovereignty of Koweit arose in various forms, mainly on the general point of the repression of piracy on the Gulf Coast by British ships. In 1897 Sheikh Mobaraq failed in an endeavour to obtain from Turkey a recognition of independence, upon which he made a definite request for British protection. The British Government were at first disinclined to interfere, but in 1899 certain arrangements were entered into with the Sheikh when it was reported that a Russian railway concession in Koweit had been granted. Meanwhile the Sheikh had accepted the title of Kaimmakam from the Turkish Government, but this was explained as merely incidental to his possession of the Turkish property at Fāo. Subsequently the Turks appointed a harbour-official, who was removed later as the result of a protest from the British Government.

In 1901 the Sheikh attacked the Emir of Nejd, who appealed to the Ottoman Government, and Turkish troops would probably have been dispatched to Koweit had not the British Government announced

its determination to oppose by force any landing of troops. A few weeks afterwards an official from Basra warned the Sheikh that he had better make his submission to the Turkish Government, but this action was disavowed, on representations of the British ambassador at Constantinople. A more peremptory summons was issued later in the same year, which resulted in the Sheikh stating that he would have no option but to comply unless assured of British support. The Senior Naval Officer in the Persian Gulf received instructions to defend the town, but no attack was made, and again the Porte disavowed the action of its officials, though during 1903 it continued to occupy various more or less debatable points on the Koweit boundaries with small posts of troops, e. g. at Safwān, Būbayān Island, Umm Qasr, and Warbeh Island.

Between 1903 and 1910 there was little open interference with the *status quo*, though the Young Turkish Government which came into power in 1908 tried unsuccessfully to detach the Sheikh by their promises from the British connexion. The attitude of His Majesty's Government with regard to the situation was stated by Sir E. Grey in the House of Commons on March 9, 1911, in a debate concerning the suggested Persian Gulf section of the Baghdad Railway. He said: 'We are not anxious to disturb the *status quo* in the Persian Gulf . . . but if the *status quo* is going to be disturbed by others then we must undoubtedly use our resources to maintain our position in the Persian Gulf. Part of the *status quo* is that we have entered into treaty obligations with the Sheikh of Koweit, and in any negotiations which there may be, or in any changes which may take place, it is an obligation of honour with us to see that our treaty obligations towards the Sheikh of Koweit in maintaining his position are fulfilled.'

In 1914 this and other points of variance were on the point of being amicably settled.

KŪFEH. On the l. bank of the Kūfeh Channel of the Hindiyeh arm of the Euphrates, and 7 m. NE. of Nejef. Population estimated (1908) at about 3,000. T. Bridge of boats.

River Routes.—For communication by the Euphrates between Kūfeh and other places on the river see *Routes* IV A, B, C, D.

Land Route.—To **Nejef.** There is a horse-tramway from Kūfeh to Nejef.

General Description.—Kūfeh has a river frontage of 500-600 yds. For details of bridge and river see *Route* IV C (i), m. 99; it is reported

that good cover or support for a bridging-party would be afforded by the two small wooded islands there mentioned. The town has about 600 houses, mostly of stone and mortar; there is one large khan on the l. bank about 50 yds. above the bridge.

The great Kūfeh mosque, where 'Ali was murdered, stands about 1½ m. from the present town on the way to Nejef. The building resembles a fortified enclosure: from the wall surrounding it, which is 30 ft. high, small semicircular bastions (10 ft. in diameter) project at intervals of 50 ft. Inside, the mosque is like a caravanserai, having a courtyard (128 paces long and 104 paces wide) surrounded on three sides by small cubicles. The mosque is adjoined by two other brick enclosures, one of them on the E. side having a wall about 20 ft. high: within it are the tombs of Muslim-bin-'Aqīl and Hani-hin-Amwah, which are both objects of veneration. There are two or three small khans N. of the mosque.

On the SW. side of the town is a ruin-field marking the site of the mediaeval city, and about 2 or 3 m. S. of Kūfeh are the ruins of **Hīrah,** a great city of the pre-Moslem period.

Supplies and Commerce.—Kūfeh is surrounded on all sides by excellent date plantations, and there are gardens on the l. bank of the channel. Fruit, vegetables, and forage can be had in abundance. It is a general centre for the distribution of goods brought from Basra over a wide tract of country. In 1908 there were about 100 occupied shops, numerous store-houses and places of business. 6 to 12 *safīnehs* of medium size are generally anchored off the town.

Inhabitants.—About three-fourths of the population are Shiah Arabs; the remaining quarter are Persians, including a few Persianized Balūchis: some inhabitants of Nejef also have houses or offices in the town.

Administration and Authorities.—Kūfeh is the head-quarters of a *Nahiye* in the *Kaza* of Nejef, and is administered by a Mudir. Before the war it was a small military post.

History.—The original town of Kūfeh was founded as an Arab centre about A. D. 638, after the battle of Qādisīyeh (A. D. 635) had put Irak into the hands of the Mohammedans. 'Ali, the nephew of the Prophet, and the originator of the Shiah sect, was assassinated here in A. D. 661, and the town was subsequently a noted centre of Shiah intrigue against the Ommayad Caliphs, under whom it shared with Basra the title of 'Irāqān, or capital of Irak. Subsequently, however, it declined and disappeared, and the modern town is said to be only about 30 years old. The name is interpreted to mean 'the reed huts'. The style of Arabic writing known as Kufic had its origin here.

KURNA. On the r. bank of the Tigris at its junction with the old channel of the Euphrates.

Pop. about 2,000. P.O. T. (the lines from Fāo and Basra to Baghdad here threw off two branches, one following the Tigris valley, the other the Euphrates). Bridges across Tigris and Euphrates.

River Routes.—

(i) To **Basra** and **Fāo.** (See *Routes* I A, B.)

(ii) Up the Tigris. (See *Routes* III A, B, C.)

(iii) Up the Euphrates. (See *Routes* IV A, B, C, D.)

Land Routes.—

(i) To **Basra.** (See *Route* 2.)

(ii) To **Amara** and **Ali el-Gharbi.** (See *Routes* 4, 5 a, b.)

General Description.—The town stands at the angle formed by the Tigris and the Euphrates, which flow past its E. and S. sides, its main front being on the Tigris. For the details of the rivers at this point, and of the bar in the Shatt el-'Arab below the town, see *Route* I B. On the N. and W. town and adjoining gardens are surrounded by the remains of mud-wall fortifications said to be very old and now hardly more than mounds. To the N. of the town is the suburb of Nuheirāt, stretching about 1½ m. along the r. bank of the Tigris. This is the head-quarters of the Sheikh of Kurna. Kurna has a frontage on the Tigris of about 1,000 yds. There are a few fairly good houses on the front and several more in the town back from the river. Near the centre of the river front is the *serai* or late Turkish Government offices. There is a small bazaar in the town, part of which is roughly roofed in.

The date-gardens of Kurna and most of the space within the old fortifications are below Tigris flood-level, the water being kept out by artificial banks. There are thick date-groves opposite Kurna on the farther banks of the Tigris and Euphrates.

Climate and Hygiene.—The climate is damp, unpleasant, and unhealthy in summer. Malaria is prevalent: mosquitoes and other water-bred insects swarm. In winter the climate is said to be cold and bracing.

Supplies and Commerce.—Dates, barley, wheat, and rice are grown. The chief manufacture of the town is that of the ordinary Arab cloaks (*'abas*) and of light summer cloaks (*khāchiyeh*). Before the war sheep and cattle from Amara used to be driven in droves through Kurna on the way to Basra. There are numerous buffaloes in the neighbourhood. The inhabitants of Kurna and the district own a large number of *maheilehs* and cargo *bellams*, used chiefly for transport between Amara and Basra. There are also in the district some thousands of *dānaks* and *mashhūfs* (canoes).

Inhabitants.—The inhabitants are town Arabs calling themselves Qurnawi and denying any connexion with the surrounding tribes. They are Shiahs. A number are merchants and shopkeepers, the remainder boatmen, gardeners, and artisans. There are about 30 Persians and a few *soi-disant* Persians who have taken out certificates of Persian nationality to escape Turkish taxation.

Authorities.—Kurna under the Turkish régime was the capital of a *Kaza* in the Baghdad *Vilayet.* There was a small Turkish garrison and a custom-house. The Government levied a tax on the reed-mats, grass, and reeds exported by river from the Euphrates marshes, and a toll on the cattle and sheep which passed through Kurna on their way from Amara to Basra. The remaining revenue came from a tax on date plantations and arable land. The Arab Sheikh of Kurna, Gabashi, exercises a certain amount of authority in the town, and is also Sheikh of Muzeira'ah on the opposite side of the Tigris and of the Beni Mansūr country to the south of the old channel of the Euphrates. (See further *Route* IV A.)

History.—Kurna is said to occupy the site of a more ancient place called Dighah. Tradition places the Garden of Eden here and alleges that a tree exists which was planted by Noah. The position has been of great military importance since, at the end of the Middle Ages, the Tigris changed its course so as to unite with the Euphrates here (instead of near Nāsirīyeh). There was a fort at Kurna at the end of the sixteenth century. The present town was founded more than a century ago by the Turks to serve as a *point d'appui* in their wars against Persia. It was occupied by the British in December 1914.

KUT EL-AMARA (or simply Kut). On the l. bank of the Tigris, 204 m. below Baghdad by river and 112 m. by road.

Pop. estimated at 4,000 inhabitants in 1908; possibly 6,000 in 1914. P.O. T. (before the present war the line Basra—Baghdad *via* the Tigris passed by Kut; branch line from Kut to Bedrah and Kut el-Hai). Boat-bridge.

River Routes.—

(i) For Tigris communications see *Routes* III B, C.

(ii) To **Suweij** *via* the Shatt el-Hai. (See *Route* V.)

Land Routes.—

(i) To **Nāsirīyeh.** (See *Route* 19.)

(ii) To **Baghdad.** (See *Route* 5 c.)

(iii) To **Kirmanshah** *via* Zorbatiyeh. (See *Route* 9.)

General Description.—Kut stands along the river bank in a small fringe of gardens and date plantations irrigated by *cherrads.* It has one mosque with a minaret and a Jewish synagogue. There is a row of fairly well-built houses along the river front, the Turkish barracks being the square building at the west end. In the neighbourhood of the town on either bank there is a belt of country in which barley and wheat are cultivated. The Turkish boat-bridge before the present war consisted of 35–41 pontoons, the number varying with the rise and fall of the river. There is a quay suitable for river steamers.

Supplies and Commerce.—The town before the war was the centre of a considerable grain traffic, corn from the Euphrates country being brought here by way of the Shatt el-'Arab for distribution in the Tigris region. The *Dā'irat es-Sanīyeh* had large grain-stores here. Supplies from local produce are said to be scarce, but some barley, wheat, oats, maize, and *māsh* are cultivated in the neighbourhood, and there is a considerable export of liquorice.

Woollen rugs (*harāmāt*) and coarse carpets (*zull*) are manufactured here. The trade is mostly with the Kurdish towns of Jessān and Bedrah, and is not important. There are about 200 shops, 10 khans, and 8 cafés.

Inhabitants.—A large proportion of the population are Faili Kurds. The rest are Shiah Arabs, except 100 Jews and a few Christians. The surrounding country belongs to the Beni Rabī'ah. The inhabitants of the town for the most part cultivate the soil and breed cattle, or else are dealers in grain or wool, and brokers and shopkeepers. The Kurds are porters and carriers, the Jews goldsmiths, and the Christians liquorice-merchants.

Administration and Authorities.—Kut was the head-quarters of a *Kaza* of the same name in the Baghdad *Sanjaq* of the *Vilayet* of Baghdad. There were a few Turkish police, a harbour-master, and a custom-house. Customs, Tobacco Régie, and the Public Debt Department are each represented by a Mamur. Before the war the Turks were maintaining here a garrison of some 200 men to keep the Beni Lām in order.

MOHAMMAREH. The capital of Arabistan, on the Kārūn River about 1 m. above its junction with the Shatt el-'Arab. Lat. 30° 25′, Long. 48° 09′ (at flagstaff of British Consulate).

Pop. 12,000–13,000. P.O. T. (connexion from British Consulate with Fāo—Basra Line: connexion by single wire (Persian) with

Ahwāz, Shushtar, Dizfūl, also by branch from Ahwāz with Ramuz, Behbehān, and Borasjūn, where the Bushire—Teheran line is joined). Tel. (to Sheikh's palaces on Shatt el-'Arab: connexion with Anglo-Persian Oil Company's line from Maidān-i-Naftūn to 'Abbādān). Wireless at 'Abbādān. (See *Route* I A, under m. 48¾.)

River Routes.—

(i) To the **Persian Gulf** by the Shatt el-'Arab. (See *Route* I A.)

(ii) To the **Persian Gulf** by the Bahmān Shīr River. (See *Route* II B.)

(iii) To **Basra** by the Shatt el-'Arab. (See *Route* I A.)

(iv) To **Ahwāz-Nāzirī** by the Kārūn. (See *Route* II A.)

Land Routes.—

(i) To **Ahwāz** by the r. bank of the Kārūn. (See *Route* 6 a.)

(ii) To **Ahwāz** by the l. bank of the Kārūn. (See *Route* 6 b.)

(iii) To **Basra.** (See *Route* 3.)

(iv) To **Fellāhīyeh, Bandar Ma'shur,** and **Bushire.** (See *Routes in Persia,* vol. iii, no. 54.)

Landing and Anchorage.—See *Route* I A under m. 48¾.

General Description.—Mohammareh lies on the r. bank of the so-called Haffār Channel, the main mouth of the Kārūn River, which flows into the Shatt el-'Arab about 1 m. below the town. Opposite Mohammareh on the l. bank of the Haffār Channel lies the small village of Kūt esh-Sheikh.

The frontage of the town extends along the river, where erosion is prevented by revetments of date-palm wood forming quays and wharves. At its upper end this frontage is enclosed by the date-palms of Nahr Siyāb, at its lower end by those of Hisān. These date-groves are only about ¼ m. deep. Behind the town stretches an open, treeless desert.

Europeans live on the banks of the Haffār Channel above and below the town. For the buildings between the town and the mouth of the Shatt el-'Arab see *Route* I A, under m. 48¾.

Mohammareh is built partly of brick, partly of mud. Somewhat back from the river is the brick bazaar with a domed roof, built by the present Sheikh. On the river in the town are the palace of Haji Rais et-Tujjar, the Persian post office, the Persian telegraph office, the Old Battery, and the building of the Imperial Bank of Persia. This last is at the NE. end of the town.

Farther up-stream is the Persian Resident's house, and, finally, round a bend are the houses of the manager and the assistant manager of the Imperial Bank of Persia. All the buildings outside the town stand among date-palms.

The town contains 6 mosques, three public baths, several native

hostelries (*huseiniyehs*) and store-houses for merchants' goods (here called *khāns*).

Climate and Hygiene.—Accurate observations of temperature are not available for any extended period (see vol. i, chap. ii), but the following figures may be taken as approximations. In January, the coldest month, the average maximum temperature at Mohammareh is 57° F. and the minimum 45° F. The extremes met with during the month are 67° F. and 32° F. Rain falls between November 1 and April 1, and the yearly average at Mohammareh is about 11 inches. From April to October there is no rain, and hot winds prevail. During July and August, the hottest months, the average maximum temperature at Mohammareh is 103° F. and the average minimum 86° F. with extremes of 110° F. and 84° F. respectively. Other authorities state that the temperature of Mohammareh ranges from 32° F. to 115° F. The usual daily range of temperature in July is from 85° F. to 110° F., and in January from 40° F. to 57° F. It is said that about the middle of May a dry NW. wind generally blows for some 10 days, followed by a calm of similar duration before the setting in of the *Bārih* or Great North-Wester, which lasts for about 40 days. After the *Bārih* come, as a rule, 10 days of light southerly breezes, and thereafter hot winds from the NW. and damp winds from SE. till the end of August. The summer heat at Mohammareh, although intense, is dry and not unhealthy. From the middle of October to the end of April the climate may be called pleasant. For the high- and low-water seasons of the Kārūn see *Route* II A.

The town, despite the great improvement it has undergone, continues to be highly insanitary. The only kind of drain is a channel cut down the middle of each street and generally choked up except after rain.

In 1913 a consular surgeon was appointed, but the post almost immediately fell vacant and was not filled. In 1914 the plans for a hospital were submitted to Government. A dispensary does good work, but no progress has been made with the proposed hospital. The more common diseases are ailments of the eye, skin, and digestive system, and venereal diseases.

Supplies and Commerce.—Large stocks of rice and dates are generally available in bazaar. Much barley is produced in the country around, largely for exportation in normal times. The amount of wheat produced varies considerably. The value of wheat exported has varied between £200,000 and £500,000 in recent years. In 1910 the existing flour-mills were not sufficient for the normal requirements of the town. The amount of vegetables varies.

Onions and beans are among the chief products of the country. Meat is fairly plentiful, sheep being numerous. There is a fair supply of poultry and bullocks. Beef is of inferior quality. Fish is plentiful.

Water is plentiful from the river, but water in wells, being brackish, is to be avoided. The water in the Haffār Channel is purer and cooler than that in the Shatt el-'Arab. Water from creeks and irrigation cuts is unwholesome. Water in the Bahmān Shīr River is reported excellent.

A certain amount of lucerne also, after a good harvest, and chopped straw are locally obtainable.

Date-trees, some coal and oil, and timber can be obtained from the Āb-i-Dīz.

Probably 1,000 camels are procurable after giving notice. Mules are not obtainable.

The commerce of Mohammareh has increased in recent years owing partly to the establishment of the Anglo-Persian Oil Co. in the Kārūn valley, and partly to the disturbed state of the country between Shiraz and Bushire, which has resulted in a diversion of trade from the Shiraz—Bushire route to the route from Isfahan to Mohammareh *via* Nāzirī (Ahwāz) and the Kārūn River. The total value of imports in 1913–14 was £812,000, a quarter of which represents imports of the Anglo-Persian Oil Co. The chief articles imported were textile products from Great Britain, and next to these come sugar, wood, chemicals, tea, and miscellaneous manufactured articles. A failure of the local rice-crop resulted in the import of about 45,000 lb. of rice. The principal exports are wheat and barley (in very varying quantities according to the harvest), dates and wool (these commodities are from Arabistan itself), and opium, gum, and tobacco, which are sent down from the interior. The British firms at Mohammareh in 1914 were as follows:—

The Imperial Bank of Persia; Messrs. Lynch & Co.; Messrs. Gray, Mackenzie & Co.; Messrs. Strick, Scott & Co. On these firms see further under Basra. The Anglo-Persian Oil Co., for whom Messrs. Strick, Scott & Co. act as agent.

The principal Persian merchant in Mohammareh is Haji Rais et-Tujjar, who is the Wazir of the Sheikh and the agent of the Nāzirī Co.'s steamers. This company is owned by Mu'in et-Tujjar, who has a house at Ahwāz-Nāzirī. Haji Rais is agent for the Russian Steam Navigation Co., the Bombay Persian Steam Navigation Co., the Arabs' Steamers Co., Ltd., and the Persian Gulf Steamship Co. Messrs. Wonckhaus & Co. (whose representatives are at present interned) have offices and warehouses here. This German firm (also

agents for the Hamburg-Amerika line) had been making strenuous efforts to obtain a footing in the trade of Mohammareh. During 1913–14 the German steamers, which had imported 34,000 tons of railway material into Basra for the Baghdad Railway, were ready to take grain at specially low freights in order to get a cargo, an opportunity that was taken advantage of by Messrs. Wonckhaus.

Inhabitants.—In 1908 most of the inhabitants were Arabs belonging to the various divisions of the Muhaisin tribe. There were also numerous descendants of Bahreinis, Persians, a colony of Sabians, and a few Jews and Oriental Christians. The Bahreinis are mostly small shopkeepers and mechanics; the Sabians are silversmiths, the Jews deal in Manchester goods, and the Christians are clerks and lightermen. The population has more than doubled within the last eight or nine years.

Persian is spoken in the town concurrently with Arabic.

Administration and Authorities.—The Sheikh of Mohammareh is His Excellency the Khazal Khān, K.C.S.I., K.C.I.E. He is the hereditary Sheikh of the Muhaisin tribe, nominally subject to the Persian Government with the titles of Governor of the Shatt el-'Arab and Kārūn, Governor of Mohammareh, and Warden of the Marches. He is in practice independent ruler of all Southern Arabistan. His Wazir is Haji Rais et-Tujjar, C.I.E., of an important Persian family. The eldest son of the Sheikh, Khasib Khān, was in 1914 governor of Ahwāz. In addition to being the head of the Muhaisin tribe, the Sheikh also controls the once powerful tribe of Ka'ab, whose headquarters are at Fellāhīyeh. The Sheikh's rule over the tribesmen is extremely stringent but just, and fully in accordance with tribal usage and opinion. Tribal councils of the Muhaisin, consisting of headmen, meet at Failīyeh. The Sheikh is the largest landowner in Arabistan.

The chief officer of the town of Mohammareh has the title of Naib el-Hukumeh, but all important matters are settled by the Wazir, or, in his absence, by his deputy. While the Sheikh is director-general of the customs the deputy-director is a Belgian.

The Sheikh has always shown himself friendly to the British Government, from which he has received support and distinction.

History.—A city under various names existed on or near the site of Mohammareh from the time of Alexander the Great onwards. It has for long been under the rule of the paramount Sheikh of one or other of the neighbouring Arab tribes. In 1841 the Sheikh of Mohammareh recognized the suzerainty of Persia in order to save himself from Turkish rule. In 1857, during the Anglo-Persian

War, a British Expeditionary Force occupied the place after a skirmish. At the conclusion of the war the Sheikh of the Ka'ab, who had till then ruled Mohammareh and S. Arabistan, was deposed by the Persian Government, and replaced by the Sheikh of the smaller tribe of the Muhaisin. Since then, except for a short interval from 1860 to 1862, the paramount Sheikh of the Muhaisin has ruled over the Ka'ab. In the years preceding the war, the close relations of the present Sheikh with Great Britain had caused both the Persian and Turkish Governments to adopt an unfriendly attitude towards him. The Turkish Government tried to encroach on the Sheikh's territories in the region of Hawīzeh, and the intervention of Great Britain became necessary. The Persian Government refused to confirm the Sheikh's concessions to the Anglo-Persian Oil Company: no notice, however, was taken of this refusal.

MUSEYIB. On the Euphrates, 8 m. above the bifurcation of the Hindiyeh and Hilla arms at the Hindiyeh Barrage. Pop., permanent, about 3,500 (1908); pilgrims generally about 1,500; 1,000 houses. P.O. T. (double wire on Hilla—Baghdad line). Bridge of 24 boats (200 yds. long): some boats connected only by insecure gangways without hand-rails.

River Routes.—For communication by the Euphrates see *Routes* IV C, D.

Land Routes.—

(i) To **Kerbela** and **Nejef.** (See *Route* 21 a.)
(ii) To **Fellūjeh.** (See *Route* 18.)
(iii) To **Baghdad.** (See *Route* 21 a.)

General Description.—The town lies principally on the l. bank, and the covered bazaar is in this quarter, but some of the principal buildings, including Government offices and several good khans, are in the smaller quarter on the r. bank.

The width of the river at Museyib is from 200–300 yds.: owing to its narrowness, its high banks, and the neighbourhood of the barrage the river is exceptionally deep, and is said to vary from 12 ft. (l.w.) to 24 ft. (h.w.). The bottom is of firm earth, and the banks 15 ft. high and fairly steep: the current runs at $2\frac{1}{2}$–3 m.p.h. There is a very dangerous curve in the river here, which needs heavy protective work: if the Euphrates were to burst its banks here, serious inundations would ensue. On the l. bank, immediately above the town, a strong embankment, carefully revetted,

extends for about 600 yds., and along the top of it runs the Baghdad road.

Museyib is surrounded by palm-groves, and has the aspect of a pleasant country town.

Supplies and Commerce.—Museyib stands amid extensive date plantations: it is estimated that there are 40,000 palms in the neighbourhood. It is also the centre of a good agricultural district, and supplies of barley and other grain may be had: there are 25 grain stores. It was estimated (1903) that a month's supplies for an infantry brigade and its transport could be obtained from Museyib and its neighbourhood. There are 12 khans and 100 shops. There are no local manufactures, and trade is inconsiderable, centring mostly around travellers from Baghdad to Kerbela. In the busy season 12 *safīnehs* are retained to bring up rice from the barrage and to take down Baghdad merchandise to boats waiting below the barrage. In the off-season 7 of these are released for up-stream traffic. There are 20 *sājehs* (small boats).

Inhabitants.—The great majority of the people are Shiah Arabs, but there are small Jewish, Persian, Turkish, and British-Indian communities: there are no resident Christians. There is a floating population of pilgrims on their way to Kerbela.

Administration and Authorities.—Museyib is the head-quarters of a *Nahiye* in the *Kaza* of Kerbela. The *Dā'irat es-Sanīyeh* has many estates in the neighbourhood, and has planted a number of masonry enclosures: these are used as store-houses, but resemble military forts.

NĀSIRĪYEH. On the Euphrates, about 90 m. by river above Kurna, and 27 m. above Sūq esh-Shuyūkh. Pop.: 10,000 (?) P.O. T. (before the war the line from Basra to Baghdad *via* the Euphrates valley passed through Nāsirīyeh). Bridge of boats.

River Routes.—

(i) For communication by the Euphrates see *Routes* IV A, B.

(ii) For navigation of the Shatt el-Hai see *Route* V.

Land Routes.—

(i) To **Basra.** (See *Route* 13 a, b.)

(ii) To **Nejef.** (See *Route* 12.)

(iii) To **Kut el-Amara.** (See *Route* 19.)

General Description.—Nāsirīyeh stands among date-groves on the l. bank of the Euphrates about 5 m. above the mouth of the Sadanawīyeh Canal leading to the Shatt el-Hai. The Turkish boat-bridge (25 pontoons) was about 1½ m. above the town, opposite

a suburb of mud huts and date plantations on the r. bank. The date-groves on the l. bank were reported in 1908 to end at the boat-bridge. Nāsirīyeh has a river-frontage of about ½ m. It is unwalled. The town contains about 600 good masonry houses in broad, well-aligned streets, with numerous mud huts on the outskirts. There are large blocks of Turkish Government buildings which comprise civil offices, military barracks, an artillery-park, a hospital, and stores. There are 3 khans in the town.

Supplies and Commerce.—The surrounding country produces a considerable quantity of wheat, barley, rice, and maize, of which there is usually a surplus for export. It was reported in 1915 that 'large numbers of live stock and great quantities of vegetables and fruit can be obtained here, of which latter a considerable amount comes from Samāweh'. Boats are built here by the Sabians. A class of cargo-*bellam*, of about 10 tons, called the Euphrates *bellam*, is to be found at Nāsirīyeh. A few larger craft (apparently *maheilehs*) were generally lying here in normal times. Land transport (pack animals) can be obtained from neighbouring Arab tribes; there is no evidence as to the amount available.

Besides cereals, skins, hides, and *ghi* are exported. The principal imports before the war were Manchester piece-goods, groceries, spices, and drugs. There are about 350 shops in the town. The place was a market for neighbouring Arabs (Muntefiq and Dhafīr).

Inhabitants.—Most of the inhabitants are Shiah Arabs, but there were in 1908 over 1,000 Sunnis, as well as about 300 Sabians, 300 Persians, 150 Jews, and a few Turks, Kurds, and Oriental Christians. The Sabians are goldsmiths, carpenters, and boat-builders.

Administration and Authorities.—Nāsirīyeh was the head-quarters of the Turkish *Sanjaq* of Muntefiq in the *Vilayet* of Basra. Before the war the officer commanding the garrison discharged also the civil functions of Governor of the *Sanjaq*, as the place was an outpost of Turkish authority in an unsettled country (especially in the years immediately preceding the war, Sa'adun Pasha, the paramount chief of the Muntefiq, had been giving trouble). The garrison consisted nominally of 2 infantry battalions with a squadron of cavalry and 5 guns; but the defence of the town against raiders and sniping fell largely on the civil population. There was a police-force of 200 *zaptiehs*. Two Turkish Government schools were maintained here, a secondary and a primary. A Persian Consular Agent resides in the town.

NEJEF (or Meshed 'Ali, The Martyrdom of 'Ali), about 7 m. SW. of Kūfeh. Pop. over 30,000. P.O. T. (to Kerbela).

Land Routes.—

(i) To **Baghdad** *via* Kerbela. (See *Route* 21 a.)
(ii) To **Baghdad** *via* Hilla. (See *Route* 21 b.)
(iii) To **Tawarīj.** (See *Route* 16.)
(iv) To **Basra.** (See *Route* 12.)
(v) To **Hā'il.** (See under *Route* 24 a.)
(vi) To **Kūfeh** on the Hindiyeh arm (†7 m.). No details. Horse-tramway.

General Description.—Nejef stands in the desert on a ridge of reddish sandstone gravel, and overlooks from the NE. the Bahr-i-Nejef, to which the ridge falls away to the *bahr* in cliffs about 40 ft. high. The *bahr* is now quite dry near the town and contains several date plantations. On the plateau surrounding the town on every side except to the SW., irregular earthen mounds rise in different directions: some of those to N. and E. are 30 ft. high with narrow summits. A mound of rubbish, also narrow topped, but commanding the town, is situated on the SW. side between the town and the *bahr*. On the S. is open ground, where the Turkish Nejd Expeditionary Force was encamped (1904, 1905). The Hamīdiyeh (or Bakrīyeh) Canal from the Hindiyeh runs in the bed of the *bahr*, skirting the foot of the cliffs. Opposite the town its bed is 12 ft. wide and 12 ft. deep, but at l.w. it shrinks to about 6 ft. wide and 6 in. deep, and is liable to be filled with drifting sand.

The cemeteries adjoin the N. and E. sides of the town: the environs generally contain market-gardens and recent plantations of date-palms.

The town itself, which is roughly quadrangular, is surrounded by a wall about a century old, built to defend it against the Sunni Wahhābīs: it is about 30 ft. high with circular bastions, about 50 in number, each 50 ft. in diameter, at intervals of 100 yds.: this work is now in a state of decay. There are two main gateways, one 12 ft., the other 9 ft. wide, on the E. face of the town: on the SW. side, towards the *bahr*, is a third gate. In the W. wall is an aperture, known as Thilmeh, a passage large enough to permit field-artillery to pass. At the NE. corner, near the military barracks, is a fourth gate.

The shrine which contains the tomb of 'Ali rises in the centre of the town, and is the richest and most splendid of all Shiah holy places. The sanctuary lies in the middle of an enclosed court: it is double-storied, and the gold plating of the minarets reaches almost to the ground. Christians are not admitted to the shrine.

The main bazaar runs from the shrine to the larger E. gate, and in it are situated the Turkish Government buildings (*serai*). The municipal buildings are over the larger gate on the E. side. There

is a dilapidated Turkish barrack in the NE. quarter, and about 20 caravanserais, including 5 or 6 well-built brick khans, outside the town on NE. about 25 yds. from the wall. The space within the walls is completely filled with buildings, which are mostly of brick and mortar, largely modern.

The importance of Nejef lies in its containing the reputed tomb of 'Ali, who, it is believed, was buried here after his murder at Kūfeh in A.D. 661. For this reason it is a holy place and a centre of pilgrimage for the Shiahs of all Moslem countries. From Nejef a pilgrim route is continued through the Nejd to Mecca, and the town has been used by the Turks in recent years as a base for military operations in N. Arabia.

Supplies and Commerce.—Nejef is built round a pilgrim centre on the edge of the desert. The town is thus dependent for receiving its supplies and for transport on the neighbouring Bedouin: in ordinary times two-thirds of the imports are said to be consumed by the pilgrims, and it is alleged that the place could be starved in a week. The principal exports are lambskins, sheepskins, and wool, brought in from the adjacent country. The chief imports are Manchester piece-goods, sugar, spices, tea, hardware, and timber. *'Abas* are made here of particularly beautiful design. There is a considerable trade with Jebel Shammār, which is carried on by *hadrahs* or commercial missions, sometimes officially dispatched by the Emīr of Jebel Shammār.

Even when there is water in the Bahr-i-Nejef, it is not drunk except by animals, but serves for washing and other domestic purposes. A better water-supply is now furnished by the Hamīdiyeh, an open water-canal, the property of the *Dā'irat es-Sanīyeh*, which brings the water of the Hindiyeh to the town. When the Hamīdiyeh Canal fails in the low-water season, drinking-water is brought from the Hindiyeh in skins. The water of the local wells is brackish.

Inhabitants.—More than one-third of the population are Persians: the rest are nearly all Arabs, with a few negroes, Indians, Barbaris of Afghan origin, and Turks. No Jews or Christians are found here. Except Government employees the entire population is Shiah. It is inclined to be fanatical. The town is divided between two turbulent factions, the Shumurd and Zugurd, of which the origin has not been explained. Serious street-fighting sometimes takes place. Most of the permanent residents depend for their livelihood on functions connected with the shrine.

There is a large floating population of Shiah pilgrims who come chiefly from Persia and India in the cold weather, with the object of visiting the shrine of the martyr 'Ali, and ending their days or burying

their relations in the holy place. The result is that the town is much overcrowded, and 'people are here heaped on top of one another'. See further on Shiah pilgrimages, vol. i, p. 83.

Administration and Authorities.—Nejef is the head-quarters of a *Kaza* of the same name in the Kerbela *Sanjaq* of the *Vilayet* of Baghdad. Before the war Turkish administration was maintained at the lowest strength compatible with effective control: the garrison consisted of one company of infantry with a small force of mounted police.

The Shiah *Mujtahids* (see vol. i, p. 86) are numerous, and the influence of some of them extends throughout the Shiah world.

RUMEITHEH, on the Hilla Branch of the Euphrates, 28½ m. above Samāweh. Pop. (1908) 2,500.

River Route.—See Euphrates, *Route* IV C, ii (Hilla Branch), m. 27.

General Description.—The town is situated on both banks of the river, and its houses are scattered among gardens and date-groves. For some years previous to the completion of the new Hindiyeh Barrage (1914) the productivity of the soil was seriously affected, and the population diminished owing to the drying up of the Hilla Branch. In 1908 the number of houses was estimated at 600, mostly low mud huts, but a large proportion of them were deserted. There is an old stone fort on l. bank of river near lower end of the town.

Supplies and Commerce.—In 1908 there were 180 shops, of which 40 were then unoccupied. Animals for food and transport are kept in the neighbourhood, except camels. At that date barley, *ghi*, *idhrah*, wool, and hides were still being exported, and in the autumn a good deal of business was transacted with the Arabs in the neighbourhood, for whom Manchester piece-goods, drugs, and groceries were imported.

Inhabitants.—The population is wholly Shiah and, with the exception of about 70 Persians, Arab.

Administration.—Rumeitheh is in the *Nahiye* of Abu Qawārīr in the *Kaza* of Samāweh.

SAMĀWEH. On the Euphrates, 71 m. by river above Nāsirīyeh, near the point where the Hindiyeh and Hilla branches reunite.

Pop. 10,000 (?) P.O. T. (the line Basra—Baghdad *via* the Euphrates valley passed through Samāweh before the present war). Bridge of boats.

River Routes.—For communications by the Euphrates, see *Routes* IV B, C.

Land Routes.—

(i) To **Basra.** (See *Route* 12.)

(ii) To **Hilla.** For general description of the country along the Hilla arm see introduction to *Route* IV C. For Hilla—Baghdad road see *Route* 21 b.

(iii) To **Hā'il** *via* **Leinah** wells. (See under *Route* 24 a.)

(iv) To **Nejef** *via* **Shināfiyeh.** (See *Route* 12.)

General Description.—The river divides the town into two parts, of which that on the r. bank is the larger and better and contains the Government offices, but there are brick houses in both quarters, and the military barracks (in 1908 described as ruinous but occupied) for 1 battalion are on the l. bank. There are 6 khans and 8 mosques. The town is surrounded by an old mud wall.

Supplies and Commerce.—The neighbourhood of Samāweh produces enough wheat, barley, rice, and vegetables to enable the town to export a considerable surplus. Samāweh is a centre for the corn-trade of the neighbouring districts. The date-palms do not suffice for local consumption. Wool and lambskins are exported. All kinds of transport animals, except camels, are owned by the surrounding tribes, but the number that might be procured cannot be calculated. In 1908 the supply of boats did not suffice for the river-traffic to and from the town. The only local manufacture is a kind of woollen carpet. The imports are Manchester piece-goods, coffee, sugar, and indigo. Most of the trade before the war used to be with Basra, but some goods were imported from Baghdad, and the tribes of the neighbouring desert and of the Nejd made purchases here. There are about 250 shops.

Inhabitants.—The inhabitants are almost entirely Shiah Arabs, but there are Persian and Jewish communities, a few Turks, and some Abyssinian slaves. Samāweh is much frequented by the local tribes, especially the Muntefiq.

Administration and Authorities.—Samāweh is the head-quarters of a *Kaza*, with the ordinary officials. In peace-time the Turks maintained a small garrison here, which was usually absent collecting the revenue from the neighbouring tribes. There was a small police force. Politically Samāweh has been of importance as one of the chief points of contact between the Turkish authorities and the tribes of the Nejd.

SHUSHTAR. The capital of N. Arabistan, situated on an island

at the point where the Kārūn divides into two branches, the Āb-i-Shatāit and Āb-i-Gargar.

Pop. about 10,000 (so latest reports; but estimates vary greatly). P.O. (Persian). T. (connexion with Dizfūl, with Ahwāz and Mohammareh, and through Ahwāz with Indo-European line Bushire—Teheran).

River Route.—The upper limit of steamer-navigation on the Kārūn is at Shaleili on the Āb-i-Gargar, about 7 m. below Shushtar.

Land Routes.—

(i) To **Dizfūl.** (See *Route* 6 c.)
(ii) To **Isfahan** *via* the Lynch Road. (See *Routes in Persia*, iii. 71.)
(iii) To **Ramuz.** (See *Routes in Persia*, iii. 72.)
(iv) To **Māmātain.** (See *Routes in Persia*, iii. 77.)
(v) To **Qal'ah Bazuft.** (See *Routes in Persia*, iii. 184.)
(vi) To **Deh Lūrān.** (See *Routes in Persia*, iii. 101.)

The citadel, on a bluff overlooking the Āb-i-Shatāit, used to be very strong, but is now commanded from part of the town and from the hills W. of the Āb-i-Shatāit. Bridges (i) to Miyanāb Island S. of the town (Pul-i-Lashkar) and (ii) over the dam to Bulaiti suburb to E. (Pul-i-Bulaiti). The Pul-i-Dizfūl over the Āb-i-Shatāit is broken down. Supplies and forage (mostly from Miyanāb I.) fair. Water-supply good and abundant. Limited mule transport. Cloth-manufactures. Seat of the Persian Governor of N. Arabistan. Two powerful groups of *Mujtahids* reside here. There are four quarters of the town, each under a *Rais*: these are constantly fighting with each other.

SŪQ ESH-SHUYŪKH. On the lower Euphrates at the western end of the marsh and lake country formed by the 'new channel', about 63 m. by water above Kurna and 27 m. below Nāsirīyeh.

Pop. 12,000 (?). P.O. T. (before the war connected by a branch with the main line from Basra to Baghdad *via* Euphrates Valley). Bridge of boats.

River Routes.—For communications by the Euphrates see *Routes* IV A, B.

Land Routes.—

(i) To **Basra** *via* Khamīsīyeh. (See *Route* 13.)
(ii) To **Hā'il.** (See under *Route* 24 a.)

General Description.—The town, which is at the upper end of the Mezlaq Channel, and about 2 m. below the upper end of the Haqiqeh

Channel, stands among numerous fruit gardens and date plantations, and lies mainly on the r. bank of the river. There is a quarter on the l. bank, connected with the main town by the bridge of boats. This bridge consisted, before the present war, of about 12 pontoons, increased to 15 or 16 when the river rose.

The climate is reported to be unhealthy owing to the neighbouring marshes.

Supplies and Commerce.—Large supplies of fruit and live stock are said to be available here. There are about 200 shops, and trade is carried on with the neighbouring Arabs (hence the name of the town, 'Sheikhs' market'). *'Abas* are manufactured here, and the Sabians who live in the l.-bank quarter are boat-builders, blacksmiths, and goldsmiths.

Inhabitants.—Three-fourths of the population are Shiah Arabs. The Sabians number about 700: the religious head of their community lives here. There are also about 300 Jews engaged in petty trade and money-lending.

Administration and Authorities.—Sūq esh-Shuyūkh, under the Turkish régime, was the head-quarters of a *Kaza* in the Nāsirīyeh *Sanjaq* of the *Vilayet* of Basra. There was no garrison maintained here; but detachments of the garrison of Nāsirīyeh were quartered at various posts in the neighbourhood (e. g. at Khamīsīyeh).

TAWARĪJ (Hindiyeh). On the Hindiyeh branch of the Euphrates, 12 m. below its head.

Pop. about 4,000 (1908). P.O. T. (single lines to Hilla and to Kerbela). Boat-bridge (21 pontoons).

River Routes. — For communications by the Euphrates see *Route* IV C.

Land Routes.—

(i) To **Kerbela.** (See *Route* 15.)
(ii) To **Hilla.** (See *Route* 15.)
(iii) To **Nejef.** (See *Route* 16.)

General Description.—Most of the town is on the r. bank of the Hindiyeh, and, the surrounding country being low, it is protected on the three landward sides by an embankment, which encircles it at a radius of a few minutes' walk. On this side of the river are numerous masonry buildings and all the public offices. The quarter on the l. bank, consisting of some mud houses, a few shops, and a good khan (owned by a Baghdadi Jew), is connected by the boat-bridge with the main town. There are three other khans and mosques.

Supplies and Commerce.—Tawarīj was in 1908 still a large entrepôt

for rice brought from other districts, although in the immediate vicinity half the area formerly under rice had been thrown out of cultivation owing to the drying up of the country: the produce-tax payable on rice had fallen to about one-third of its former amount. Besides rice, Tawarīj exports barley, wheat, dates, and wool. Buffalo, cattle, sheep, and goats are numerous in the neighbourhood. Shops number about 150. The Anazeh tribesmen visit the place in large numbers to make their annual purchases of food and clothing: the only considerable import is that of Manchester piece-goods from Baghdad; there is a little trade with Basra. Camels can be had only when the Anazeh are in the neighbourhood, but a considerable number of horses and donkeys are procurable in the district. About 20 boats of the size ordinarily in use on the Hindiyeh arm are as a rule obtainable here.

Inhabitants.—Nearly all are Shiah Arabs, but there are also a few Persians, Jews, and Turks, a very few Punjabis and Afghans, and half a dozen Oriental Christians.

Administration and Authorities.—Tawarīj is the head-quarters of a *Kaza* with the usual officials.

ZOBEIR. In the desert, about 11 m. SW. of Basra. Pop. 6,000 (1908).

Routes.—

(i) To **Umm Qasr.** (See *Routes* 23 a, 23 b.)
(ii) To **Koweit** *via* the Mutla'ah Pass. (See *Route* 23 c.)
(iii) To **Hā'il.** (See under *Route* 24 a.)

General Description.—The town, which is walled, stands on a slight eminence. The ground near the town is barren on all sides except to the SE., where are the lucerne fields and melon patches of Dirhamīyeh. On the NW., along the first 3 m. of the Basra road, are the ruins of Old Basra, consisting of mounds of earth interspersed with fragments of yellow brick. Within the walls the dwelling-houses are built of brick (sun-dried or burnt). There is a large covered bazaar, mostly of masonry. The tomb of Zobeir (see p. 424) is distinguished by a blue tile-work minaret about 40 ft. high, with a dangerous inclination towards the north.

Climate and Hygiene.—The climate is drier than that of Basra, and for this reason many notables and landowners of the Basra neighbourhood have houses at Zobeir to which they retire in the hot weather. The better houses in the town are fitted with *bādgīrs* or wind-catchers and *serdābs*, or underground rooms, ventilated by *bādgīrs*.

Supplies and Commerce.—In normal times all necessary supplies for caravans could be purchased at Zobeir; these, except a certain quantity of melons and lucerne, apparently came from Basra or the neighbouring villages. The supply of drinking-water seems to have come from the wells SE. of the town in the Dirhamīyeh tract. Camels and donkeys could be collected at Zobeir from the desert Arabs: no details are available as to the numbers. Zobeir is a market for the neighbouring Bedouin, and a centre of the carrying trade of NE. Arabia. *Juss* is exported from Zobeir. Sandals and rude saddles are manufactured.

Inhabitants.—The population consists almost wholly of Sunnis (see below under *History*). The carrying trade probably supports a larger number of the population than any other industry. Wealthy inhabitants of Basra neighbourhood reside here in the summer (see above) and some important families of central Arabian origin are settled here. The people of Zobeir were legally exempt from military service in the Turkish Army.

Administration and Authorities.—Zobeir was administered under the Turkish régime by a Mudir. Small detachments of police and soldiers were maintained here. There is a hereditary Sheikh of Zobeir, who owns a property and fortified dwelling-house a few miles NW. of the town.

History.—Zobeir was apparently a suburb of Old Basra. Here, according to tradition, was buried Zobeir, the Companion of the Prophet, who was killed under the walls of Basra in battle against 'Ali, the originator of the Shiah sect. Zobeir's tomb naturally became a holy place to the Sunnis, and a Sunni settlement grew up around it.

BIBLIOGRAPHICAL NOTE AND LIST OF MAPS

The following are among the books and maps which have been most frequently consulted in preparing this volume :—

(A) Official books.

Gazetteer of the Persian Gulf, vol. ii. J. G. Lorimer, C.I.E. Calcutta, 1908.

Routes in Persia, vol. iii. Simla, 1910.

Corrections to Routes in Persia, vol. iii. Simla, 1914.

Military Report on Persia. Simla, 1911.

Corrections to Military Report on Persia. Simla, 1914.

Military Report on the Region between Baghdad and the Persian Gulf. General Staff. 1911.

Field Notes on Lower Mesopotamia. Simla, October 1914.

Field Notes on Lower Mesopotamia. Simla, February 1915.

Routes in Arabia, Part III. Simla, 1915.

Persian Gulf Pilot. London, 1915.

(A number of Force 'D' Route Reports and other unprinted Route-Reports have also been used.)

(B) Unofficial books.

Am Euphrat und Tigris. E. Sachau. Leipzig, 1900.

Vom Mittelmeer zum Persischen Golf, Bd. ii. M. von Oppenheim. Berlin, 1900.

The Irrigation of Mesopotamia. Sir W. Willcocks. First edition, London, 1905. Second edition, London, 1911.

Archäologische Reise im Euphrat- und Tigris-Gebiet. F. Sarre and E. Herzfeld. Berlin, 1911.

From the Gulf to Ararat. G. E. Hubbard. London, 1916.

(C) Maps.

Eastern Turkey in Asia Series. Scale 1 : 250,000. Issued by the War Office.

Indian Degree Sheet Series. Scale 1 : 253,440. Issued by the Government of India.

Survey of the Tigris from Kurna to Baghdad, by Hamilton & Gardner, 1906–7.

Survey of country round Mohammareh and Lower Kārūn, by Wilson, 1912.

Survey of the Euphrates and Tigris Delta from Samarra to Kut and from Hīt to Shināfiyeh, by Sir W. Willcocks, 1912.

Maps prepared for Turco-Persian Boundary Commission, 1914.

Admiralty Charts 1235, 2837 B.

Maps prepared by Intelligence Division, Indian Expeditionary Force 'D', 1914–16.

TRANSLITERATION OF ARABIC, PERSIAN, AND TURKISH NAMES

An attempt has been made in the Handbook to transliterate Arabic, Persian, and Turkish names upon a uniform system, which is explained in detail in the following paragraphs. The aim has been to assist the reader in their correct pronunciation, without overburdening the text with a large number of diacritical marks. It will be noted that a long accent is used to mark the length of a vowel above which it is placed (ā, ī, ō, ū); the only other symbols employed are ʿ for the consonant ʿAin, and ʾ for the Hamzah, or cutting off of the breath which can precede or follow a vowel. Conventional spellings have been retained when sanctioned by general usage; a list of examples, with their correct equivalents, is given on p. 433.

TRANSLITERATION OF ARABIC, PERSIAN, AND TURKISH NAMES

I

ARABIC

I. Consonants

1. ـٔ (Hamzah) = ' except at the beginning or end of a word, and in common terms such as *Bir* and *Ras*, when it is omitted in transliteration; e.g. *Ahmad, Rejā, Medā'in.*

ب = b	ذ = dh	ط = t	ل = l
ت = t	ر = r	ظ = z	م = m
ث = th	ز = z	ع = '	ن = n
ج = j	س = s	غ = gh	و = w
ح = h	ش = sh	ف = f	ه = h
خ = kh	ص = s	ق = q	ي = y
د = d	ض = dh	ك = k	

II. Vowels

2. (i) ـَ (Fet-hah) = *a* or *e* according to pronunciation, e.g. *Jebel, Qal'ah.*

(ii) اـَ (Fet-hah + Alif) = *ā*, e.g. *Jemāl.*

(iii) ىَ (Fet-hah + final ye, rare in place-names) = *a*, e.g. *A'ma.*

3. (i) ـِ (Kesrah) = *i*, e.g. *Dizfūl.*

(ii) يـِ (Kesrah + Ye) = *ī*, e.g. *Mīnāb, Qasīm.*

4. (i) ـُ (Dhammah) = *u* or *o* according to pronunciation, e.g. *Jubb, Hodeideh.*

(ii) وُ (Dhammah + wau) = *ū* or *ō* according to pronunciation, e.g. *Shūsh, Khōr.*

III. Diphthongs

5. وَ (Fet-hah + wau) = *an,* e.g. *Haurān.*

6. وَّ (Fet-hah + double wau) = *aww,* e.g. *Fawwāreh.*

7. يَ (Fet-hah + ye) = *ei* or *ai* according to pronunciation, e.g. *Sheikh, 'Ain.*

8. يَّ (Fet-hah + double ye) = *eyy* or *ayy* according to pronunciation, e.g. *Feyyādh, 'Ayyād.*

IV. Remarks

9. Teshdīd (ـّ) is represented by doubling the English consonant over which it stands, e.g. *Mohammed, Jinn.*

10. In the Definite Article (ال), spelled as usually pronounced *el,* the usual assimilation of the *l* is made before *dentals, sibilants,* and *l, r, n*; e.g. *Sūq esh-Shuyūkh, Harūn er-Rashīd.*

11. A Hyphen is used only in the following cases: –

(1) After the Definite Article.

(2) Between the following consonants when they belong to different syllables, s-h, d-h, t-h, k-h, z-h, to prevent confusion with the single consonants sh, dh, th, kh, zh; e.g. *Is-hāq.*

12. Final ة (the feminine ending) = *eh* or *ah* (*et* or *at* before a vowel), e.g. *Meskeneh, Qal'ah, Birket esh-Shuyūkh.*

13. Final ـيَة = *iyeh* (*iyet* before a vowel), e.g. *Zāwiyeh, Zāwiyet.*
Final ـيّة = *īyeh* (*īyet* before a vowel), e.g. *Nāsirīyeh.*

V. Compound Words

14. The two components in a compound name (in the absence of the *izāfat* or ال between them) are written with a capital and without a hyphen connecting them, e.g. *Bandar 'Abbās, Hayāt Dā'ūd.*

15. When, however, the second member of the compound is a verbal root or is inseparably connected with the first, the whole has been treated as one word whether written in vernacular as one word or two, e. g. *Imāmzādeh, Sabzabād.*

16. Words which have become Europeanized are left in that form, e.g. Mecca (for *Makkah*), Basra (for *al-Basrah*), Medina (for *al-Medīnah*).

17. The Arabic article ال prefixed to names has been omitted in English, except in cases where its retention is authorized by general usage.

18. The word *ibn* occurring in the name of a person is written without a hyphen before or after it, e. g. *Yūsuf ibn Ibrāhīm.*

II

PERSIAN

I. Consonants

19. The same as for Arabic, plus:

پ = p	ذ = z	ض = z	و = v or w
ث = s	ژ = zh	گ = g	
چ = ch			

II. Vowels

20. The same as for Arabic.

III. Diphthongs.

21. The same as for Arabic.

IV. Remarks.

22. 'Izāfat' is transliterated by *i* with a hyphen before and after, e.g. *Kōh-i-Siyāh.*

23. Final *he* (ه) is transliterated only when pronounced, e.g. *shāh, deh.*

III

TURKISH

24. The same as for Arabic, plus:
Modified vowels *ö, ü.*

25. A few Turkish words where two vowels come together, as in *Bair*, are written with a Hamza, e.g. *Ba'ir.*

26. In Turkish a half audible *y* sound is introduced between *k* and following vowel.

IV

(*a*) CONSONANTS

Letter				Name	Transliteration	
	Final	Medial	Initial		Arabic	Persian, Turkish
ا	ا			alif	a	a
ب	ب	ـبـ	بـ	be	b	b
پ	پ	ـپـ	پـ	pe		p
ت	ت	ـتـ	تـ	te	t	t
ث	ث	ـثـ	ثـ	the	th	s

(*a*) CONSONANTS (*continued*)

Letter				Name	Transliteration	
	Final	Medial	Initial		Arabic	Persian, Turkish
ج	ـج	ـجـ	جـ	jīm	j	j
چ	ـچ	ـچـ	چـ	che		ch
ح	ـح	ـحـ	حـ	ḥe	h	h
خ	ـخ	ـخـ	خـ	khe	kh	kh
د	ـد			dāl	d	d
ذ	ـذ			dhāl	dh	z
ر	ـر			re	r	r
ز	ـز			ze	z	z
ژ	ـژ			zhe		zh
س	ـس	ـسـ	سـ	sīn	s	s
ش	ـش	ـشـ	شـ	shīn	sh	sh
ص	ـص	ـصـ	صـ	ṣād	s	s
ض	ـض	ـضـ	ضـ	dhād	dh	z
ط	ـط	ـطـ	طـ	ṭṭa	t	t
ظ	ـظ	ـظـ	ظـ	dha	z	z
ع	ـع	ـعـ	عـ	ʿain	ʿ	ʿ
غ	ـغ	ـغـ	غـ	ghain	gh	gh
ف	ـف	ـفـ	فـ	fe	f	f
ق	ـق	ـقـ	قـ	qāf	q	q
ك	ـك	ـكـ	كـ	kef	k	k
گ	ـگ	ـگـ	گـ	gāf		g
ل	ـل	ـلـ	لـ	lām	l	l
م	ـم	ـمـ	مـ	mīm	m	m
ن	ـن	ـنـ	نـ	nūn	n	n
و	ـو			waw	w	v *or* w
ه	ـه	ـهـ	هـ	he	h	h
ي	ـي	ـيـ	يـ	ye	y	y

(*b*) VOWELS AND DIPHTHONGS

Arabic, Persian, and Turkish

Short.	*Long.*
ـَ (Fet-hah) = a *or* e	ا ـَ (Fet-hah + Alif) = ā
ـِ (Kesrah) = i	ـِ (Kesrah + Ye) = ī
ـُ (Dhammah) = u *or* o	و ـُ (Dhammah + Wau) = ū *or* ō

Diphthongs.

ـَ ي (Fet-hah + Ye) = ai *or* ei

ـَ و (Fet-hah + Wau) = au, and also ü *and* ö (Turkish).

V

EXAMPLES OF CONVENTIONAL SPELLING RETAINED

Acre	*'Akka*
Aden	*'Adan*
Akaba	*'Aqabah*
Aleppo	*Halab*
Alexandretta	*Iskandarūn*
Alexandria	*Iskandarīych*
Algiers	*Al-Jazā'ir*
Anazeh	*'Anzah*
Asir	*'Asīr*
Basra	*Al-Baṣrah*
Bedouin	*Badawī*
Beyrout	*Bairūt*
Cadi	*Qādhi*
Cairo	*Al-Qāhirah*
Caliph	*Khalīfah*
Damascus	*Dimashq*
Dervish	*Darwīsh*
Diarbekr	*Diyār Bekr*
Euphrates	*Al-Furāt*
Fakir	*Faqīr*
Fez	*Fa's*
Hejaz	*Hijāz*
Irak	*Irāq*
Kaimmakam	*Qā'im Maqām*
Kerbela	*Karbalā*
Khedive	*Khidīv*
Koran	*Qur'ān*
Koweit	*Kuwait*
Mecca	*Makkah*
Medina	*Al-Madīnah*
Meshed	*Mashhad*
Mocha	*Mokhah*
Moslem	*Muslim*
Mosul	*Al-Mauṣil*
Muezzin	*Mu'adhdhin*
Muscat	*Masqat*
Oman	*'Omān*
Suez	*Suwais*
Tangier	*Tunjah*
Teheran	*Tihrān*
Tripoli	*Tarābulus*
Vizier	*Wazīr*

GLOSSARY OF TOPOGRAPHICAL AND OTHER TERMS

(A.) = Arabic. (T.) = Turkish. (K.) = Kurdish. (P.) = Persian.
(S.) = Syriac. (H.) = Hindustani.

Ab (P.)	Water, river.
'Aba (A.) (Arab. *'abā'* or *'abā'ah*)	Arab cloak.
Ābād (P.)	Town, plain.
Abu (Abū) (A.)	Father (often used, in the genitive relation, to denote possession, &c.).
Abyadh (A.)	White.
Agha (T.)	Chief.
Aghāj (T.)	Tree.
Ahmar (A.); *fem. sing.* Hamrā	Red.
'Ain (A.)	Spring (of water).
Āl (A.)	Tribe; Bū, in the expression Āl Bū (occurring in many tribal names), is an abbreviation of Abū (*see* Abu).
Ambār (Anbār) (A.)	Storehouse.
'Ami, 'Ama (A.)	Blind (used of dry stream-beds).
Aq, Aqcheh (T.)	White.
Arabeh, Arāba (T.)	Four-wheeled cart or carriage.
Arid (A.)	A small desert plant eaten by camels.
Arzān (P.)	Millet.
Ashāghi (T.)	Lower.
Ashīreh (in genitive relation Ashīret) (A.)	Kindred, family, tribe; used of the tribes paying taxation through their own heads.
Asiyāb (P.)	Water-mill.
'Atīq (A.)	Ancient.
Av (K.)	Water, river.
Bāb (A.)	Gate.
Bādgīr (A.)	Wind-scoop; house ventilator.
Baghaleh	Big cargo-boat, sometimes of 200–300 tons burthen.
Bāghcheh (T.)	Garden.
Bahr (A.)	Sea, lake.
Banāt (A.)	*see* Bint.
Bandar (P.)	Port.
Bāsh (T.)	Head, summit.
Beg, Bey (T.)	Title given to persons of distinction.
Beit (A.)	House.
Bel (T.)	Pass.
Beled (A.)	Town, district, country.

Bellam (A.) Long narrow boat used on the rivers and marshes of Southern Irak.
Beni (A.) Sons of (plur., in genitive relation, of Ibn, q. v.).
Bhusa (H.) Chopped straw.
Bin (A.) Son; variant form of Ibn (q. v.).
Bint (plur. Banāt) (A.) Girl, daughter.
Bīr (Bi'r) (A.) Well.
Birkeh (in genitive relation Birket) (A.) Pool, cistern, tank.
Boghaz (T.) Pass, defile (lit. neck, throat).
Boyun (T.) Col, ridge (lit. nape of neck).
Bund (P.) Dam.
Büyük (T.) Great.

Chai (T.) Stream.
Cham (K.) Meadowland, field (in T. = pine).
Chemen (P.) Meadowland, field.
Chenār (A. Sinār) Plane-tree (*platanus orientalis*).
Cherrad (Churd or Karad) (A.) Water-hoist of skins, drawn by animals.
Chiftlik (T.) Farm.
Chōl (K.), Chöl (T.) Desert.

Dāgh (T.) Mountain.
Dā'irat es-Sanīyeh (A.) The name of the Government Department which manages the Turkish Crown lands.
Dānak (A.) Flat-bottomed boat of a kind used on marshes of Southern Irak.
Dār (A.) House.
Darb (A.) Road.
Deh (P.) Village.
Deir (A.) Monastery.
Derbend (T.) Pass. (Pronounced Devrent.)
Dereh (T.) Stream-bed, valley.
Desht (Dasht) (P.) Plain, plateau, desert.
Deveh (T.) Camel.
Dhalūl, Dhelūl (A.) Riding-camel.
Dīrah Area within which a nomad tribe usually moves and has grazing rights.
Durra (H.) Millet (*sorghum vulgare*).
Dūz (T.) Level, plain.

Emīr (A.) Ruler, prince, commander.
Eski (T.) Old.

Fātihah (in genitive relation Fātihat) (A.) Opening.
Fethah (A.) Opening.

Gardān (P.) Pass.
Gavvan (P.) Small prickly shrub used for firewood.
Gechid (T.) Ford, pass.
Gedik (T.) Pass.
Gharb (A.) West.
Gharbi (A.) Western.
Ghi (H.) Clarified butter.
Girik (K.) Hill.
Gök (T.) Blue.
Göl (T.) Lake.
Göz (T.) Fountain; arch of bridge (lit. eye).
Gumbet (T.) Small domed shrine.
Gund (K.) Village.
Gurmah (in genitive relation Gurmat) (A.) Canal, channel.

Hadrah (A.) Commercial mission.
Haji (Hajji) (A.) The title assumed by a Moslem who has performed the pilgrimage to Mecca.
Hajj (A.) The pilgrimage to Mecca; pilgrim caravan.
Hamād (A.) Barren (region), used of the Syrian Desert.
Hammām (plur. Hammāmān) (A.) Bath.
Hamrīn (A.) Red; plur. of Ahmar (q. v.).
Hāwi (A.) Used in Tigris Valley for a flat foreshore between the river and the side of the valley.
Hisar (T.) Castle.
Howeir (A.) (Khuwair). Diminutive of Khōr, q. v.

Ibn (A.) Son.
Idhrah (A.) Mealies.
Imām (A.) Religious leader; tomb of Imām.
Imāmzādeh (A.) Tomb of Imām.
Irmak (T.) River.

Jāmi' (A.) Friday mosque.
Jebel (A.) Hill, mountain.
Jezīreh (A.) (in genitive relation Jezīret). Island; Mesopotamia.
Jirf (Jurf) (A.) Cliff.
Jirjib (A.) Stream-bed dry in summer.
Jisr (A.) Bridge.
Juss (A.) Gypsum; gypsum mortar.

Kaimmakam (T.) Administrator of a Kaza (q. v.).
Kani (K.) Spring, well.
Kapu (T.) Gate.
Karez (P.) Underground water-channel.

Kaza (T.) Turkish administrative district, subdivision of a Sanjaq (q. v.).
Kebīr (A.) Great.
Kefr (A.) Village.
Kelek (A., &c.) Raft of beams and branches, supported on inflated skins, of a kind used on rivers of Northern Mesopotamia (especially the Middle Tigris).
Keli, Kel (K.) Pass.
Kesik (T.) Broken.
Khabrah (A) Depression in which rain-water collects.
Khāchiyeh (A.) Light summer cloak.
Khān (A., P., &c.) Inn, caravanserai (spelt khan except with names).
Khān (P.) Lord, chief.
Kharāb (A.) Ruin.
Khidhr (A.) Prophet (used of Elias and a few others).
Khirbeh (A.) (pronounced Khŭrbeh, in genitive relation Khirbet.) Ruin.
Khōr (A.) Sheet of water, bay, inlet, marsh; also used by Bedouin to denote salt-encrusted ground.
Kilisseh (T.) Church.
Kināseh, Kunāseh (A.) Shoal or sandbank.
Kirk (T.) 40, numerous.
Köi (T.) Village.
Köprü (T.) Bridge.
Küchük (T.) Little.
Kūh (P.) Mountain.
Kūt (A.) Fort.
Kutal (Kotal) (P.) Col.

Mā, often pronounced Moi (A.). Water.
Ma'den (T.) Metal, mine.
Maheileh (A.) River sailing-craft of large size used in Irak.
Maidān (A.) Open space, plain.
Malik (A.) King, chief.
Mamur Turkish subordinate departmental official.
Mār (S.) Lord, master.
Māsh A kind of vetch or pea.
Mashhūf (A.) A light reed or plank canoe covered with bitumen used on the marshes of Southern Irak.
Mazār (A.) Shrine.
Medīneh (A.) (plural, Medā'in). City.
Merkez (A.) Head-quarters.
Mezjid (A.) Place of prayer; small mosque.
Mudir (T.) Administrator of a Nahiye (q. v.).

Mujtahid (A., &c.) Shiah religious authority.
Mutessarif (Mutesarrif) (T.) Administrator of a Sanjaq (q. v.).

Nahiye (Nāhīyeh) (T.) Turkish administrative district, subdivision of a Kaza (q. v.).
Nahr (A.) River, canal.
Naqīb (A.) Leader, head of community, local head of Seyyids (q. v.).
Naqībzādeh (A.) Son of a Naqīb.
Naur (Nā'ūr) (A.) Water-wheel, used in irrigation.
Nizam (T.) Turkish regular troops.
Nullah (H.) Water-course.
Nuqtah (A.) Police post.

Pā (P.) Foot.
Pīr (P.) Old.
Pul (P.) Bridge.
Punār (T.) Spring.

Qabr (A.) Tomb.
Qal'ah (in genitive relation qal'at) (A.) Fort.
Qanāt (Qanāh, plur. qanawāt) (A.) Canal, water-channel, subterranean conduit.
Qanātīr (A.) *see* Qantareh.
Qantareh (plur. qanātīr) (A.) Bridge.
Qara (T.) Black, great.
Qasr (A.) Palace, castle, fortress, walled village.
Qishlāq (A., &c.) Barracks.
Qubbeh (A.) Dome, cupola; small domed shrine.
Quffeh (A.) Coracle used on rivers of Central Mesopotamia.
Quru (T.) Dry.
Qūyū (T.) Spring, well.

Rais (Ra'īs) (A., &c.) Chief.
Ras (Ra's) (A.) Head, promontory.
Rayah Subject; used to denote that part of the population of the Turkish Empire which pays taxes direct to the Imperial Government (cp. Ashīreh, above).
Reāl (A. Riyāl) The Maria Theresa dollar, worth about 2*s*. These coins, though still being minted, all bear the date 1788. They are the usual medium of circulation in Arabia.
Redīf (A.) Turkish reserve force.
Resh (K.) Black.
Ribāt (P.) Inn, caravanserai.
Rūdbār (Rubar) (K.) River.

Safīneh (A.)	Large-sized sailing-craft, used on Lower Tigris and Euphrates.
Saghīr (A.)	Small.
Sājeh (A.)	Small boat.
Sanjaq (T.)	Turkish administrative district, usually a subdivision of a Vilayet, q. v.
Sarīfeh (A.)	Reed and mud hut of marsh Arabs.
Ser (Sar) (P.)	Head, summit.
Serai (Serā'i, Serāyeh)	Used in Mesopotamia of Government buildings; in India and Persia it is used to mean caravanserai.
Serdāb (A.)	Underground room (for protection against the heat of summer).
Seyyid (A.)	Moslem claiming descent from the Prophet.
Sha'īr (A.)	Barley.
Shakhtūr (A.)	Large flat-bottomed boat used for down-stream navigation on Middle Euphrates.
Shamāl (A.)	North, north wind.
Shāmiyeh (A.)	Used of the l. bank of the Middle Euphrates (towards Esh-Shām, Damascus).
Sharq (A.)	East.
Sharqi (A.)	Eastern.
Shatt (A.)	River-bank, river.
Sheikh (A.)	Chief (of tribe or subtribe); also used of religious leaders.
Shiah (Shī'ah) (A.)	*Adj.*, professing, or pertaining to Shiism, one of the two great divisions of Islam.
Shōk (A.)	Camel-thorn.
Shu'eib, Sha'īb, Shi'b, Shāib (A.)	Ravine, small water-course.
Shuyūkh (A.)	Plural of Sheikh (q. v.).
Spī (K.)	White.
Stanga (?)	Path built out from or cut in the rock, in the form of steps.
Su (T.)	Water, river.
Sudd (A.)	Dyke, embankment.
Sunni	*Adj.*, professing, or pertaining to Sunnism, one of the two great divisions of Islam.
Sūq (A.)	Market.
Tang (P.)	Defile, gorge.
Tāsh (T.)	Stone.
Tekīyeh (A.)	Hostel for pilgrims.
Tel (Tell) (A.)	Mound, hill.
Tepeh (T.)	Hill.

Tezek	Cow or other dung used for fuel.
Tibbīn (Tibn)	Straw.
Tulūl (A.)	Plural of Tel (q. v.).
Tura (Tur) (S.)	Mountain.
Umm (A.)	Mother (used, in genitive relation, to denote possession).
Veiran (T.)	Ruined, ruin.
Vilayet (T.)	Province of Turkish Empire, under a Vali.
Wādi (A.)	Water-course, bed of stream, river-valley (spelt wadi except with names).
Waqf (A.)	Property held (actually or nominally) in trust for religious purposes.
Wazir (A.)	Chief minister or ruler.
Yāilā (T.)	Summer pasture-grounds.
Yeni (T.)	New.
Yuqāri (T.)	Upper.
Zaptieh (T.)	Member of armed police force.
Ziyāret (P. &c.)	Pilgrimage, place of pilgrimage, sanctuary, usually a tomb.
Zozan (K.)	Summer pastures.

APPENDICES

A.—Notes on Weather on the Tigris.
B.—The Control of the Tigris Water.
C.—The Control of the Euphrates Water.
D.—Oil-fields of Mesopotamia and the Persian Frontier.
E.—Note on Mules.

APPENDIX A.—NOTES ON WEATHER

The record is for the months January—August

Month.	Temperature (mid-day) F°.	Weather.	Rain.
January	As low as 45°.	Cold.	On Jan. 9 and 10, 1916, rain made movement difficult: air reconnaissance impossible owing to rain and wind.
February	85° (Max.)	Warm by day: cold nights.	Heavy rain on Feb. 10, 1916, followed by fog.
March	90°	Hot by day: cool nights.	Rain at Basra, March 12: violent thunderstorm, wireless interrupted.
April	Temperature may be over 100°.	Hot by day: nights become warmer.	Heavy thunderstorms and rain.
May	108° (Max.)	Hot by day: nights become hot.	No rain.
June	114° on June 9 and 21.	Very hot by day and night.	Do.
July	117° on July 11. 121° on July 16.	Do.	Do.
August	No record: slight fall.	Do.	Do.
September	No record: over 100°.	Do. (but nights less hot).	Do.
October	100°	Hot in daytime: nights begin to be cool.	Do.
November	No record.	Cool by day: cold nights.	First winter storms late in month.
December	As low as 45°.	Cold.	Rainstorms.

ON THE TIGRIS

1916 and September—December 1914–15.

River.	Floods.	Remarks.	Month.
Regular rise (compare December) begins. In 1916 Tigris touched overflow level temporarily on Jan. 21 and 22.	Movement stopped near Sheikh Sa'ad owing to increasing floods, Jan. 22, 1916.	Stormy weather should be expected. River begins to rise.	January
Steady rise at Amara: rise of about 1 ft. between Feb. 15 and 29, 1916. Rise of 6 ft. at Wādi.	Increasing.		February
Highest level reached at Amara on March 26, 1916. River above overflow level from March 18. Current from Wādi to Amara in middle of month, $4\frac{2}{7}$ m.p.h.: on March 24–26, $3\frac{1}{4}$ m.p.h. (slower pace due to adverse winds).	Floods at their worst in this month and next. British and Turkish trenches at Kut flooded on March 25, 1916.	Rise of river followed on thaw and rainfall in country SW. of Urmia, March 1–2.	March
In 1916 river at Wādi rose rapidly till April 6, when it passed highest flood level.	Floods at their worst.		April
River steadily falling.	Floods decreasing steadily from about middle of month.		May
Do.	Floods decreasing.	In 1916 the *Shamal* (cool N. wind) failed to appear at its usual time, about the middle of June: it did not begin till July 21. See note on *Shamal*, p. 444.	June
Do.	Do.		July
Do.	Do.		August
Do.	Do.	Weather begins to be less trying.	September
At lowest levels.	Dry.	Though hot at midday, weather suitable for operations throughout 24 hours.	October
Do.	Do.	Do. Blankets needed. Stormy weather may come at end of month.	November
Irregular rise at varying periods, due to rain up-country. In 1915 maximum rise was about 1 ft., and highest level was maintained for one day.	At end of December 1914 floods began to appear near Kurna: this was exceptional.	North wind and rain may interfere with operations.	December

Note on the Summer Shamal (North Wind).

The main period of the summer *Shamal* is about 20–30 days in length, but it is usually interrupted by a few short breaks. This main period begins as a rule in the first half or middle of June, and is followed by a few short periods in July and August. In 1916 the main period began extraordinarily late (July 21st: see Notes on Weather, above). The *Shamal* in some degree mitigates the great summer heat, and contributes to the decrease of the floods.

APPENDIX B

THE CONTROL OF THE TIGRIS WATER

Main Causes of Present Conditions

The main causes of the present condition of the lower Tigris may be summarized as follows :—

(i) The bed of the Tigris between Samarra and Kurna is incapable of carrying the whole, or anything like the whole, of the spring flood (March, April, May). Heavy rain may in some years cause the river to touch overflow level for short periods in January or February, or even (exceptionally) in December.

(ii) The river is subject to very sudden and violent rises in March and April, when its discharge per second at Baghdad may for short periods be 18–20 times the normal discharge per second in the months of low supply, and more than twice the average discharge per second in the high flood month of April. Sharp but less serious rises may occur irregularly in December, January, and February as the result of heavy rain over a wide area. (Local rain alone is said to have no appreciable effect.)

The velocity of the river in flood is about 4 m.p.h. on an average, but may be considerably more (certainly 6 m.p.h. at Baghdad) in a high rise.

(iii) The Tigris carries a great amount of sediment, and is especially turbid in its high rises.

(iv) The soil of the Tigris 'delta', which begins in the neighbourhood of Beled, some 12 m. below Samarra, is a soft alluvium.

(v) From the neighbourhood of Mansūriyeh, about 40 m. by river above Baghdad, the country on either side of the river is generally below high flood level, and the transverse slope away from the river is comparatively steep.

(vi) While the ancient irrigation system of the Tigris has fallen into utter ruin, no adequate works for the improvement of navigation, for irrigation, or for protection against excessive floods have been constructed by the Turkish Government, and, on the other hand, the local damming and cutting, carried on sporadically by the Arabs, has not been controlled.

Thus, (*a*) the river has not been properly trained, so that it covers in low supply a width of bed which its water cannot scour out, and in which much silt is deposited: hence the shifting sand-banks, which are especially numerous between Baghdad and Kut.

(*b*) The existing *bunds* are generally neither strong enough nor extensive enough to give the needed protection against flood, nor have they been kept in regular repair.

(*c*) The existing canals, unscientifically devised, lacking barrages and regulators to control the diversion of the water, and inadequately maintained, are often the means of drowning the areas which they were meant to benefit.

Conditions from Samarra to Kut

Introductory

The conditions from Samarra to Diyāleh and those from Diyāleh to Kut will be dealt with separately. In each case some account will be given of the general character of the river, of the lie of the land on either side of the river, of the extent to which the land is flooded under normal conditions, and of the possibilities of causing floods by breaching or damming.

It must be premised, first, with regard to 'normal' flooding, that the way in which the Tigris spills its surplus water, and the extent, depth, &c., of the inundations, vary more or less from year to year, and that exact details with regard to former inundations are wanting. The information therefore on 'normal' flooding will be only very general.

Secondly, there are a very great number of places on either bank of the river where inundations could be caused in flood-time by breaching the banks. In fact, it may be said that when the river is in high flood this could be done with more or less effect almost anywhere from Mansūriyeh to Kut, and, further, Euphrates water could be used for flooding the country on the right bank of the Tigris (see Appendix C). On this point, therefore, only general indications will be given. Information as to details is very incomplete and might easily be misleading. A full report on the possibilities of flooding could be based only on exhaustive surveys and personal examination of the ground by a hydraulic engineer.

Thirdly, while mere *bund*-cutting could cause an effective inundation only if carried out during short periods when the river is in high flood, a dam even in the low-water season would cause far greater inundations than would result from a simple breaching of the banks in flood-time.

Fourthly, if the floods were caused merely by the destruction of banks and breaching of *bunds*, they could not be detrimental to the navigation of the river down-stream: they would only be obstacles to movement by land. Such floods would make no difference to the navigation of the Tigris in low supply, and would make navigation in flood-time somewhat easier. In order to prevent navigation down-stream of the diversion it would be necessary to dam the river.

Fifthly, no preventive measures against a flooding of the country by an enemy could be taken by a force on the Tigris down-stream of the enemy position, and not within striking distance of the point where they chose to divert the water. All that could be done would be to protect limited areas by means of *bunds*, and under certain circumstances to provide escapes for at least part of the water into areas where it would cause less inconvenience. The only way to make sure against such flooding would be to hold the head of the Tigris delta, and also to hold the Euphrates up to Hīt.

Sixthly, with regard to damming the river: (1) it would not be impossible, but under the present war conditions would be exceedingly difficult. It would need much preparation and labour. The news that it was being attempted would spread like wildfire among the natives, for the down-stream Arabs would be ruined by such a work. Early intelligence of it would, therefore, almost certainly be received. It would probably be difficult to get Arab labour for the purpose.

(2) The most favourable time for the building of a dam on one of the Mesopotamian rivers would be in the months when the water is falling. The reason, of course, is that as the dam progresses and the channel available for the water decreases, it is of great advantage that the quantity of water in the channel should also decrease. (This holds good both for a stone dam and for one of earth and brushwood.)

(3) No hard material (stone) is readily available below Baghdad, and the method of construction would probably be the one usually adopted in Mesopotamia, namely, with earth and brushwood; a method well known to the Arabs. A dam of this kind is carried out from one or both banks, and its crest must be continually kept above water level.

(4) It would probably be best to begin such a dam at the time when the river is beginning to subside (say, early June). Provided that sufficient preparations had been made in the previous months, a dam then begun could be closed in low-water season (say, October).

(5) The difficulty of damming would, in the present circumstances, be great even in the favourable season, June–October. The difficulty

would increase if, and in proportion as, the volume of the river increased in the time just before the dam was completed. It may, therefore, be said that any damming operation would probably be successful, if at all, only on condition of falling approximately in the period June–October.

From Samarra to Diyāleh

For the first 12–15 m. below Samarra the Tigris flows over a bed of shingle, sand, and clay, with occasional outcrops of conglomerate forming small rapids. In the neighbourhood of Beled it breaks into two or three channels past a group of islands, and thenceforward its bed is of alluvium. Near the islands its current is very rapid in flood. At Mansūriyeh it carries in very high floods a discharge 'out of all proportion' to what can be discharged by the river-bed at Baghdad. Down-stream navigation by *kelcks* (rafts) is easy, though sometimes very slow owing to contrary winds. *Safinehs* (large native sailing-boats) of 8 tons burden can ascend to Samarra except in high flood: in low water they might have to be got over shallow places above Kazimain by unloading their cargoes. Steamers of 4 ft. draught can apparently ascend to Samarra during the flood season, though they would not be able to make head against a very violent rise.

The Country on the Right (West) Bank.—Down to the head of the Dujeil Canal, 9 or 10 m. below Samarra, the country on the right bank is fairly high-lying, and is above high flood level, except at a depression running away from the river at Istablāt. Between the head of the Dujeil and the Nahr Tarmīyeh (opposite Mansūriyeh), there is a belt of more or less high ground, but to the south of this belt the country is below high flood level, and a certain amount of water finds its way in spring along the Dujeil and its branches. From the Nahr Tarmīyeh down to the country opposite Diyāleh, the land lying westward from the river (as far as the desert plateau north of Lake 'Aqarqūf, and, farther south, to within a few miles of the Euphrates) is all below the high flood level of the Tigris with the exception of a few isolated patches, *tels*, embankments, &c. The Euphrates, W. of Baghdad, is some 16–20 ft. higher than the Tigris, so that its flood levels here command practically all the country between the rivers south of the main desert plateau that ends north of Lake 'Aqarqūf. The chief exceptions are the island of high-lying desert E. of Fellūjeh, and a similar patch of desert between the Latīfiyeh and Iskanderiyeh canals. A depression between the two rivers runs in a SSE. direction from the southern end of 'Aqarqūf. The line of its lowest levels is roughly parallel to the general course

of the Tigris, the distances between them varying here from 4 to 8 m.

The r. bank of the Tigris below the Nahr Tarmīyeh is fairly well provided with *bunds*, and there are a number of embankments protecting Baghdad West (i. e. the part on the r. bank of the Tigris) on its landward side. If the Tigris *bunds* and the dams or regulators on the heads of the Euphrates canals are kept intact the country round Baghdad is dry: if the *bunds*, &c., break, the country will be flooded to an extent varying with the size and position of the breaches. Under *normal* conditions the country between Baghdad West and Lake 'Aqarqūf may be flooded in spring, when access by land to Baghdad may be possible only along embankments. (On one of these embankments runs the Baghdad—Samarra railway.) To northward this inundation may stretch many miles, southwards it usually does not go much beyond the iron bridge over the Kharr Canal. It is fed by overflows from the r. bank of the Tigris and occasionally from the Saqlāwiyeh Canal from the Euphrates (see Appendix C). South of the Kharr bridge, along the Baghdad—Museyib road, there is a belt of country which is usually dry in flood-time. South of this again, at about 10 m. from Baghdad, Route Reports of 1903 and 1905 mention a swampy area, under water in spring and extending for some 5 m., after which higher and drier ground is again reached. This area is marked as liable to flood on Indian Degree Map, sheet 2 C: but later information makes it doubtful whether it has ever been flooded since 1910. It must be remembered, however, that so far as the neighbourhood of Baghdad West and that quarter of the city itself have been free from flood this has been due to the maintenance of the *bunds*, &c., by the authorities. In an abnormal flood, or if proper precautions have not been taken, the whole country and most of Baghdad West itself may be flooded (as in November–December, 1914).

It follows from what has been said above that by breaching the Tigris banks and *bunds*, and also by diverting water from the Euphrates, the whole of this country lying S. of Beled between the Tigris and the desert plateau, and farther S. again between the Tigris and the Euphrates, could be so inundated in flood-time as to leave only scattered islands of dry ground. A dam or dams in this part of the Tigris might cause an inundation stretching down to the Hai.

The Country on the Left (East) Bank.—From Samarra to Sindiyeh the country on the l. bank is on the whole beyond the reach of the Tigris floods. The swamp behind the old Qaim Canal seems to be fed by water from the hills. Between Sa'diyeh (4 m. below Sindiyeh and Mansūriyeh the land near the Tigris sinks to below the flood

level of that river, and southwards from Mansūriyeh past Baghdad to the Diyāleh junction there runs a depression which can be flooded from the Tigris. Down to a point perhaps some 8 or 9 m. NE. of Baghdad, this depression is bounded on the E. by higher ground which is not liable to flood from the Tigris. But the whole country S. of Sindiyeh between the Tigris and the Diyāleh is commanded by the Diyāleh's flood levels, and is irrigated chiefly by a net-work of canals from that river. The angle between the last reaches of the Diyāleh and the Tigris S. of Mo'adhdham is low ground commanded by both rivers.

The Tigris from Mansūriyeh downwards is fairly well bunded on its l. bank, though spills occur at certain points, e.g. at Yehudiyeh. Baghdad, with the riverside land to N. and S. of it from Mo'adhdham down to Qarāreh, is now protected by a long earth embankment, within which are smaller *bunds*. The protective works on the Diyāleh are much less considerable. In normal years the low-lying ground NE., E., and SE. of Baghdad is inundated chiefly from the Diyāleh, owing to the greater care bestowed on the Tigris *bunds*. The Diyāleh in flood-time carries a very considerable volume of water down to the Tigris, though nearly all its supply is taken for irrigation above Bāqūbeh. (In order to divert the Diyāleh water into the Khalis Canal for purposes of irrigation, a dam is made every year across the Diyāleh near the head of the Khalis.) If the *bunds* protecting Baghdad East are broken, as well as those on the Tigris and the Diyāleh, the greater part of the city E. of the river might be flooded, only a narrow strip along the bank being left dry. This, however, would be abnormal (it happened in November–December, 1914). If the city is flooded the water would come from the landward side, the river-fronts in Baghdad itself being too high and solid to allow of a spill through them.

It is clear that in flood-time practically all the country E. of the Tigris from Sindiyeh down to the Diyāleh junction could be inundated from the Diyāleh, or from the Tigris, or from both rivers, if their banks and *bunds* were broken.

From Diyāleh to Kut

On this section of its course the river is very winding, so that while the distance by road from Diyāleh to Kut is 103 m., the distance by river is about 184 m. The width of the stream is about 400 yds. on an average. The velocity of the current is generally $3\frac{1}{2}$–$4\frac{1}{2}$ m.p.h. in flood, and about 1–$1\frac{1}{2}$ m.p.h. in low water. The depth is about 25 ft. in flood, but in low supply there are some

reaches where only 3 ft. of water is to be found, and navigation is much impeded by shifting sand-banks. At one of the worst reaches, in the loop S. of Ctesiphon, the Turks have made a new cut. Dredging is useless in this part of the river, as the silt banks up again immediately. The river needs training, but this, to be really effective, would require works on a very considerable scale. The banks are fairly high, being about 20–16 ft. above low-water level.

The Country on the Right Bank.—The land on the r. bank slopes away to the depression mentioned above as running between the Tigris and the Euphrates from Lake 'Aqarqūf. This depression here runs about SE. (the lowest levels being apparently found at distances of 4–18 m. from the Tigris) as far as a point about W. of Bogheileh. Thence its course seems to bear more to the S., to join the shallow valley which runs southwards from the r. bank of the Tigris immediately below Bogheileh. This valley keeps W. of the Shatt el-Hai, leading towards the Euphrates. It is to be observed that the Euphrates at Hilla is still higher than the Tigris at 'Azīziyeh or Bogheileh: but the Tigris from Bogheileh to Kut is considerably higher than the Euphrates from Samāweh to Nāsirīyeh. The Hai Canal used to carry water in the flood season from Kut to Nāsirīyeh, but very little of its flood supply now reaches the Euphrates near the latter place: its main southern outlets seem to be the Nahr Beidhā and the Nahr Hamzeh, which run into the Hammār Lake.

The dyking on the r. bank of the Tigris in this section is insignificant. Under normal conditions the river in the flood season forms a number of inundations as far as the depression between it and the Euphrates, and in the valley S. of Bogheileh. In high floods, for instance, a considerable spill might take place at the southern end of the loop below Ctesiphon. But most of the marshes between the rivers seem to be fed by Euphrates water coming from the higher levels above Diwāniyeh; and this water might even reach the neighbourhood of the Tigris. The marshes, if not renewed from the rivers, gradually turn salt and evaporate, having no adequate outlets.

Down to Bogheileh, practically the whole country from the Tigris to the farther slope of the depression between the rivers could be flooded by a breaching of the Tigris banks. The most favourable points for breaching would usually be on the outer side of southerly bends. At one or other of these bends a dam or dams might be so placed as to turn the river water into the depression between Tigris and Euphrates. The water would force its way down this depression into the shallow valley S. of Bogheileh and so to the Euphrates,

and would also probably flood most of the country between the rivers. Such a dam would be very likely to cause also some breaking of the l. bank *bunds*.

It may be noticed with regard to the flooding of the country from this part of the r. bank that the high banks of the old Melcha Canal, which below the loop S. of Ctesiphon runs roughly parallel with the river, at distances of 1–12 m. from it, are no longer an effective barrier to inundation, as they are broken in various places, the gaps being sometimes half a mile wide.

Euphrates water could be used for flooding the country down to the Tigris. (See Appendix C.)

As regards the r. bank below Bogheileh, Sir W. Willcocks suggests that by shutting off the Tigris at the Bogheileh bend, or at one of the two bends immediately below, or at all three, a great mass of water could be sent southward down the Bogheileh valley. This would have to force its way through the Euphrates opening below Nāsirīyeh (see further p. 468), and would 'probably worry Nāsirīyeh considerably'. A dam in the Tigris below the head of the Shatt el-Hai would not send much water down to the Hai itself, but would pour water through an opening at the second bend below the bend at Bogheileh.

The Country on the Left Bank.—Parallel with the Tigris from Diyāleh to Kut runs a depression liable to flood. To a point about 12 m. N. of 'Azīziyeh the raised bed of the old Nahrawān Canal runs along the northern side of this depression, at a somewhat higher level than the Tigris bank, and at distances of 10–16 m. from the river. North of 'Azīziyeh it turns in towards the Tigris.

Considerable spills may take place from the left bank of the Tigris, and there are large patches of flood here in spring. In a high flood the country near the bank is reported to be so extensively inundated that it is only at three or four places that large dry areas can be counted on (Kut, Baghdādiyeh, and Ctesiphon are mentioned).

The long line of marshes which, beginning near Beledrūz, runs in a S. by E. direction and ends in the Khōr Suweikīyeh N. and NE. of Kut, is fed almost wholly by streams from the Persian hills and by water from Diyāleh. But Tigris water from above Kut is believed to enter the Suweikīyeh in high flood, if *bunds* break.

The depression lying along the left bank of the Tigris could be flooded both from that river and from the Diyāleh. The Nahrawān Canal, however, at least where it is above the Tigris levels, between the Diyāleh and 'Azīziyeh, affords ordinarily a dry road throughout the year, and would appear to be fairly safe from floods caused by breaching the Tigris or Diyāleh banks. It does not seem certain

that the Nahrawān would be safe from a flood caused by damming, for the water might then perhaps find its way through gaps or weak places in the high banks of the canal.

The available evidence from surveys is not full enough to determine whether a dam on the Diyāleh near the head of the Beled-rūz Canal could send water along, or close to, the line of that canal, and thence into the depression of El-Merj and Suweikīyeh, so as to cause the flooding of the right bank of the Tigris near Kut.

Conditions from Kut to Kurna

The main features of the river in this part of its course can only be very briefly sketched.

From Kut to Amara the river is about 350 yds. broad with a depth of 26 ft. in flood and 5–7 ft. in low supply. The velocity of the current is generally about $3\frac{1}{2}$–$4\frac{1}{2}$ m.p.h. in flood, and 1–$1\frac{1}{2}$ m.p.h. in low water. The river is navigable for steamers of 3–6 ft. draught according to the season. There are shifting sand-banks in the bed, especially between Sheikh Sa'ad and 'Ali el-Gharbi. The height of the banks steadily diminishes. At Kut they are about 16 ft. above low-water levels; at 'Ali el-Gharbi, about 13 ft.; at Amara, about 7 ft.

In flood-time the overflow water forms marshes just beyond the immediate neigbourhood of the banks. These *khōrs* become larger and more continuous as one goes down-stream.

In a high flood there is an almost continuous line of marshes several miles wide from Sheikh Sa'ad on the right bank, and from 'Ali el-Gharbi to Amara on the left bank, where the *khōrs* are also fed by streams from the hills.

As the floods subside, the top of the water may filter back into the river: more water drains southward into the marshes below Amara, and much is lost by evaporation. The greater part of the marshland dries up in the course of the summer.

On the right bank, 11 m. by river above Amara, is the large Biteireh Canal, which deprives the Tigris of water even in the low season, and may take perhaps rather more than a third of the river's supply. On the left bank immediately above Amara town is the common head of the Jehaleh (Chahela) and Musharreh canals. See further below on this canal-head.

Beyond conservancy regulations to control canal-cutting, &c., by the natives, there is little to be done to improve conditions on this part of the river, short of training it thoroughly by works on a considerable scale. Merely local improvements might easily cause

worse conditions in reaches which before had presented no difficulty. Dredging is said to be useless, as in the stretch from Diyāleh to Kut (see p. 451). The marking out of the channel may improve depths, as the use of one channel by all crafts helps to prevent the silt from banking up. At least between Sheikh Sa'ad to 'Ali el-Gharbi the best channel is now marked out and buoyed. For the improvement of land communications, and the protection of limited areas, bunding is, of course, possible, but account must be taken of the probable effect of such work on the neighbourhood.

Between Amara and Qal'at Sālih an enormous amount of water flows off into the great permanent marshes on either side of the river, so that whereas the discharge of the Tigris above Amara in h.w., 1916, was found to be 32,574 cusecs, its discharge at Qal'at Sālih was only 4,003 cusecs. The Jehaleh-Musharreh head takes off not much less than half the water in the river, but a bar which has formed across it is believed to be an effective safeguard against a diversion of the river down the Jehaleh bed (which is lower than that of the Tigris). This bar acts as a natural weir, but a barrage with lock and regulators is needed for this canal. The principal canals below Amara are the Majarr el-Kebīr on the right bank and the Michrīyeh on the left: these draw off water from the river even in low supply. The Majarr el-Kebīr needs some kind of barrage, but in the summer of 1916 it was not considered worth while to construct an emergency weir there immediately. The Michrīyeh was taking half the Tigris water, and it was recommended that a weir should be at once constructed at its head.

For the rest, the prospects of improving the river on this stretch are apparently much the same as in the stretch from Kurna to Amara.

From Qal'at Sālih to Ezra's Tomb the Tigris flows through the 'Narrows', where it is reduced, by loss of water above, to a width of some 75 yds. Its depth is here about 13 ft. in high flood and about 5 ft. in low supply.

Navigation is here more difficult than on any other stretch of the Lower Tigris. This difficulty is caused, not only by the narrowness of the channel, but also by the frequent sharp bends. Up to 1916 conditions had been made worse by the Arabs of the neighbourhood, who cut irrigation channels at the bends and threw out brushwood groynes to reclaim land on a falling flood. It was recommended that these practices should be stopped, and that the narrowest channels should be dredged. The digging of new cuts across the bends would not be safe unless a careful survey had made it possible to foretell what would be the effect on the river farther

down-stream. The weir at the Michrīyeh head, if completed, may help to improve navigation below Qal'at Sālih. Sir William Willcocks in 1905 recommended training the river by willow mattresses and by massive blocks of fused brick.

Between Ezra's Tomb and Kurna much of the water that had escaped from the Tigris above comes back into the river, which therefore broadens and deepens as Kurna is approached. Some of the Tigris water from the right bank also passes into the Hammār Lake or the Old Channel of the Euphrates, and rejoins the main stream (the Shatt el-'Arab) by one or other of the Euphrates mouths (either at Kurna or at Gurmat 'Ali).

It may be observed that some of the conservancy measures mentioned above would temporarily affect the habits of the natives, who might make a grievance of this.

Note on Sir W. Willcocks' Scheme for the Control of the Tigris Water

(1) For the fully developed control of the Tigris water the fundamental necessity is a system of works, including a barrage and an escape, at the head of the Tigris Delta between Samarra and Beled. The reasons for this are:—

(i) In this neighbourhood the country begins to drop below the high flood level of the Tigris. At no lower point, therefore, would it be possible to insure against inundation by the Tigris floods. For such an insurance to be complete both a barrage and an escape are of course necessary.

(ii) A diversion of Tigris water at this point would enable large quantities of the flood supply of the river to be stored either in the Tartar depression (SW. of Samarra), or in the depressions of Habbāniyeh and Abu Dibs (SE. of Ramādiyeh), on the farther side of the Euphrates. Storage both of Euphrates and of Tigris flood-water on a great scale is absolutely essential to the development of the country, for Mesopotamian agriculture depends on perennial irrigation (owing to the season at which the floods occur), and the low supply of the rivers is not nearly sufficient to support extensive cultivation both in the districts up-stream of Kut and Diwāniyeh, and farther south (the Shatt el-'Arab country, &c.). Another argument for such storage might be the extensive irrigation of Upper Mesopotamia, which, according to Sir W. Willcocks, could conceivably deprive Irak of all the low supply of the Euphrates and a great part of the low supply of the Tigris. If Upper Mesopotamia were heavily irrigated by another Power, it would be necessary not only to store

flood-water for Irak, but also to have an agreement as to the division of the low supply between the two countries.

(2) Sir William Willcocks suggests that the Tigris escape should lead from Istablāt, about opposite the head of the old Qaim Canal, to the Tartar depression. If this depression, which has not yet been surveyed, should prove sufficiently large, a reservoir might be established here which would support the irrigation of the country between the rivers from Baghdad to Babylon. If it is not large enough to store all the Tigris water available, the escape could be carried on to the Euphrates reservoir at Lake Habbāniyeh, with which would then be connected, for the purpose of storing the additional water from the Tigris, the much larger depression of Abu Dibs (S. of Habbāniyeh). It is to be observed that the Abu Dibs has its outlet at its south-eastern corner, towards Kerbela: it would probably, however, be possible to get enough water for the higher levels by an outlet from the north-eastern end of Habbāniyeh, and by arrangements for raising the level of the water discharged from the south-eastern end of Abu Dibs. An outlet from the north-eastern end of Habbāniyeh, though not originally planned by Sir W. Willcocks, was designed before the war, and approved by the Turkish Government.

By means of some such reservoirs, Sir W. Willcocks calculates that 18 milliards of cubic metres of water from the Tigris and Euphrates could be stored, of which 12 milliards could be used for irrigation (the rest would probably be lost by evaporation).

He calculates the cost of a Tigris escape to Habbāniyeh, and of the new reservoirs in connexion with it, at £22,000,000. If the Tartar depression should prove large enough to take the whole of the water from the Tigris, the cost would fall, he considers, to £12,000,000. It would seem difficult, however, to calculate what would be the cost of such works in the new conditions which will have been produced by the war.

(3) The works in connexion with the Tigris, proposed by Sir W. Willcocks in 1911, are enumerated below: but it must be borne in mind that they were planned on the assumption that the Tigris escape and reservoirs would be beyond the resources of the Turkish Government. They are, therefore, as Sir W. Willcocks himself says, only makeshifts.

(i) The Beled Barrage, with the restoration of the Dujeil Canal system, irrigating the country between Beled and Baghdad.

(ii) An embankment on the r. bank of the Tigris from opposite Mansūriyeh to Kazimain, and an escape at Mo'adhdham into the depression E. of Baghdad, with an outlet into the Tigris below

Baghdad. In this way the Baghdad inundations, which without the Istablāt escape and Tigris reservoirs would still continue, were to be limited.

(iii) The disposal of the Diyāleh water. It is not necessary here to describe Sir W. Willcocks' alternative schemes for the Diyāleh. The principal difficulty in any such scheme appears to be that if Diyāleh water were to be used to irrigate another tract of country besides that which it at present supports through the Nahr Khalis (at present the best irrigated land in Mesopotamia), there would probably not be enough water for both areas in low supply. The main point, however, for present purposes is that in order to control the Diyāleh water it is necessary to hold the point where it breaks through the Hamrīn hills.

(iv) The country on the r. bank of the Tigris down to Kut to be irrigated by Euphrates water in the Right Tigris Canal: the banks of this canal to act as a dyke on this side of the Tigris: the surplus water to escape on the l. bank (this provision again presupposes no escape at the head of the delta).

(v) The Hai Canal to be restored and to be fed with Tigris water diverted by a barrage at Kut.

(vi) The river in the marshes to be trained, and its chief canals regulated as already described.

It is to be remembered that the developed irrigation of the country would mean the abandonment of navigation on the Tigris, as on the Euphrates.

General Conclusions Summarized.

The following main conclusions may be briefly recapitulated:—

(i) To make sure, under the present circumstances, against the artificial flooding from the Tigris of the country on both sides of that river, it would be necessary to hold the head of the delta between Beled and Samarra.

(ii) To make sure against the artificial flooding from the Euphrates of the country on the r. bank of the Tigris down to Kut, it would be necessary to hold the head of the Euphrates delta at Hīt. (See further Appendix C.)

(iii) To make sure against the artificial flooding from the Diyāleh of the country on both sides of that river, it would be necessary to go to the point where it leaves the Hamrīn Hills.

(iv) Apart from holding the rivers up to their deltas, the only counter measures to artificial flooding would be the protection of limited areas by *bunds*, and, if the levels made it possible, the pro-

vision of escapes for at least part of the water into areas where it would cause least harm.

(v) Artificial flooding by the breaching of banks and *bunds* would be easy almost anywhere when the river was in high flood. Damming could cause much more serious floods even in the low season, and could further ruin navigation down-stream, but it is on the whole unlikely, though not impossible, that a work on a sufficient scale to produce such results could be carried out under war conditions.

vi) Little can be done at present for the improvement of the river. palliative measures are most effective in the Narrows. For the thorough training of the river considerable works are necessary.

(vii) For the full control of the Tigris water by a developed system of works such as a Power permanently occupying Irak could carry out, it would be necessary to hold the head of the Tigris delta between Beled and Samarra, and the Tartar depression.

For the full control of the Diyāleh it would be necessary to hold its course up to a point where it issues from the Hamrīn Hills; and if it were found advisable to control the Adheim (not yet surveyed), it would be necessary, presumably, to hold the Band-i-Adheim in the Hamrīn Hills.

(Local irrigation schemes, planned without reference to a general scheme for the country and based on partial surveys, are inadvisable. Compare p. 470 below.)

(viii) The possession of the Euphrates up to Hīt would be essential for the development of the country between the river from Fellūjeh to Kut (Appendix C).

APPENDIX C

THE CONTROL OF THE EUPHRATES WATER

Introductory

The main causes of the present condition of the lower Euphrates are, on the whole, similar to those which determine the condition of the lower Tigris (see p. 445). They may be summarized as follows:—

(i) Insufficiency of the main bed (or beds) to hold the flood season discharge.

(ii) Heavy floods, including sudden and violent rises in March, April, and May. (The river begins to rise in November, and continues to increase gradually up to February or March. Local rainfall has little effect on the Euphrates.)

(iii) The presence of a great quantity of sediment in the stream, especially in flood-time.

(iv) The nature of the soil of the delta: a soft alluvium.

(v) The long neglect of adequate measures for irrigation and conservancy displayed by the Turkish Government in the past, and the primitive and ill-ordered methods of local irrigation practised by the Arabs.

The following points may be noticed:—

(*a*) The Euphrates floods are generally about a week later than those on the Tigris.

(*b*) The flood discharge of the Euphrates is less than that of the Tigris. At Baghdad the Tigris at its highest may discharge for short periods 7,000 cubic metres per second. The highest discharge of the Euphrates at Hīt is apparently about 4,500 cubic metres per second (or 4,000 cubic metres at Hindiyeh).

The low supply of the Euphrates is greater than that of the Tigris. In the months of low water the discharge of the Tigris at Baghdad may amount to about three-quarters of the discharge of the Euphrates at Hīt.

(*c*) As a waterway the Euphrates is decidedly inferior to the Tigris. In the low season, under the best conditions at present possible, there can be no through steamer-traffic between the Hindiyeh Barrage and the Shatt el-'Arab, nor even navigation by native craft of the larger kinds, unless they are very lightly loaded, and are ported in places.

The reasons for this inferiority of the Euphrates are:—

(i) There is more dispersion of water in branch channels and marshes on the lower Euphrates than on the lower Tigris.

(ii) The New Hindiyeh Barrage *necessarily* affects navigation downstream of it, and it and the Hilla Regulator *can* be used to interfere very seriously with navigation. Details are given below.

It may be noticed here that the old Hindiyeh Barrage near the head of the Hindiyeh Branch effectively blocks navigation, while the locks on the New Barrage and the Hilla Regulator are not wide enough for the larger classes of river-steamer.

(*d*) The remarks on the damming of the Tigris on pp. 447–448 are, in general, applicable to the Euphrates. But the following differences may be noticed:—

(i) The Hindiyeh Barrage is a ready-made dam which can at any time be used for the diversion of water from the Euphrates upstream of it.

(ii) The damming of the Hilla Branch would be easy at any season, as the water could always be shut off during the construction of the dam by the closing of the Hilla Regulator.

(*e*) The ground-levels along the Euphrates fall from 40 to 19 metres above sea-level between Fellūjeh and Diwāniyeh, while those on the Tigris fall from 34 to 17 metres between Baghdad and Kut. Between Diwāniyeh and Nāsirīyeh the levels fall from 19 to about 3 metres at Nāsirīyeh, and they range from about 3 to 2 metres between Nāsirīyeh and the Shatt el-ʿArab: whereas between Kut and Ezra's Tomb the Tigris levels range from 17 to 4 metres. An enormous amount of water leaves the right bank of the Tigris between Kut and Ezra's Tomb, and much of it finds its way into the Euphrates between Nāsirīyeh and the Shatt el-ʿArab. This inflow from the Tigris is one of the principal causes which have produced the great expanse of marsh and open water between Nāsirīyeh and Gurmat ʿAli.

Conditions from Hīt to the Hindiyeh Barrage

The river enters its delta at Hīt, and thenceforward flows over a bed almost wholly of alluvium, though at first there are a few outcrops of rock in it. The width of the stream varies from 500 to 150 yds. The current at Hīt is about 5 m.p.h. in high flood, and about 1½ m.p.h. in low water. This stretch of the Euphrates is navigable for river-steamers throughout the year, though until steamer-traffic had helped to clear the channel navigation on some parts of it might be difficult in the low season.

The Country on the Right Bank.—From Hīt to the neighbourhood

of Museyib, the high ground of the Syrian desert runs not far from the river. In places it is quite close to the bank, and it is never more than 5-6 miles away. The strip of country between the desert and the river is mostly below high flood level, and there are two openings in the desert plateau down which in flood-time Euphrates water may make its way. These two openings are:—(i) that at Ramādiyeh, leading to the Habbāniyeh Lake. This gap is about 7-8 miles broad: its mouth contains two isolated patches of high ground, the one behind, the other below, Ramādiyeh village. The opening affords a line for the Habbāniyeh Escape, which has its head immediately below Ramādiyeh, between the two patches of high ground. The escape canal runs into the Habbāniyeh depression, a salt lake about 12 miles distant and about 11 × 7 miles in area, which has been fed from Euphrates overflows in the past, and is now designed to serve as a storage reservoir. Up to the outbreak of the war no water had been let into the escape canal, as the outlet from tho Habbāniyeh (on its NE. side) had not yet been cut; but some trouble was necessary to prevent the flood-water of the river from entering the canal. (ii) The second opening in the desert plateau lies opposite the head of the Latīfiyeh Canal, about 20 miles by river above Museyib. It is about 5 miles broad at its mouth, and leads S. to the Abu Dibs depression, about 25 miles distant. Overflows take place down this opening.

A few miles north of Museyib the edge of the desert plateau turns away from the Euphrates, running WSW., while the general direction of the river is southerly. Below this point the plain of Kerbela stretches from the right bank of the river for about 20 miles westward, to where the desert begins again behind Kerbela. The central part of this plain is watered mainly by the Nahr Huseiniyeh, which leaves the Euphrates a short distance below Museyib, and runs to Kerbela, whence one of its branches passes by a gap in the high desert to the Abu Dibs Lake, while the other turns S. into the marshes known as the Khōr Huseiniyeh. All the plain of Kerbela is below the high flood level of the Euphrates.

When the river is in high flood, the low ground adjoining its right bank between Hīt and the Hindiyeh Barrage could be put under water at practically any point by a breaching of the bank or of the *bunds*. In the low season, the closing of the Hindiyeh Barrage, accompanied by a cutting of the bank up-stream, could flood the plain of Kerbela.

The Country on the Left Bank.—From Hīt to the head of the Saqlāwiyeh Canal there is a narrow but gradually widening strip of low ground between the left bank of the river and the edge of the

Jezīreh desert, which is above flood level. East of Saqlāwiyeh head is the southern end of the desert plateau of the Jezīreh, and downstream of this, the country between the Euphrates and the Tigris is for the most part below the high flood level of the Euphrates, which at Fellūjeh is about 20 ft. higher than the Tigris at Baghdad. There are, however, two considerable isolated patches of high-lying desert, one W. of Fellūjeh, between the Saqlāwiyeh and the Abu Ghoreib canals, the other just below the Latīfiyeh Canal opposite the second opening in the desert plateau on the right bank (see above, p. 461). The country between the Euphrates and the Tigris is watered by a number of large canals from the former. Of these the most northerly is the Saqlāwiyeh, already mentioned, the head of which is (or was before the war) blocked by an earthen dam. When this dam broke, as it sometimes did in the flood season, water entered the Saqlāwiyeh and added to the flood area W. of Baghdad. It had been reported that in 1916 the Turks were using the canal as a waterway. A recent report states that the Saqlāwiyeh is dammed *only* in very high flood. Before the war this was not the case: the fact may be that the Turks have now a regulator at its head. The most important of the other canals between the rivers are the Abu Ghoreib, the Ridhwānīyeh, the Mahmūdiyeh, the Latīfiyeh, the Iskanderiyeh, and the Museyib. The first four of these extend to within a few miles of the Tigris between Baghdad and the loop south of Ctesiphon. Part of their water may actually reach the Tigris, as is reported of the Mahmūdiyeh. All cross the Baghdad—Museyib road.

In normal high-water seasons there are floods along the left bank of the Euphrates (e.g. according to I.D. Sheet 2 C, between the Ridhwānīyeh and the Mahmūdiyeh), but the areas of inundation have been restricted by the damming of the Saqlāwiyeh, by the placing of regulators at the heads of some of the larger canals (for example, the Abu Ghoreib and the Mahmūdiyeh), and by the strengthening of the Euphrates bank at certain points by means of *bunds* (as between Fellūjeh and Khān Maqdam, and at the very dangerous curve at Museyib, a flood from which would have serious consequences).

The cutting of the left bank of the Euphrates could in high flood put under water almost the whole of the country between the rivers, from the southern edge of the main desert plateau southwards: the chief exceptions would be the isolated patches of high desert mentioned above. The opening of the head regulators on the larger canals in the flood season could also cause inundations.

The closing of the Hindiyeh Barrage in the *low-water season*, if

accompanied by a breaching of the river bank above, would cause extensive floods in this region, but probably not such as would reach so far N. as Baghdad. The floods would probably extend to the Tigris about opposite Ctesiphon, and thence downwards.

The closing of the Hindiyeh Barrage in the *flood season* would cause such an alteration in conditions that it is impossible to say to what distance the results would make themselves felt. So large a volume of water would be diverted that it might quickly make itself a new river-bed, or beds, and thereby lessen the areas liable to flood. (The new bed, or beds, would probably discharge into the present Hilla Branch.)

However, in any case, it is safe to say that the closing of the barrage in the flood season would cause very widespread flooding: and it is fairly safe to predict that it would make a large belt of country between the Euphrates and the Tigris impracticable to a land-force operating between the two rivers above Kut.

For the purpose of causing a flood to impede movement, the closing of the barrage in the high-water season would probably be an unnecessarily violent measure. It would be easier to direct water through particular breaches to particular areas by *regulating* the quantity passing through the barrage.

Conditions from the Hindiyeh Barrage to Samāweh

The Hindiyeh Barrage and the Hilla Regulator.—Immediately above the Hindiyeh Barrage the Euphrates bifurcates into two great branches (the Hindiyeh and the Hilla), which meet again 2–3 miles above Samāweh. It appears that from very early times some such division of the Euphrates has existed, the main volume of water having passed at some periods down the western, at others down the eastern branch. Some forty years ago the Hilla Branch carried by far the greater supply and was known as the 'Euphrates', while the Hindiyeh was only a 'canal'. Then the Hindiyeh head gradually widened (partly as the consequence of the closing of the Saqlāwiyeh), till it took the larger portion of the river water. This process continued, until the Hilla Branch was left dry in the low season. The Turkish Government constructed a weir (the 'Old Barrage'), about ½ mile below the site of the New Barrage. But this weir burst in 1903, and failed to check the drying of the Hilla Branch, though it continued to be (and probably still is) an obstacle to navigation. The New Barrage, completed in 1913, lies about 6 miles below Museyib. The old head of the Hilla, situated about

600 yds. below the New Barrage, has been blocked by an earthen dam, and a new head, with a regulator, has been made about $\frac{1}{4}$ mile above the New Barrage. The old bed of the Hilla, behind the new dam, contained water in 1914. It joins the new bed about $2\frac{1}{2}$ miles below the regulator.

The *Old Hindiyeh Barrage* is a weir of stone rubble which in 1914 had a narrow breach near the centre and another near the l. bank. No craft could pass it up-stream except in flood, when empty native boats of 20–30 tons could be hauled over at some risk. In low water 1914 the difference of water-level above and below the weir was 3–4 ft. The current through the breaches was then too strong to allow craft to be hauled up with any safety. In high water so long as there was 4–5 ft. of water over the weir loaded craft of 20–30 tons could with some risk be floated over it down-stream. In low water the passage down-stream was too dangerous for any but the smallest craft.

The *New Hindiyeh Barrage* is a straight dam 275 yds. long, provided with 36 gates or openings, 9 ft. 10 in. wide, so that the height of the water held up can be controlled. At the east side is a lock 26 ft. 3 in. wide, 180 ft. long, and spanned by a lift bridge. The barrage was built wholly on the left bank of the Euphrates, which was then diverted to the present channel, the old channel being stopped with an earthen dam at the W. end of the barrage. This new barrage forms a bridge suitable for fairly heavy artillery. The builders used to run 10–15 ton locomotives over it.

The *Hilla Regulator*, which is about 140 ft. long, forms a similar bridge over the new head of the Hilla Branch. At the W. end of the regulator is a navigable opening 26 ft. 3 in. wide, spanned by a lift bridge.

Navigation on the Hindiyeh and Hilla Branches.—It will have been noticed that the Old Barrage (as it was in 1914, and probably still is) would practically stop navigation into or out of the Hindiyeh Branch. Even if this were destroyed no river steamers of broad beam could pass through the navigation lock on the New Barrage.

Already before the war the normal regulation of water at the New Hindiyeh Barrage had affected the navigation of the river as far down as the Hammār Lake, where depths were sensibly decreased.

The New Hindiyeh Barrage when fully open has a capacity of about 4,000 cubic metres per second, the Hilla Regulator a capacity of 150 cubic metres at most. In the low-water season the Hilla Branch could be made to take about two-fifths of the Euphrates discharge by closing as far as possible the Hindiyeh Barrage and keeping the regulator open to its full capacity. In the flood season,

on the other hand, the Hilla Branch could not take off any appreciable quantity of the Euphrates discharge.

The results for navigation are:—

(i) On the Hindiyeh Branch.

The Hindiyeh Barrage being open, the Hindiyeh Branch would be practicable during most of the *high-water* season for craft drawing 3–3¾ ft., but there is a short period after the flood begins to go down when navigation is stopped owing to the silt in the channels of the Bahr-i-Shināfiyeh, which two or three weeks later are scoured out again. In *low water* the Bahr-i-Shināfiyeh would be impracticable for any vessels of greater draught than small *bellams*, or large *bellams* laden to one-third of their capacity. The closing of the Hilla Regulator in low water would improve navigation on the Hindiyeh: in the flood season the closing of the regulator would make no appreciable difference to the Hindiyeh.

By the closing of the Hindiyeh Barrage *in the low season* the Hindiyeh Branch can be deprived of water to a sufficient degree to prevent navigation on certain stretches. This could be done by closing the barrage to its safe limit (i.e. so as not to endanger the country up-stream) and opening the Hilla Regulator to its full capacity. *In the flood season* the Hindiyeh Barrage could not be closed so as to stop navigation without causing a disastrous flood.

(ii) On the Hilla Branch.

The Hilla Branch can be deprived of water, and all navigation on it can be stopped, by the closing of the Hilla Regulator, both in flood-time and in low water.

When in the low-water season the Hilla Regulator is fully open and the Hindiyeh Barrage is closed to its safe limit, navigation on the Hilla Branch would be possible from its head to Samāweh. Any steamers that could pass through the lock of the Hilla Regulator could get from there to Diwāniyeh: whether they could navigate below Diwāniyeh is not known. If the Hilla Regulator were fully open in the flood season, the Hilla Branch would be navigable, but if there was an exceptional rise, the country fed by the Hilla Branch would probably be flooded.

The Hindiyeh Branch as far as Kifl is about 200 yds. broad. It bifurcates below Kifl into the Kūfeh and Shāmiyeh channels, which both discharge into the Bahr-i-Shināfiyeh. The Shāmiyeh Channel (to east) is the better for navigation. It is about 150 yds. wide except where islands reduce its breadth to 50 yds. Navigation is hampered here and there by native dams. The Bahr-i-Shināfiyeh is a great reedy lake, which has for years been steadily silting up, and takes a large part of the Euphrates sediment. In the low season

it is dry in some parts and very shallow elsewhere. At its southern outlet near Shināfiyeh is a bar. Below the lake, about 12 miles down-stream of Shināfiyeh, the navigation channel leaves the old main arm of the Hindiyeh Branch, and makes a détour to N., passing through marshes by the Shatt Khansār, a difficult and tortuous channel 80–100 yds. wide. The Shatt Khansār leads back to the river about 5 miles above Samāweh.

The Hilla Branch has a better defined bed, but one very liable to silt up quickly, as the current is slow. As explained above, the main stream of the Euphrates used to pass this way, and has left a broad river-bed, at least as far down as Diwāniyeh: but the present channel of the Hilla Branch, within the old bed, is narrow. It is only 90–95 yds. wide near Diwāniyeh, and only 40–45 yds. wide between Imām Hamzeh and Samāweh.

The Country West of the Hindiyeh Branch.—From the barrage to about 5 miles above Kūfeh the right bank of the Hindiyeh Branch (or 'Kūfeh Channel' below Kifl) is bordered by a belt of plain, at first about 20 miles broad, but narrowing to about 6–7 miles in the neighbourhood of Tawarīj (Hindiyeh) and below. On the W., the plain is bounded by the desert. It is well watered, and in parts is liable to be flooded by some large canals from the Euphrates, and probably most of it is below high flood level.

From about 5 miles above Kūfeh to a point about 10 miles below that town the right bank of the Kūfeh Channel is bordered by a long wedge of desert plateau, on which Nejef stands. On the farther side of this promontory of desert is the depression known as the Bahr-i-Nejef. Below the southern end of the promontory the right bank of the Kūfeh Channel sinks again, and water in flood-time passes from it into the Bahr-i-Nejef to NW.

About 18 miles south of Kūfeh lies the northern end of the Bahr-i-Shināfiyeh. On the western side of the *bahr*, near the oases of Rahbeh, 'Ain Biyār, and 'Ain Ederi, the ground seems to be fairly low, but it is not known how far a high flood might reach. SW. of the *bahr* the adjoining ground seems to be higher.

Below the Bahr-i-Shināfiyeh the desert plateau is not far from the old main arm of the Hindiyeh, which, as explained above, lies south of the present navigation channel, divided from it by marshes.

The Country between the Branches.—This country is a plain which is apparently commanded almost everywhere by the flood levels of the Hilla and the Hindiyeh. As far down as Shāmiyeh and Diwāniyeh, the two branches are on about the same levels (both dropping from 31–32 metres to 18–19 metres): and the intervening

country forms a slight depression between them. No levels have been surveyed below Shāmiyeh and Diwāniyeh.

By far the greater part of the flood-area in this region is to be found along the Hindiyeh, the banks of whose channels (e. g. the Shāmiyeh and Khansār) are generally low and marshy, and where not cultivated are often much overgrown with reeds. The succession of swamps along the Hindiyeh, beginning with the Khōr Baniyeh between Tawarīj and Kifl, and ending with the Khōrs 'Uwaineh and Allah near Samāweh, would seem to present such serious obstacles that any movement by land between, or immediately W. of, the channels through which this branch flows, would be in some parts and seasons quite impossible, in others very difficult: but the whole of this country is very imperfectly known.

The banks of the Hilla are generally fairly high. The supply in this branch is comparatively small, and much of it normally passes down large canals from the left bank. It is probable that the country alongside the right bank of the Hilla could not be flooded, except in quite small areas, unless both the stream itself and some of the large canals on the left bank had first been dammed. It has been explained above that it would be easy to dam the Hilla at any season.

The Country E. of the Hilla Branch.—In normal years water finds its way through a number of large canals from the right bank of the Hilla (e. g. the Dighāreh and the Yūsufiyeh or Shatt el-Khār) and forms large marshes in the interior of the plain (e. g. the Khōr Afej fed by the Dighāreh, and the Khōr Huseiniyeh or Butnijeh, N. of Nāsirīyeh, fed by the Khār). By damming the Hilla and turning its supply down any of its canals, floods might be caused in the plain as far as the Tigris and the Shatt el-Hai. See further pp. 451–452.

Samāweh—Nāsirīyeh

The Euphrates here flows in one stream. Its width between Samāweh and Durāji is said to vary from 50 to 120 yds.: below Durāji it is said to widen out to 300 yds. at Nāsirīyeh. (So Lorimer, 1908: a Report of 1912–13 gives the width between Nāsirīyeh and Samāweh as 150–200 yds.) Navigation is easy. (After the capture of Nāsirīyeh, in the late summer of 1915, a British gunboat went up to Samāweh: no details of the journey were available for this Report.)

The banks from Samāweh to Durāji are said to be about 7–14 ft above low-water level: down-stream of Durāji they are apparently lower.

On the right bank there is a narrow strip of land which is irrigated from the river, but the higher ground of the desert is nowhere more than a few miles away. The low ground is apparently in general liable to flood. (The country between the river and Tel Mughaiyir (Ur) S. of Nāsirīyeh is certainly liable to inundation: no definite information is available for other parts.)

On the left bank down to Durāji the neighbouring country could probably be inundated from the river or the Hilla Branch, but no levels have been surveyed. Below Durāji the country N. of the river appears to be normally more marshy. The neighbourhood of Nāsirīyeh is flooded in high water partly from the adjoining reaches of the Euphrates, but also from the Hilla Branch (the water of which flows into the Khōr Huseiniyeh), and from the Tigris. Tigris water comes down to the neighbourhood of Nāsirīyeh not only from Kut (see following section) but also from the marshes in the Amara district. The breaching of the right bank of the Tigris above Kut would probably in the flood season send a certain amount of water into the Euphrates above Nāsirīyeh, through the Huseiniyeh (Butnijeh): but see below, p. 469. Sir W. Willcocks recommends that to meet this every trace of a bank S. of the Euphrates should be removed, channels should be opened, and as much water as possible allowed to escape in flood. He considers that Nāsirīyeh could not be drowned out by sending water in excess down the Hai, as the latter is a poor carrying channel and very high-lying. The excess water would probably flow out of the Hai. 'Reasonable protective banks' at Nāsirīyeh could settle every difficulty.

NĀSIRĪYEH—KURNA

On the complicated and variable conditions on this part of the Euphrates, satisfactory information cannot at present be given.

(*a*) *Nāsirīyeh—Neighbourhood of Sūq esh-Shuyūkh.*—On this stretch the river is 150–200 yds. wide. The current is $2\frac{3}{4}$–$3\frac{1}{2}$ m. p. h. Depths are ample at all seasons.

On the right bank there are extensive marshes, and in flood-time the water may find its way far into the desert between Nāsirīyeh and Khamīsīyeh. Across the area which is liable to flood the railway from Basra runs on an embankment.

On the left bank, behind a fringe of *sudd*-protected date groves are marshes into which water passes by irrigation creeks from the Euphrates, by various small channels in which the Shatt el-Hai loses itself, and from the Tigris marshes to NE. The annual floods here could probably be artificially increased not only from the

Euphrates, but also from the Tigris above Kut (see pp. 452, 468). A breach in the Tigris bank above Kut would probably send water in the flood season W. of the Shatt el-Hai to the neighbourhood of Shatret el-Muntefiq, below which the greater part of it would probably follow the direction of the water from the Shatt el-Hai, i. e. SE. and SSE. towards the Euphrates below Nāsirīyeh.

(*b*) *Neighbourhood of Sūq esh-Shuyūkh—Hammār Lake.*—In the neighbourhood of Sūq esh-Shuyūkh the river-water is dispersed in a maze of channels. The ground along and near their banks is often comparatively high and capable of cultivation, while in the middle of an area between channels there is generally a swampy reed-grown depression. Where the channel-banks are not cultivated they are generally fringed with reed-beds. The flood water of the river forms large *khōrs* in the country to N. (where, as explained above, it is joined by water from the Shatt el-Hai and the Amara marshes), while to S. the floods spread out into the country N. and E. of Khamīsīyeh.

The distribution of the water between Sūq esh-Shuyūkh and the Hammār has been continually changing as the result of floods, Arab irrigation, and silting.

The best navigation channel to the Hammār was until recently the Gurmat Safheh (the 'Haqiqeh' Channel, now closed), the head of which is about 2 miles up-stream of Suq esh-Shuyukh. Of the other principal channels, the Mā Shā'īreh (or Mujaihishīyeh) and Rufādīyeh, to N. of the Gurmat es-Safha, are apparently fit only for motor-boats or light *bellams* even in high water. The Mezlaq leading from Sūq esh-Shuyūkh was only fit for *maheilehs* (or large *bellams*) in high water. There was a very bad bar at its mouth (E. end). The work of opening it for navigation was undertaken towards the end of 1916, and it was intended to be ready for traffic in January 1917.

The Haqiqeh Dam was situated on the Haqiqeh Channel about 5 miles above the entrance to the Hammār Lake. The dam was destroyed by the British in 1915 in order to open a waterway to Nāsirīyeh. A navigation-channel 75 ft. wide was thus formed at the site of the dam. In high water the current flowed through this opening with great force, and upgoing steamers and boats had to be hauled up with ropes. The sharp turns at this point increased the difficulty of navigation.

The Haqiqeh Dam held up sufficient water for the irrigation of the neighbouring country (where rice is the principal crop), and its destruction has resulted in a restriction of the area capable of cultivation on both sides of the channel. To remedy this damage these proposals have been made:

(i) To construct a canal parallel with the Haqiqeh Channel, which would feed the distributaries which the Haqiqeh now cannot adequately supply. This would affect the land on one bank only of the Haqiqeh, for a length, it is believed, of not more than 4 miles. On the other hand, the cost would be considerable, as the new canal would cross five large distributary cuts, at each of which masonry regulators would be needed. This scheme has therefore been dropped.

(ii) To reconstruct the Haqiqeh Dam and open out the Mezlaq Channel for navigation. This plan seems to have been adopted, as the Haqiqeh Channel is reported closed (Jan. 1917).

(iii) To reconstruct the Haqiqeh Dam and build a navigation lock in it. This was thought to be of doubtful expediency, as it would certainly impede navigation, and the channel would tend to silt up above the dam. It is not included in a list of river-works begun, or about to be begun, in October 1916.

It may be observed with regard to irrigation that in a country which, like Mesopotamia, is to depend on a *general* irrigation scheme, it is unwise to begin with a purely *local* operation, based on the survey of a particular district. Such an operation may adversely affect conditions elsewhere, and may interfere with, or be rendered useless by, the general scheme subsequently adopted.

(*c*) *The Hammār Lake.*—Some 10 miles (in a direct line) ENE. of Sūq esh-Shuyūkh is the Hammār Lake, extending about 12 miles from W. to E., and about 4–5 miles between the rows of island-villages in date groves on its N. and S. sides. Beyond these island-villages is marsh-land (open water and reed beds) to N., and the great *khōr* of the 'New Channel' of the Euphrates to S. The depths of the Hammār Lake have been affected by the building of the New Hindiyeh Barrage. At present its depths vary from about 7 ft. in high water to 1 ft. 6 in. at lowest water (see Table below, p. 472). It is proposed to dredge the lake (see below, under *e*).

The Hammār Lake is fed partly by the Euphrates water, which enters it by various channels on the W., partly from the Shatt el-Hai, by the Nahr Beidhā and Nahr Hamzeh, on the NW., and partly from the Tigris to NE. So much water enters it on its N. side that the general direction of its current is from N. to S.

(*d*) *From the Hammār Lake to Kurna and Gurmat 'Ali.*—The Hammār discharges its water partly eastwards, but mainly south-eastwards and southwards. While some of the water follows the 'Old Channel' past Chubeish and Medineh to Kurna, by far the greater part flows through channels between the islands on the S. side of the lake into the great open *khōr* of the 'New Channel' that

extends S. to the edge of the high ground of the desert, and south-eastwards to Gurmat 'Ali.

The Old Channel is fed not only from the Hammār, but also to some extent from the Tigris marshes to N. It is practicable for steamers of 5 ft. draught. At Chubeish is a bar on which depths in August 1916 sank to 2 ft., and in October, with a *Shamal*, to as low as 1 ft. 3 in. In November 1916 the depth on this bar was brought up to 7 ft. by dredging. There is cultivation along a great part of both banks, but behind a narrow cultivated fringe are great stretches of reedy marsh land.

The Khōr of the New Channel.—This is a great sheet of open water fed principally from the Hammār Lake, but partly also, it would seem, from the marshes to W. of it that lie N. of Khamīsiyeh, and partly by cuts from the Old Channel. In the flood season steamers can cross this *khōr* from its mouth at Gurmat 'Ali to the Hammār Lake. *Maheilehs* and *bellams* can reach to Mezlaq Channel from it by the Umm Naklah cut. The *khōr* is practicable for small craft (e.g. *bellams* and motor-boats) throughout the year. On its southern side towards the desert its edges are, on the whole, shallow and often reed-grown, but there are places where in flood-time boats can come close inshore.

The main outlet of the *khōr* is at Gurmat 'Ali, where its water passes into the Shatt el-'Arab, but in past flood-seasons it has spilt much water into the depression between Basra and Zobeir. This spill is now held up by the new Sha'aibeh *bund*. (The floods W. of Basra were also fed by water coming from the Shatt el-'Arab below Basra: the Zobeir *bund*, when completed, will act as a barrier against this inundation.)

(*e*) As regards improvements on the river between Nāsirīyeh and Kurna, little seems possible beyond dredging, the marking of channels, and ordinary conservancy regulations against unauthorized canal-cutting and damming by the Arabs. Dredging here can be fairly effective, as, though of course silting goes on, the amount deposited is much less than higher up the river, a great quantity of sediment having been taken off higher up (e.g. in the Bahr-i-Shināfiyeh). It appears that the most difficult reaches on this stretch are being, or are about to be, thoroughly surveyed.

WATER-LEVELS, AUG.–DEC. 1916.

	Aug. 21	Sept. 1	Sept. 8	Oct. 6	Oct. 13	Oct. 19	Oct. 27	Nov. 11	Nov. 19	Nov. 27	Dec. 4	Dec. 11
	ft.in.	ft.in.	ft.in.	ft.in.	ft.in.	ft. in.	ft.in.	ft. in.	ft.in.	ft.in.	ft.in.	ft.in.
Haqiqeh Bar	1 0	1 3	2 0 (a)	2 0	1 3 (b)	2 0	2 0	2 0	2 6	2 6	2 4	2 6
General Level		1 9	1 9		1 6	1 10	1 8	1 10	2 1	2 3	2 0	2 2	2 1
Of lake		2 0	2 0			(c)				2 9	(e)		
Chubeish Bar	2 0				1 3	2 0	2 0	2 0	7 0 (d)	7 0	7 0	7 0	7 0

(a) Channel cut through Bar.
(b) Strong *Shamal.* This wind helps to decrease the depth of water in the river and adjoining marshes: a south wind has the opposite effect.
(c) Rise in Euphrates.
(d) Dredged.
(e) Corresponding fall in Euphrates between Nov. 16 and 20.

NOTE.—On Nov. 7 the minimum depth on the lake was 2 ft., and *bellams* could load to 2 ft. 1 in. The rise on that date was said to be curious, as there was no corresponding rise in the gauge readings at Nāsirīyeh, though between Oct. 27 and Nov. 4 there had been a rise of 2½ in. at Nāsirīyeh. (The rise in the Hammār on Nov. 7 may have been due to Tigris water.) After Nov. 20 the Euphrates had begun to rise slowly.

SIR WILLIAM WILLCOCKS' SCHEME FOR THE CONTROL OF THE EUPHRATES WATER

The full control of the Euphrates, both for prevention of excessive floods and for irrigation, must depend on a system of barrage and escape near the head of its delta.

Provision has further to be made for the water diverted by the escape. The storage of flood-water is necessary for the development of Irak, as water is needed for the crops in the summer months of low supply, when the amount actually in the rivers is not nearly enough for the thorough irrigation of the country. The heavy irrigation of Upper Mesopotamia would increase the need of Irak for great quantities of stored water. If another Power held and irrigated Upper Mesopotamia an agreement would be necessary as to the division of the low supply: for the whole of the low supply of the Euphrates, and much of that of the Tigris, could be cut off from Irak by irrigation works farther N.

In 1911 Sir William Willcocks mentioned a point below Fellūjeh, near the head of the Abu Ghoreib Canal, as a suitable site for a

barrage. But in 1916 he expressed a preference for a point near the Saqlāwiyeh dam, up-stream of Fellūjeh: there is here an outcrop of limestone in the stream-bed, which gives a solid foundation. The Habbāniyeh Escape would take off water above the barrage into the Habbāniyeh depression. (For the Euphrates water alone the Habbāniyeh Reservoir might be sufficient. On the possibility of using both it and the Abu Dibs depression for the storage of the combined excess water of the Euphrates and the Tigris, see p. 456.)

The other works which Sir W. Willcocks proposed for the Euphrates in 1911 might, he now considers, 'be carried out as designed, remembering that everything was designed for a really poor country'. But it appears that the storage of Tigris water either in the Tartar depression or in reservoirs at Habbāniyeh and Abu Dibs may make it necessary to remodel the scheme for Euphrates irrigation.

The works which he suggested may be summarized as follows:—

(i) The Saqlāwiyeh Canal to be restored and to be used as a feeder for a canal-system along the r. bank of the Tigris down to Kut.

(ii) A canal along the l. bank of the Euphrates from above the new barrage to the head of the Iskanderiyeh, feeding canals (Abu Ghoreib, Ridhwānīyeh, Upper Melcha, Latīfiyeh) running westwards to the depression between the Tigris and the Euphrates, which would serve as a drain.

(iii) The Kutha Canal taking off SSE. from the Latīfiyeh, to water the interior of the country between the upper part of the Hilla Branch and the Tigris, towards the Shatt en-Nīl. From the Kutha, a western branch (the Babylon Canal) leading towards Hilla.

(iv) Canals along the r. and l. banks of the upper part of the Hindiyeh Branch, for the irrigation of the Tawarīj district.

(v) The use of the present *khōr* above Gurmat 'Ali for the irrigation of the Basra district. For this purpose the water in the *khōr* must be held up in low supply by a barrage at Gurmat 'Ali. In order to prevent the increased amount of water behind the barrage from spreading over so wide an area that its evaporation would nullify the effect of the barrage, the Euphrates water, according to this scheme, would be shut off from the Hammār Lake and the Old Channel by a dam at Sūq esh-Shuyūkh, and its water would all pass down to Gurmat 'Ali, being confined on the N. by a bank from Suq esh-Shuyūkh to Kurna. This bank would run to the Hammār Lake, along the S. side of the lake (presumably along the present line of islands), and thence along the S. bank of the Old Channel. Thus the Hammār Lake and the Old Channel would be fed with Tigris water only, while the Euphrates water would be concentrated in the

area to the S., in the present *khōr* of the New Channel, and when held up by the Gurmat 'Ali barrage would not be able to spread northwards into the Tigris marshes.

General Conclusions Summarized

(i) For the thorough control of the lower Euphrates, both in order to prevent excessive floods and to use its water for extensive irrigation, it is necessary to hold it up to the head of its delta at Hīt.

(ii) Local irrigation schemes, planned without reference to a general scheme for the country and based on partial surveys, are inadvisable.

(iii) Nearly all the country between the Tigris and the Euphrates from Baghdad to the Shatt el-Hai can be inundated in the flood season from the Euphrates above Diwāniyeh.

The Hindiyeh Barrage could be used in the low-water season as a dam in order to flood the country through a breach up-stream of it.

The Hilla Branch could be easily dammed at any season.

(iv) The Euphrates and its neighbourhood from above Nāsirīyeh to Kurna is liable to be flooded from the Tigris. Water from the Tigris above Kut can be sent down to the neighbourhood of Nāsirīyeh.

(v) The lower Euphrates is on the whole ill-suited to navigation, chiefly owing to the great dispersion of its waters, and consequent shallowness in parts, so that steamers and fully laden native craft of the larger kinds cannot ascend to the Hindiyeh Barrage in low water. Further, the Old Hindiyeh Barrage blocks navigation, while the New Barrage and the Hilla Regulator are impassable for the larger class of river steamers. Thirdly, the New Barrage and Regulator can so be used, without flooding the country up-stream of them, as to make either the Hindiyeh Branch or the Hilla Branch quite unnavigable in the low season, and the Hilla Branch unnavigable in the flood season. The Hindiyeh Branch could be made unnavigable in the flood season only at the cost of a most disastrous inundation.

(vi) The river between Nāsirīyeh and Kurna, parts of which have been found to be very shallow in the low-water season, can be improved for navigation by dredging.

Note on Native Craft on Euphrates

The following information is from a Report of 1916.

Maheilehs. None used on Euphrates. (If this is true, the craft called *maheilehs* in other reports on the lower Euphrates are probably large *bellams.*)

Large *bellams,* 9–18 tons, 270.

Large *bellams,* 18–60 tons, 230.

Danaks (large bitumen-covered canoes, 9–11 tons), 5,000.

Shakhtūrs. Large numbers can be built at Jerablūs (or Birijik).

Down-stream of Museyib nearly all the native craft are in Arab hands. The 5,000 *danaks* are fully worked, and it would be difficult for an enemy to get hold of any considerable number of these shallow-draught craft, which could and would be got away by the Arabs into inaccessible marshes. Moreover, they are very slow and unsuitable for supply work.

The wood for building a further supply of large *bellams* is not locally available, but the existing tonnage of this class is fairly considerable, amounting to about 12,500 tons. However, the Turks do not appear to have collected these *bellams,* and collection on a large scale would probably lead to a good deal of fighting with the inhabitants.

Maheilehs and large *bellams* are built at Basra and Mohammareh. Only *danaks* are built at Sūq esh-Shuyūkh, Samāweh, Shināfiyeh, Umm el-Ba'rur, and Hindiyeh.

APPENDIX D

THE OIL-FIELDS OF MESOPOTAMIA AND THE PERSIAN FRONTIER

Position and Prospects of Petroliferous Areas

(1) From the Persian Gulf to Kirkuk there extends, among the hills of the Turco-Persian borderlands, a belt of country which is in some parts certainly, in others probably, petroliferous. At present oil is worked on this belt, (*a*) in the Shushtar district, where the Maidān-i-Naftūn wells of the Anglo-Persian Oil Company produce on a considerable scale, and (*b*) comparatively slightly in the Kirkuk—Qasr-i-Shīrīn—Mandali area.

Much of Luristan, lying between these two worked areas, is probably petroliferous, and oil is actually found on the surface in a few places.

It is to be noticed that at its southern end the belt is continued by the oil-bearing region which lies N. of the Persian Gulf.

(2) The Tigris valley between the Hamrīn Hills and Mosul is petroliferous. The deposits in this area may be connected (along the Hamrīn Hills?) with the Kirkuk—Qasr-i-Shīrīn oil-district.

(3) The Euphrates valley from Hīt up to the neighbourhood of Deir-ez-Zor is petroliferous. Oil also occurs in the desert S. of Nāsirīyeh (Tel Mughaiyir), and may be present elsewhere in the country E. and S. of the Lower Euphrates. Lastly, it is to be noticed that the Arabian side of the Persian Gulf is in parts petroliferous (e.g. at Koweit and at Bahrein).

(4) Redwood in his work on Petroleum (3rd edition, 1913) describes the oil-bearing belt of Mesopotamia as running from Hīt to Deir, from Deir NE. to Harbol N. of Zakho, 'and eastward (?) from this line to beyond the Persian frontier'. (The last phrase seems to be an inaccurate reference to the Kirkuk—Qasr-i-Shīrīn—Mandali area.) The opinion that the oil-bearing country reaches from the Euphrates to the Tigris across the Jezīreh (in the neighbourhood, it would seem, of the Sinjar hills) appears to rest on the fact that the geological conditions make the presence of oil not improbable, and that the usual concomitants of oil, salt and sulphurous waters, are

found in this part of the Jezīreh. On the other hand, no record has been found of an actual appearance of oil or bitumen, and at any rate it would seem that such appearances are slight, as most authorities do not notice them. Professor J. W. Gregory in a Report on the Geology of Mesopotamia does not describe the oil-bearing country as stretching from Euphrates to Tigris: indeed Redwood's own map of the oil-fields of the world does not mark petroliferous deposits across the Jezīreh (it is true that it also omits the Tigris area).

(5) Oil is an uncertain quantity. Geological examination of the ground can indeed tell whether the conditions are favourable to its presence, but even when such conditions exist, if oil has not appeared on the surface or been struck by testing, it cannot be told how large the supply may be. Again, where crude oil is known to exist the economic value of its quality cannot be told without expert inspection and analysis. And lastly, when a well, or group of wells, is actually working and producing abundant oil, it is impossible to say how long the supply will last.

In Mesopotamia and the adjoining Persian borderland there are very large areas where the presence of oil is known or suspected. But the examination of it is very incomplete. Thorough examination and testing is being carried out in the Shushtar district, and the country round Qasr-i-Shīrīn seems to have been fairly carefully inspected. So far as such examination goes, the prospects here seem to be on the whole encouraging. Elsewhere, thorough examination has taken place only at a very few, scattered points: for the most part there is only a presumption from the general geological structure of the country and from indications of oil on the surface. There is indeed a good chance that, in such a large region that is certainly or probably petroliferous, more or less valuable oil-fields will be discovered at one point or another: but where they will appear, it seems impossible to say.

The Shushtar Area

General

The oil-producing area round Shushtar is of course only a small section of the great belt of more or less petroliferous country which extends from S. of Mosul to the Persian Gulf. It is, however, the only part of this belt in which successful exploitation by modern European methods has as yet taken place on a considerable scale.

The Anglo-Persian Oil Company's producing field is at Maidān-i-Naftūn, a plain among low gypsum hills, some 26–30 miles SSE. of

Shushtar. The oil-wells here are connected by a pipe-line, 150 miles long, running down the left side of the Kārūn past Wais and Ahwāz, with the refinery at 'Abbādān, situated on 'Abbādān Island, upon the left bank of the Shatt el-'Arab, some 35 miles above its mouth.

The Company has also sunk wells at Ahwāz and Neft-i-Safid ('White Oil Springs', some 36–40 miles SSE. of Shushtar). The Company's geologists are examining other fields, and the reports are said to be promising.

It is not known where these experiments have been conducted, but it seems very probable that there is much oil throughout the gypsum and sandstone country, the ranges of which run NW.–SE. between the plains of Arabistan and the high Bakhtiyāri mountains.

Oil and bitumen are collected by the natives at various springs: e. g. at Mesjid-i-Suleimān, 4 miles NE. of Maidān-i-Naftūn, and at Shardin, 8 miles E. of Ramuz (Ram Hormuz).

Commercial Exploitation

The Anglo-Persian Oil Company holds a concession giving it the exclusive right to bore for oil in Persia, except in the northern provinces of Azarbaijan, Gilan, Mazandaran, Astarābād, and Khorasan.

In view of the importance of establishing a Government-controlled oil-field for supplying the needs of the Royal Navy, &c., the British Government has invested heavily in the Company, and in consideration of this financial support conditions have been made in order to give the Government a voice in the direction of the Company's general policy, and in the supervision of the further development of the concession.

Apart from small operations in the Qasr-i-Shīrīn district intended merely to supply the local market (see p. 482, below), the Company's production has been limited entirely or almost entirely to the Maidān-i-Naftūn field. Borings have taken place elsewhere, e.g. at Ahwāz and at Neft-i-Safid, but it appears that production for export has not yet been attempted at these places.

At Maidān-i-Naftūn an area of about 6½ square miles has been 'proved', and it is hoped that eventually 350–400 wells may be drilled there. The difficulty so far has been that the few wells already tapped have yielded much more oil than could be carried by the pipe-line or stored at the refinery: so that great quantities of oil had to be burnt. In 1914 two wells alone, though shut down

as far as possible, produced almost all the oil exported. Drilling operations during the last few years have therefore been restricted. This drawback will be lessened by the increase in the size of the pipe-line, and by the extension at the 'Abbādān refinery, and at the end of 1916 it was reported that active drilling for reserve production had been resumed. The directors then stated that the wells from which supplies are being drawn continue to give most satisfactory yields, and are more than maintaining their former production.

There is a pumping-station on the Tembih river some 2½ miles SW. of the wells.

The pipe-line in 1914 was 6 in. in diameter as far as Wais, and 8 in. thence onwards, and had an estimated capacity of 1,000 tons daily. (One well alone was then producing more than that on an average.) A 10-in. line was completed in August 1916 as far as Wais, and is to be continued to 'Abbādān. Delay in the construction of the line was due to the damage done by Persian tribesmen in 1915 (which led to the closing of the line refinery for 4½ months), and to the scarcity of labour and transport. However, at the end of December 1916 it was expected that the whole length of the 10-in. line down to the refinery would be working 'within a few weeks'. The old pipe-line had gate-valves 10 miles apart, and stations at intervals of 20 miles for keeping an hourly record of pressure, in order to detect leakage. It is not known what arrangements of this kind are to be found on the new line.

The refinery at 'Abbādān has storage capable of holding at least 60,000 tons of crude oil and 50,000 tons of refined oil. Probably the storage capacity is considerably greater, as extensions have recently been completed, and further extensions were in progress at the end of last year (1916). 'Abbādān has a wireless station, and is connected by telephone with Maidān-i-Naftūn.

The oil and bitumen springs exploited by natives are worked (if they are still worked at all) by primitive methods, and the amount and the quality of their production are insignificant. Thus in 1913 it was reported that at the three principal springs of Mesjid-i-Suleimān, near Maidān-i-Naftūn, not more than 30 gallons daily of a dark green oil were collected by the Seyyids of Shushtar, and the oil was used mainly for anointing camels against the mange. The crude material was said to contain 27 per cent. of illuminating oil and 45 per cent. lubricating oil. At Shardin, near Ramuz, are ten springs of dark oil, the three principal springs yielding 25 gallons daily.

Communications

The Maidān-i-Naftūn oil-wells, and the surrounding petroliferous area, are surrounded by alluvial desert and marsh (on the S. and W.) and by mountains (on the N. and E.).

The alluvial desert on the S. is traversed by the Kārūn and the Shatt el-'Arab, and by far the easiest approach is from the Persian Gulf by these waterways. The Shatt el-'Arab is navigable for ocean-going steamers, and can be further opened up (see *Route* I A in this volume), and the Kārūn is navigable for river steamers up to and above the Ahwāz rapids (*Route* II A).

The land routes across the plains are all more or less difficult or impassable after rain or in the flood season. Away from the rivers water is very scarce in summer and autumn. Supplies are almost unobtainable except along the Shatt el-'Arab in the Fellāhīyeh and Hindīyan districts, round Ram Hormuz and Behbehān, and in the plain of Shushtar and Dizfūl. For land routes along the lines of the Shatt el-'Arab, Kārūn, and Kārūn tributaries, see *Routes* 1, 3, 6 a–d in this volume. For routes in the plain E. of the Kārūn see *Routes in Persia*, vol. iii, 53, 57, 61 (stages 1–3), 62, 65, 66; *Corrections to Routes in Persia, vol. iii*, 72.

To N. and NW. the hills of Luristan and the Pusht-i-Kūh rise in successive ranges running NW.–SE. to the high Persian plateau (the Khurramābād plain is about 3,500–4,000 ft. above Dizfūl). The lower ranges on the S. side of this mountain belt are chiefly sandstone and gypsum: the high ranges are separated by broad valleys or depressions filled with low sandstone and gypsum hills. The lower hills north of Shushtar and Dizfūl are petroliferous, and indications of oil are found here and there in the lower valleys of the Pusht-i-Kūh and in the gypsum and sandstone country between the higher ranges towards Khurramābād. The country is on the whole well watered, though in parts the supply may be poor in quality and scanty in summer. Grazing is generally good: fuel is scarce in the southern hills. Practically no supplies are obtainable. The inhabitants migrate regularly between summer and winter pastures. Luristan has long been in a condition of complete anarchy. The easiest routes between Dizfūl and Khurramābād make a détour to W. None is at present suitable for wheels. See *Routes* 11 a, b, c in this volume. Before the war a railway from Mohammareh to Khurramābād had been projected. It is not known whether a line across the hills had been chosen for it. A route which gives fairly easy going, and might apparently be made passable for wheels with-

out difficulty, runs from Dizfūl to Deh Lūrān and Bedrah along the foot-hills of the Pusht-i-Kūh. See *Routes* 10 a and b.

To NE. is the very difficult Bakhtiyāri country, in which military movement on any considerable scale seems to be impossible. The main lines to Isfahan are (i) the Lynch Road (*Routes in Persia*, vol. iii, 69, and *Corrections to Routes in Persia*, vol. iii (1914), 69 a): (ii) the line Shushtar—Qal'ah Bazuft—Ardal—Isfahan, shorter and possibly easier than the Lynch Road (*Routes in Persia*, vol. iii, 84, 82, 69: *Corrections*, 69 a): (iii) the line Ahwāz—Ramuz—Dishmuk—Bard-i-Kirm—Lūrdagan—Isfahan, through the northern part of the Kuhgalu country, believed to be easier than the Lynch Road (*Corrections to Gazetteer of Persia*, vol. iii (1913), pp. 51–52).

To E. the little-known Kuhgalu country separates the Kārūn plain from Shiraz (see *Routes in Persia*, vol. iii, 61, and *Corrections to Gazetteer*, vol. iii (1913), p. 51): only mule-tracks exist here. The Bushire coast-road is very hot in summer, and liable to be flooded in winter (see *Routes in Persia*, vol. iii, 54, 57).

The gypsum country in the immediate neighbourhood of Maidān-i-Naftūn is rough, and becomes slippery after rain. Good water is scarce. See *Routes in Persia*, vol. iii, 74, and *Corrections* (1914), 71, 72.

The naturally fertile plain of Dizfūl and Shushtar, with improved irrigation and efficient government, might become a good centre for the collection of supplies. The same seems to be true of the Ram Hormuz district. The Kārūn country between Band-i-Qir and Mohammereh could also be restored by means of irrigation works. On mules obtainable at Dizfūl, Shushtar, and Ahwāz, see Appendix E.

Kirkuk—Qasr-i-Shīrīn—Mandali

General

This section of the oil-belt may prove very important, but it has hardly been examined as yet except in the neighbourhood of Qasr-i-Shīrīn, and it is impossible to define the limits within which production on a large scale may take place. It can only be said (i) that oil is known to exist on the Turkish side of the frontier in or close to the hills near Kirkuk, Tūz Khurmatli, Kufri (Salāhiyeh), and N. of Mandali: (ii) that oil is known to exist on the Persian side of the frontier in the area between the Turkish frontier on the W., the Māhīdesht neighbourhood on the E., the Upper Sirvan (Diyāleh) on the N., and the border of Luristan on the S. In the Persian area

crude oil and bitumen are found in numerous places among the lower hill ranges. Up to the outbreak of the war testing operations by Europeans had taken place in the Bajlan country (N. of Qasr-i-Shīrīn) and near Qasr-i-Shīrīn itself. Oil-springs are apparently worked by natives in the Sharafbaiani country (N. of Bajlan), in Bajlan and round Qasr-i-Shīrīn, S. of Qasr-i-Shīrīn in the ranges E. of Khanikin, and elsewhere.

Commercial Exploitation

(*a*) At least up to the outbreak of war, the oil-wells on the Turkish side had not been exploited by modern methods. The springs are owned, it seems, for the most part by the Turkish Government (Sultan's Civil List) and leased to contractors. The Kirkuk oil-wells were said in 1910 to be the property of Salih Pasha, of Constantinople. The oil is collected from pits in skins and carried by donkey to the refineries. There are stills at Kirkuk, Tūz Khurmatli and Mandali, possibly at Kufri and Khanikin. The yield obtained in this way has been very small: thus the Kirkuk wells in 1910 were producing only about 130 gallons a day, and the principal group of springs near Tūz Khurmatli (Abu Sarkhal in the Neft Dāgh) were producing only about 150 gallons a day. The refined oil seems to have been used according to its quality for illumination, lubrication, or for anointing camels against mange. In September 1916 it was reported that three stills were working at Mandali, producing a dark oil of poor quality.

(*b*) On the Persian side, the Anglo-Persian Oil Company had wells at Chīāh Surkh (about 14 m. NE. of Qasr-i-Shīrīn), but owing to the difficulties of transport, operations on a large scale were not attempted, and production was limited to the needs of the local market. The reason for keeping up this limited production was that much was hoped of the country as a future oil-field, and it was expected that the building of the Baghdad railway and of the branch line to Khanikin would, in not very many years, allow the field to be more adequately exploited: and it was judged expedient to maintain a footing here.

Other springs are worked in a primitive manner by the Kurds in Sharafbaiani (e. g. Hurin), in Bajlan (at points near the Quretu), round Qasr-i-Shīrīn, in the hills E. of Khanikin, and at Gahwarreh and Shian.

(*c*) It may be noticed that though the economic future of this oil-area is uncertain, some experts are inclined to think that it may in the end prove more productive than the Shushtar area.

Communications

It will be observed that this oil-area stretches right across the easiest line of approach from the Persian plateau to Mesopotamia. In the neighbourhood of Qasr-i-Shīrīn and Zohāb there is a depression in the mountain system which separates Mesopotamia from Persia. The mountains here sink to low hill-ranges and rolling plains.

Through this depression runs the Baghdad—Kirmanshah road, which is already passable for wheels (see vol. iii of this Handbook, *Route* 28 a: for Baghdad—Mandali, see *Route* 28 b). The northern end of the oil-area (Kirkuk—Kufri) lies along a road from Mosul, which runs under the foot of the hills, and would be fairly easy if the Great Zāb were bridged, and a new bridge constructed on the Lesser Zāb at Altun Köprü: besides these bridges, only small improvements would be needed for wheels. (See vol. iii of this Handbook, *Route* 25 a.) Except from Baghdad on the SW. and from Mosul on the NW., the approaches to the oil-area from the Mesopotamian side are difficult owing to lack of water and supplies.

The important approaches from Persia all converge on the plain of Kirmanshah. Routes to Kirmanshah lead from Khurramābād and Burujird (*Routes* 11 e and g in this volume): from Teheran and Hamadan (*Routes in Persia*, vol. ii, 53, 71): from Bijar (*Routes in Persia*, vol. ii, 81): from Senna (*Routes in Persia*, vol. ii, 78). The country traversed by these routes is crossed from NW. to SE. by mountain ranges, between which are fertile, well-watered plains. From all the above-mentioned places roads can be found to Kirmanshah which either are already passable for wheels or could be made so without difficulty. Snow may lie on the passes in winter. Only a difficult track runs from Senna to Zohāb by Juanrūd, avoiding Kirmanshah. To the S. of the country between Qasr-i-Shīrīn and Kirmanshah lies the difficult Pusht-i-Kūh country (see this volume, *Route* 9). On the N. tracks lead to Suleimāniyeh from Qasr-i-Shīrīn (see vol. iii of this Handbook, Appendix), from Kufri (ibid., *Routes* 34 a, b), and from Kirkuk (ibid., *Route* 37): the last-mentioned route, is just passable for wheels.

The oil-bearing country itself is well-watered, has good grazing and in parts is fertile and fairly well-cultivated. The tribes of the Kirmanshah province breed mules and horses, but there seems to be no important local market. The country is fairly easy, or could be made easy, for movement. The chief obstacles are the larger streams (Diyāleh, Ālvand, Quretu), some stony passes through the hills, and ravines in the plains. The soil of the plains becomes very sticky after rain. The main routes running through the area are the

Baghdad—Kirmanshah and Baghdad—Mosul roads mentioned above. For connexions between Mandali and Khanikin, Khanikin and Kufri, Qasr-i-Shīrīn and Chīāh Surkh, and Qasr-i-Shīrīn and Kufri, see vol. iii of this Handbook, *Routes* 29, 32 a–b, 33, and (iii) on p. 397.

The Tigris Area

General

This area lies along the Tigris between the Fet-hah Gorge in the Hamrīn hills, on the S., and Mosul in the N., a distance of about 100 miles as the crow flies. The places where oil is at present known to occur are all on or near the Tigris, with the exception of El-Hadhr which is near the Wādi Tartar, some 30 miles away from the river, WNW. of Qal'ah Sherghat.

At present the oil in this area is worked only at Kaiyara, about 50 miles by river and 40 miles by road below Mosul. N. of Kaiyara there are oil oozings in the warm springs of Hammām 'Ali (15 miles S. of Mosul): to the SW. there is an oil-spring at El-Hadhr; and at the Fet-hah Gorge, in the rocks on the left bank of the river, there are oil oozings and bitumen. It is possible that the line of the Hamrīn hills to NW. and SE. of this gorge is also petroliferous.

Commercial Exploitation

It is obvious that the economic prospects of the Tigris oil-field are quite uncertain, but a favourable opinion has been passed by one observer (Colonel Maunsell, in 1897) on the possibilities of the Fet-hah Gorge.

At Kaiyara, in 1910, the bitumen was collected soft and removed in skins. The oil refinery had a primitive plant, yielding 40–50 tons of oil daily. From 20 tins of bitumen, 10 tins of oil in three qualities were obtained. In every 10 tins, two were of the first quality (colourless, but smelling strongly of some impurity, with an odour resembling that of benzine): two of the second quality (yellow): six of the third quality (black, needing to be distilled again before it would be of use for anything but anointing camels against the mange). The fuel used for distillation is crude bitumen. In 1910 there was found to be about 200 tons of refined oil in store, of which over half was of the first quality. A French expert was brought from Constantinople in Abdul Hamid's time, and some experiments (possibly borings) were made, but the yield of the springs was not increased. The springs are Government property, and are leased for exploita-

tion. In 1908 a European firm was among the competitors for the contract, but apparently did not obtain it. In 1910 the contractor was said to be paying an annual rent of £T500 (about £450): but it was thought unlikely that the springs were yielding enough oil to give him a margin of profit, and he may have made his profit on the sale of crude bitumen.

Communications

There are two main approaches to this area from Baghdad:

(i) By the right bank of the Tigris: the road is passable for wheels throughout, but rough in some places, and liable to be very heavy after rain: the river is best suited for *keleks* (down-stream). Native sailing craft do not navigate above Samarra, and cannot get even so far in high flood; steamers can navigate this part of the river only in high water, and would probably find difficulty above Samarra owing to rocks and rapids: railway from Baghdad to Samarra. (Vol. iii of this Handbook, *Routes* III D, III E, 25 b, Appendix, p. 395: the distance by river from Baghdad to Shereimiyeh near the Fet-hah Gorge is probably about 180 m., not 150¾ as in *Routes* III D, III E.) Practically no supplies above Samarra: good grazing in spring, fuel scarce, water from the river except on the road between Shereimiyeh and Qal'ah Sherghat.

(ii) By Kufri (Salāhīyeh), Kirkuk, and Altun Köprü. The road, though on the whole easy, would need improvement in places for wheels, the Great Zāb would need bridging, and a new bridge over the Lesser Zāb would probably have to be constructed at Altun Köprü. The route is well-watered. See vol. iii, *Route* 25 a.

The only easy approach from Persia would be by Kirmanshah, Qasr-i-Shīrīn, and Kirkuk. N. of this route there are no easy passes over the mountains. The least difficult line would perhaps be from Sūj Bulāq to Rowanduz or Raniyeh over the Garrau Shinkeh pass. (See vol. iv of this Handbook, *Route* 61 d.) For routes between Rowanduz or Raniyeh and Urmia see vol. iv, *Routes* 60 a–61 c. The route Mosul—Erbil—Altun Köprü—Raniyeh is passable for wheels, or could easily be made so, and there is said to be now a carriage road from Rowanduz to Harir near the Great Zāb (vol. iii, *Route* 40 and p. 278: but later information makes this doubtful). There is down-stream *kelek* traffic on the Lesser Zāb from Taktak.

From the N. only difficult tracks lead through the Hakkiari country to Amadiyeh or Zakho (vol. iv of this Handbook, *Routes* 62 b and following): an easier line, but one apparently not at present passable throughout for guns, is that from Bitlis to Jezīret-ibn-'Omar (vol. iv, *Route* 85).

From Diarbekr or the northern Jezīreh, Mosul is easy of access through Nisibin, near which place meet routes from Diarbekr through Mardīn, and from Ras el-'Ain on the Baghdad railway. The winter and spring route from Nisibin to Mosul leads direct across the Jezīreh: in summer and autumn, owing to lack of water, a détour has to be made by Jezīret-ibn-'Omar and the country E. of the Tigris. The first route is passable for wheels: the second, if not so already, could easily be improved. See vol. iv, *Routes* 90 a–93 b. There is down-stream *kelek* traffic on the Tigris from Diarbekr; see vol. iv, *Route* III G.

For communications with the Euphrates across the Jezīreh S. of the Sinjar see below, p. 488.

In the oil-area itself the country on both sides of the river is open and fairly easy for movement, but on the left bank are the obstacles of the Great and Lesser Zābs, which are especially serious in the spring. There is good grazing in spring. Grain might be collected from the fertile and fairly well cultivated country between Erbil and Mosul. Water is scarce in summer away from the Tigris and its larger tributaries. In spring it is apparently to be found in numerous wadis in the Jezīreh. There is water throughout the year in the Wādi Tartar, W. of Qal'ah Sherghat.

The Euphrates Area

General

This petroliferous area extends along the Euphrates from a few miles S. of Hīt to an undetermined point above Deir ez-Zor: there is an indication of oil on the right bank near Lubtar Island, 12 miles above Deir.

(There are bitumen wells at Tel Mughaiyir south of Nasiriyeh, and near Koweit: and it has therefore been suggested that there is a continuous oil-line along the right side of the lower Euphrates valley, joining the Hīt—Deir area with the petroliferous region on the Arabian coast of the Persian Gulf. This seems to be mere conjecture.)

It must be observed that the economic value of the Euphrates oil-area as a whole is quite unknown. The neighbourhood of Hīt within a radius of a few miles appears to be very rich in oil and bitumen. The indications are numerous and striking, and the bitumen springs have been worked for thousands of years. On the other hand, it does not seem to be known whether the field is likely to be particularly rich in oil suitable for fuel: and it must also be remem-

bered that the continued working of the bitumen-wells for so many centuries may have exhausted a large proportion of the supply.

Above Hīt, the indications of oil are confined to small bituminous springs here and there (e. g. near Jibbeh, near Alūs below Hadīseh, near Ānah, near Lubtar Island): and in the appearance of bituminous rocks in parts of the valley (e. g. in a stretch below Meyyādīn). It is quite uncertain what amount of oil may be thus indicated.

Commercial Exploitation

Before the war the only important exploitation of this area was to be found in the bitumen industry at Hīt. There were five bitumen springs, or groups of springs, in the neighbourhood of the town; four of these were on the right bank, and one on the left. In 1909 four of them were being worked and were said to be capable of yielding between them over 2,000 donkey-loads a day: much less was actually collected. The methods of collection and preparation were primitive. The bitumen was used for pitching boats (there is a boat-building industry at Hīt), bridges, floors, &c. Lack of transport confined the sale of bitumen to the local Mesopotamian market. The springs appear to have been the property of the Government and to have been let on lease.

It has been reported that there is now (1916) a petroleum store at Hīt. If this be true, it may indicate that an oil refinery has been established here.

Bitumen for local consumption may have been collected near Jibbeh and Ānah, but the evidence on this point is unsatisfactory. At any rate the industry elsewhere than at Hīt was quite unimportant.

Communications

The Euphrates valley obviously affords the one line of communication running through the area, and by reason of the deserts to E. and W. the main approaches to the area are limited to that valley. The area may be entered at its NW. or SE. end either by the river itself or by the Baghdad—Aleppo road along the right bank.

The Middle Euphrates, like the Middle Tigris, is a better line of communication down-stream than up-stream. Above Hīt the river can be navigated up-stream only by steamers and motor launches, and by such craft only in high water. Even then the journey would be slow and difficult in places. The Germans claim to have improved

the channel, but how far they have done so, and whether their measures are likely to benefit up-stream navigation, is not known. According to one report their improvements consist mainly in the destruction of some *naurs*.

There is *shakhtūr* traffic down-stream. Navigation by steamers down-stream would, under the conditions existing before the war, have been dangerous in mean water, and practically impossible in low water. The Germans besides improving the channel have established a river-port at Jerablūs, and have used the river in an increasing degree for stores, munitions, and in 1916 for troops (vol. iii of this Handbook, *Routes* IV E–H).

The Baghdad—Aleppo road joins the Euphrates at Fellūjeh and leaves it at Meskeneh. Before the war the road was passable for wheels throughout, though unmetalled except in the stretch near Deir, and therefore rough in parts. It may have been improved since the war. There are bridges at Fellūjeh and Deir and a railway-bridge above Meskeneh at Jerablūs (vol. iii, *Route* 46: for the left bank, see *Route* 47; for the railway-bridge, vol. iv, p. 416).

On the N., the Euphrates valley can be approached from the line of the Baghdad railway by the line of the Belikh and the Khabūr, which have water throughout the year. The ground in the neighbourhood of the streams, though marshy here and there, is generally open and easy (vol. iii, *Route* 49 c (part), and vol. iv, *Routes* 125, 132 a, b).

On the S. there is a desert route to Hīt from Kerbela by the oases of Shifātheh and Rahālīyeh (see *Route* 17 in this volume, and vol. iii, *Route* 51), and another from Baghdad to Ānah, very poorly supplied with water, but affording fairly good going: it has been traversed by a motor-car (vol. iii, *Route* 48).

N. of the line Baghdad—Fellūjeh the country between the Tigris and the Euphrates is very arid, until the neighbourhood of the Sinjar hills is approached. There are also desert routes (apparently with little or no good water) between the Tigris at Samarra and Tekrīt and the Euphrates at Hīt and Anah. Hardly anything is known of them. Farther north a number of wadis carrying water in winter and spring run down from the Sinjar into the plains. Thus the easiest line between the rivers N. of the Baghdad—Fellūjeh road is that from Deir to Mosul, passing under or not far from the Sinjar hills: but this line is probably not well enough watered to be practicable for infantry in summer, and is obstructed by the obstacle of the Khabūr. (See vol. iii, *Routes* 49 a–d, 50.)

As regards approaches from the W., the best-watered routes across the desert from Syria come in at Deir (or at Meyyādīn not far below).

An ordinary caravan route before the war was Damascus—Tadmor—Deir. (See vol. iii of this Handbook, *Route* 54.) S. of this there seem to have been no routes in ordinary use in recent years, though of course lines more or less practicable exist (e. g. Abu Kemal—Tadmor: vol. iii, *Route* 53). The old Hīt—Damascus post-route (not now in regular use) can only be traversed at speed, preferably by riding camel, owing to lack of water (vol. iii, *Route* 52).

In the petroliferous area itself there is a narrow strip of cultivation along the river-banks from Hīt to Nahiyeh above Deir: little or no grain is here produced for export. From Nahiyeh to Abu Kemal both banks are almost uninhabited, and either bare or covered with tamarisk scrub. Between Abu Kemal and Deir there is almost continuous cultivation along both banks, but it extends for not more than ¼ mile from the river. At present, therefore, not much in the way of supplies would be obtainable in the petroliferous country, though there is good grazing here in spring. Whether camels and horses could be obtained would depend on the attitude of the nomad tribes.

APPENDIX E

NOTE ON MULES

Persian mules, as a whole, are good, though they are commonly underfed and overworked. The average load carried is 300 lb. in addition to saddle and line gear, and the average daily marching distance for ordinary caravans is 30 m. Mules are worked from the age of three or even 2½ years, and do not live long; it is rare to see a mule over fourteen years old. They should be bought at ages from three to eight years. Those of three years are the best.

These mules may be divided, roughly, into four classes.

(1) The Arab mule, bred from Arab mares and donkeys, is procurable in the deserts south of the hills. This is a useful pack animal, with good girth and bone and short back; there are practically no draught animals in this class.

(2) The pure Persian mule, bred from Persian mares and donkeys, and usually known as the Isfahan mule, is procurable north of the hills. This class is the best to be had in large numbers, and includes draught and pack animals in about equal proportions.

The animals are brought across the passes as soon as routes are clear of snow, and can be purchased in normal years at Shushtar and Dizfūl from about March 15 onward: Shushtar would probably yield three times as many of this class as Dizfūl. If carrying rates from Ahwāz and Shushtar to Isfahan are high, owing to the late opening of routes and the accumulation of goods for transit, muleteers will not sell their animals readily. Ahwāz is useless as a purchasing centre, as muleteers arriving there can always get contracts for return journeys. Isfahan is the best purchasing centre, and animals should be obtainable at all times except during the ploughing and reaping seasons, December and January, April and May.

(3) The Bakhtiyāri mule is bred from cross-bred mares of poor type, usually half Arab, and inferior donkeys. This mule is thus a small and inferior pack animal, though usually having good bone. Animals of this type are procurable at all seasons at Dizfūl, and in lesser numbers at Shushtar.

(4) The Pusht-i-Kūh mules, commonly so called, are big-boned draught animals, of fine type, which are brought unbroken and wild to Dizfūl from the NW. by their Sagwand, Lur, and Kurdish breeders. They are sold to Dizfūl muleteers at ages from one to three years, and are prematurely broken down by overwork. These mules frequently stand 14·2 and 14·3 hands, and an animal of about 16 hands has been seen. Good arrangements for sale and purchase of these mules exist at Dizfūl and Shushtar, although in 1916 a local boycott by certain sects caused difficulties which would not arise in normal years.

INDEX

Figures in heavy type indicate the page on which the fullest description will be found.

Attention is directed to the Glossary, in which a number of words commonly forming prefixes of place-names are explained. In many instances index-references will be found under these prefixes; e.g. Nahr Yusufīyeh, not Yusufīyeh Canal.

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PLATES

I. Ashar Creek, Basra : *bellams.*

II. *Quffehs* at Baghdad.

III. (*a*) Native boats on the Karkeh.
(*b*) Arab reed hut village.

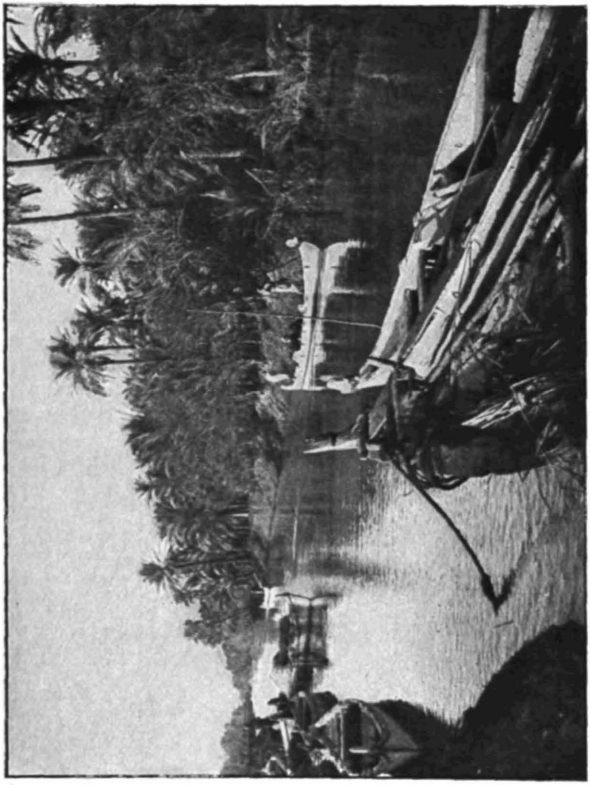
IV. Ctesiphon Arch, from east.

V. *Yaili araba* (conveyance with springs) on Baghdad—Museyib road.

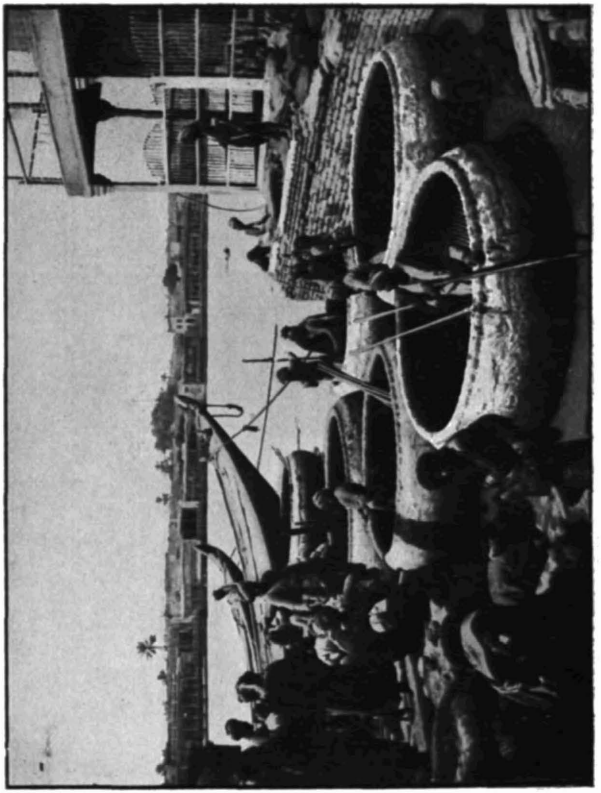
VI. Baghdad : bridge of boats, from east.

VII. A street in Baghdad.

VIII. Baghdad : the railway to Samarra.



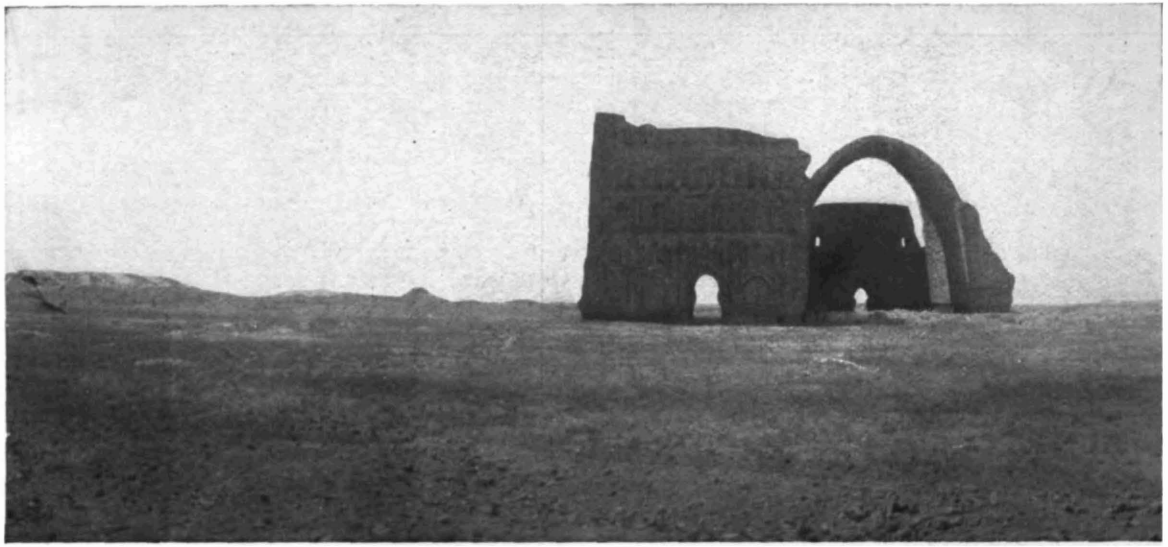
ASHAR CREEK, BASRA: *BELLAMS*



QUFFEHS AT BAGHDAD

(*a*) NATIVE BOATS ON THE KARKEH

(*b*) ARAB REED HUT VILLAGE



CTESIPHON ARCH, FROM EAST

PLATE IV

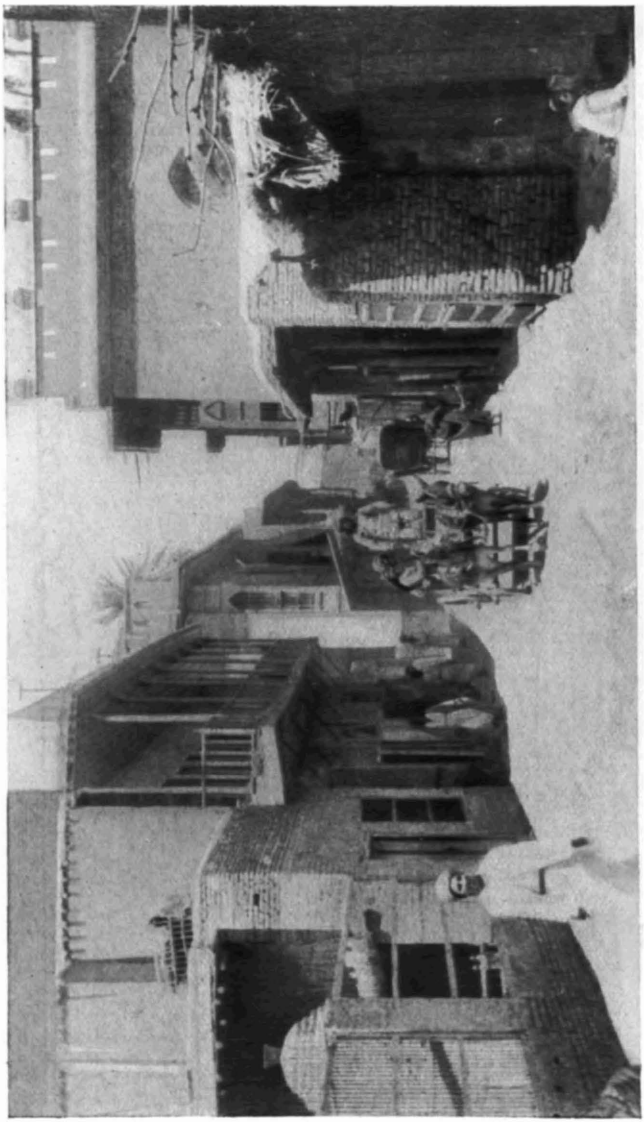
YAILI ARABA (CONVEYANCE WITH SPRINGS) ON BAGHDAD—MUSEYIB ROAD (*Route* 21 a)

PLATE V

BAGHDAD: BRIDGE OF BOATS, FROM EAST

PLATE VI

PLATE VII



A STREET IN BAGHDAD

BAGHDAD: THE RAILWAY TO SAMARRA

PLATE VIII

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