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The
GEOGRAPHICAL JOURNAL

Vol CII No 2 R.G.S. *August 1943*

THE NORTHERN MARCHES OF YUNNAN

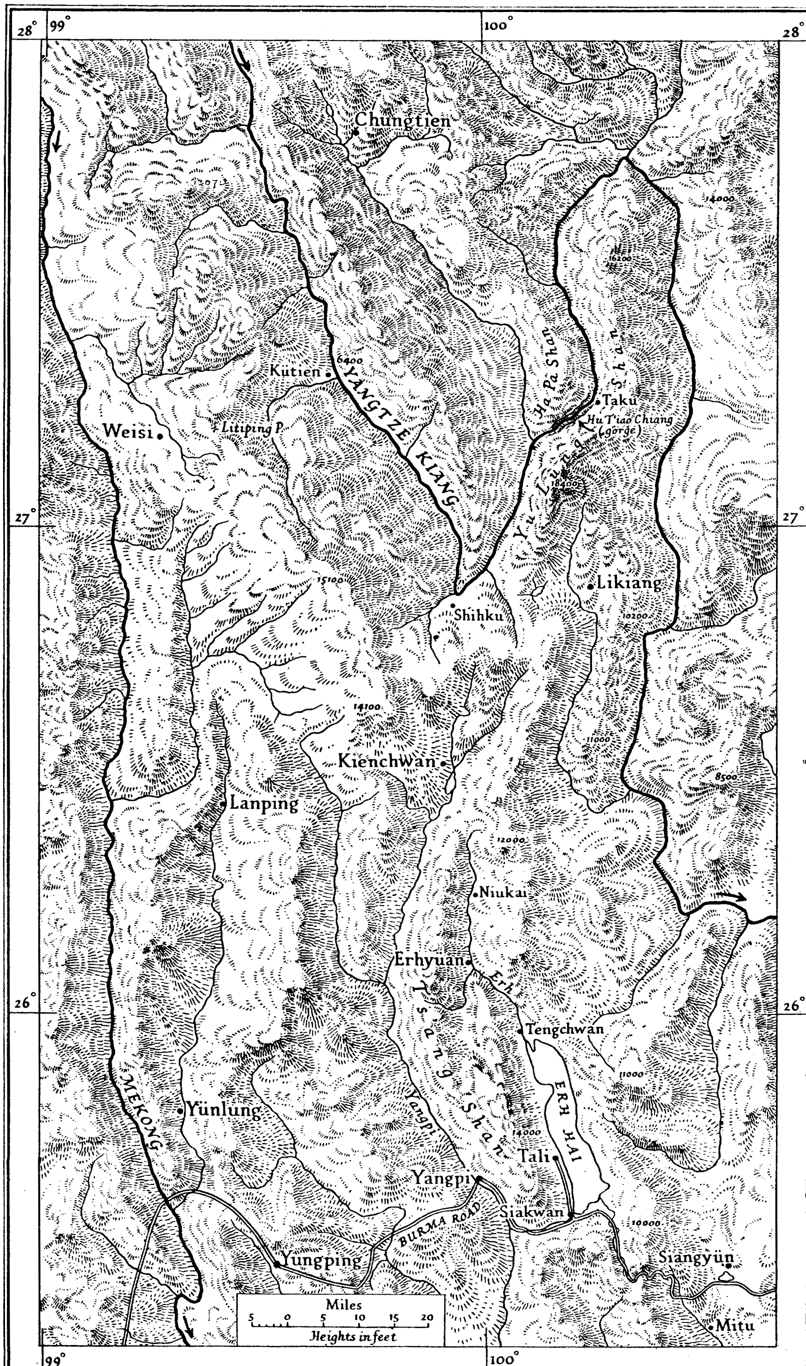
C. P. FITZGERALD

Meeting of the Society, 7 June 1943

THE journey which is the subject of this paper was undertaken in the winter of 1937, consequently some of the observations made upon the progress of new motor roads may now be out of date. The starting point was Tali, a city which lies just off the Burma Road in western Yünnan. Following the main caravan route to Tibet northwards as far as Likiang, I then made a diversion into the loop of the Yangtze, traversing the great gorge between Yu Lung Shan and Ha Pa Shan, and rejoining the road to the north at Shihku. This section of the journey was described in detail in an article in the *Journal* for September 1941 under the title "The Tiger's Leap."

From Shihku I followed the main Tea road northwards to Weisi. The direct route between Tali and Weisi is a part of the road linking the tea-growing district of Puerh (Ningerh) in south Yünnan with Tibet, via Atuntze. As such it is, of course, an ancient trade route, still in active use although no part of it had at that time been adapted to wheeled traffic. The first section of this journey from Tali to Likiang, a distance of 100 miles, is for Yünnan travel relatively easy going. Likiang is five stages from Tali, and there are only two passes to cross. This is exceptional in Yünnan where, as the ranges run from north to south and most roads pass from east to west, a journey usually involves at least one pass in every stage. Because the valleys are often too precipitous to follow, the traveller, even when proceeding from south to north, has often to climb to the crest of the ridge and detour round the narrow gorges.

The first stages from Tali are along the fertile plain by the shore of the Erh Hai, and then up the valley of the Erh river. Tengchwan, the first stage point, is now connected to the Burma Road by an extension of the branch road from Siakwan to Tali. This short section of about 50 miles was only occasionally used for official traffic in 1937 and 1938, and then only in the winter, as there were no permanent bridges or culverts and the streams were only passable in the dry season. A few miles north of Tengchwan the Erh river emerges from a narrow gorge 5 miles or more in length. At this point



28°
99°
100°
Chungtien
Kutien
6400
YANGTZE KIANG
Litiping P.
Weisi
Ha Pa Shan
Yu Lung Shan
Taku
Hu T'iao Chiang (gorge)
18400
16200
14000
27°
15100
Shihku
Likiang
10200
14100
11000
Kienchwan
8500
Lanping
12000
Niukai
Erhyuan
Erh
26°
Tengchwan
Tsang Shan
ERH HAI
11000
MEKONG
Yünlung
Yangpi
14000
Tali
Yangpi
Siakwan
10000
BURMA ROAD
Yungping
Siangyün
Miles
5 0 5 10 15 20
Heights in feet
Mitu

the old road climbed to the crest of the ridge, but the motor road was then being cut out of the side of the gorge.

Erhyüan, the next district city, does not stand upon the road to the north, but a few miles from it. This habit of building the through routes so that they avoid some of the smaller cities is frequently found in Yünnan. Such towns serve as market centres for the farmlands around them and are not engaged to any marked degree in the long distance trade of the caravan roads. Probably for this reason, and because the citizens do not wish to have too much contact with the muleteers and other travellers, the roads were made to pass them by at a convenient distance. Erhyüan, in a small isolated lake plateau, is therefore a quiet place, enjoying the advantage of a constant hot water supply as boiling springs rise within the town itself.

Niukai, the second stage from Tali, is also in this hot-spring region, and perhaps has a future as a Spa. At present there is a sort of public bathing-pool into which a cool spring is run in order to make the temperature of the water bearable. Men and women use this pool on alternate days. The earth-works of the motor road to Likiang were then already completed as far as Niukai, although there were no bridges. Beyond this point the road crosses the first pass Ch'ou Shui Kuan, "Stinking Water Pass" (so called from a sulphurous spring); and the difficult task of cutting the motor road out of the sides of this mountain had not at that time made great progress.

Ch'ou Shui Kuan is the divide between the Erh river, which flows from Erhyüan lake, and the Yangpi river, which rises north of Kienchwan and flows south to the Mekong. From this pass, above the Kienchwan lake plateau, one obtains the first full view of the Yu Lung Shan, still 50 miles away, but towering over all the intermediate ranges. Two stages along the valley of the Yangpi through the town of Kienchwan the road crosses the considerable pass which is here the Mekong–Yangtze divide, and hence-forward the character of the country changes. The plain of Likiang itself is the last of the typical Yünnan lake plateaux, the most northerly of the chain which stretches southward through Kienchwan, Erhyüan, Tali, and Mitu to Paoshan. North and west of Likiang the country is split up into the deep parallel valleys of the Yangtze, Mekong, and Salween. These narrow valleys, almost gorges, are the only areas where any cultivation is possible, and consequently the only areas able to maintain any population. The dividing ranges, sparsely inhabited by Li Su tribesmen, remain covered with dense virgin forest.

Even greater difficulties would be encountered in the construction of the projected roads linking north Yünnan with north-east Burma or Assam than in the building of the Burma Road. The mountains are higher and steeper; the rivers wider and more numerous, and there is no large local population to provide labour. This last obstacle, and the difficulty of feeding a labour force if it were imported from elsewhere, is probably the main reason why no great progress had been made with these schemes before the Japanese invasion of Burma rendered them temporarily useless.

Likiang, the most northerly Chinese city of any size in Yünnan, is a close-packed planless town of narrow alleys reminiscent more of a south Chinese city than the usual "northern" design found in Yünnan. Most Yünnan towns

are built four square, four streets from the four gates meeting at a central point, like the arrangement of a Roman camp. This design, found all over north China in cities of great antiquity, was probably introduced into Yünnan by the Ming dynasty conquerors, if not by the Mongols who preceded them. Likiang, which was the capital of the old Na Khi state before the Chinese conquest, has never been so thoroughly assimilated as the cities of the central Yünnan plateaux, and still retains a foreign air.

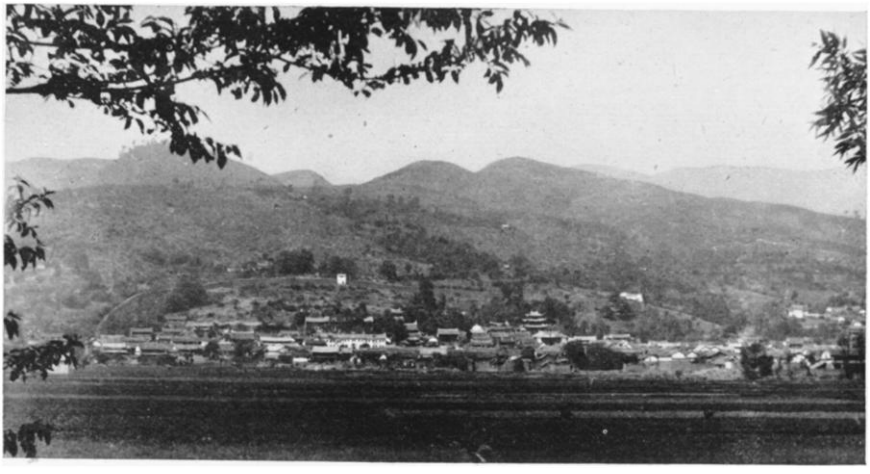
The townspeople themselves, though probably calling themselves Chinese and speaking the language, are well mixed with Na Khi and Tibetan stock. The surrounding villages are Na Khi to the north and west and Min Chia to the south; and there are Li Su settlements in the neighbouring mountains. The city is, moreover, an important centre for trade with Tibet. Tibetan merchants and nomads from the grasslands throng its narrow streets and crowded market. The place has a frontier atmosphere, it is a sort of Yünnanese Peshawar, a character emphasized by the fact that it is the headquarters of the Chinese command in North Yünnan.

The main route to the north from Likiang strikes north-westward to the southern tip of the great Yangtze bend at Shihku, skirting the south-western end of the Yu Lung Shan range. This range, with the Ha Pa Shan on the other bank of the Yangtze, form the two walls for the great gorge known as the Tiger's Leap (Hu T'iao Chiang).

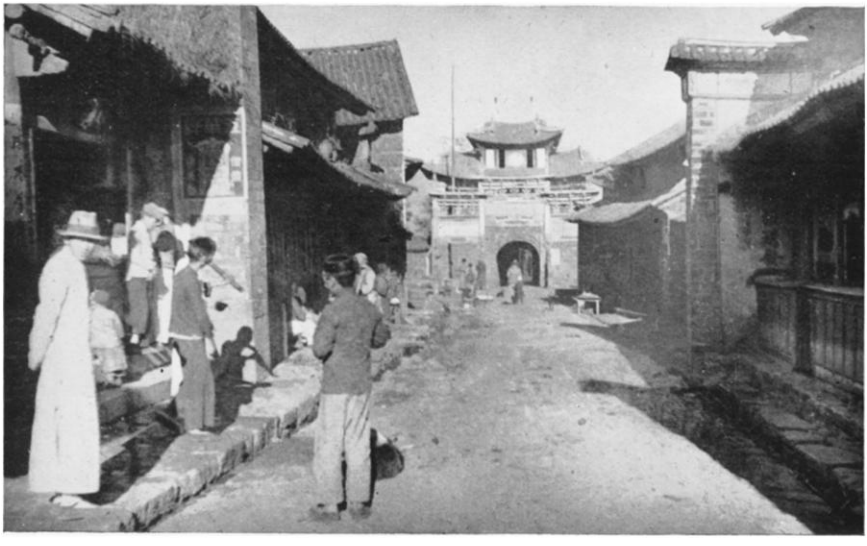
Shihku, a small market town perched above the deep valley of the Yangtze, is the most northerly settlement of the Min Chia people. The topography of this district is unusual. The valley of the Yangtze, which has followed a course almost due north and south, turns sharply at Shihku and runs north between the great snow ranges through the Hu T'iao Chiang. But a wide and fertile valley, continuing the direct line of the upper Yangtze valley, runs southward from Shihku to Kienchwan. This valley is raised some 200 or 300 feet above the level of the Yangtze so that the river, where it turns at the bend, cuts across the Shihku valley at a lower level. No river of sufficient size to have eroded the Shihku valley now flows down it. After a few miles the streams from either slope unite to form the headwaters of the Yangpi, which even at Yangpi town, 100 miles farther south, has not yet become more than a fair-sized stream. The Yangpi river, and thus the whole of the Shihku valley, is in the Mekong basin.

From Shihku the road to Tibet follows the west bank of the Yangtze for four stages to the little town of Kütien. The valley is narrow and the margin of cultivated land rarely more than a few hundred yards in width and often only a few feet. The mountains on either bank rise to 12,000 or 13,000 feet, increasing in height towards the north. Such villages or collections of houses as are to be found are extremely poor and even short of food. During the winter months this region is barely able to feed itself. It was impossible to obtain any other food than turnips; even eggs, which in China are universally available, could not be had. Rice, unless the traveller carried his own supply, was unprocurable. During these four stages my cook was forced to serve meals consisting only of rice and turnips; yet such is the versatility of the Szechwanese that not one of the eight meals made up of these rather unpromising ingredients either looked or tasted the same.

Motor road at Niukai



Erhyüan city



Tengchwan city

Small lake near Shihku

Shihku plain

After Shihku there are no more inns. Dirty and often dilapidated though they are, the Yünnan inn does afford an assured resting place to the traveller, who, if he brings his own bedding, need not be inconvenienced by the unswept dustiness of the tumbledown rooms. There is always a kitchen, and always rice already cooked; stabling for the mules, and a willing host who is anxious to accommodate guests. But in the High Yangtze valley there were no inns. Every stage ended in a wearisome search for some hovel large enough, and, still rarer, clean enough, to take the party and stable the mules. The inhabitants, having no food to sell, were indifferent or unwelcoming.

The traffic of the northern road beyond Shihku is slight, such as there is is largely run by Tibetans or half Tibetans from Weisi. These people never frequent inns, even in those parts of the province where they exist. Whether the innkeepers object to the total absence of personal cleanliness which characterizes the Tibetan nomad, or whether the latter prefer to camp in the fashion of their own country, which in any case they must do on long stretches of their journey, the Tibetan traders who come south to the Tali fair never enter an inn in the city, but camp on the mountain slopes beyond the walls. Presumably for these reasons there is no profit in keeping an inn on the road to Weisi.

It would obviously in a dry climate be much more convenient to follow the example of the Tibetans and camp out. But the Chinese, at least those of the south-west, have a horror of sleeping in the open. Any hovel, however grimy, smoke-blackened, and crowded, seems to them preferable to a night in the woods or fields. This attitude is probably due in part to social prejudice. The Chinese of Yünnan and Szechwan hold themselves to be a race far superior to the Tibetans, whom they regard with a tolerant contempt as semi-savages. To camp out is therefore to "go native" and is unthinkable.

At Kütien the road to Weisi and Tibet leaves the Yangtze valley for the long climb over the Mekong–Yangtze divide. The village itself, inhabited by a mixed race in which Tibetan blood and custom is conspicuous, is the point at which the Communist army under Ho Lung, one division of the forces which made the celebrated Long March, crossed the Yangtze and struck up into eastern Tibet. This event, which had happened two years before, was still the main topic of conversation in Kütien, which had perhaps never before seen the passage of a large army. The fact that the Communists did not commandeer either mules or porters, and paid fair wages for such transport as chose to offer its services, has made a deep impression on the people of this little town, and has no doubt disposed them to welcome any Communist force which might come their way in the future.

Kütien to Weisi is two stages; entirely taken up by the ascent and crossing of the Litiping, the first really considerable pass on the road to Tibet. The summit of the pass is between 12,000 and 13,000 feet, and in winter is liable to heavy snowfalls which close it for several days on end. From Kütien the first day's stage is an ascent through dense forest of ilex, pine, and rhododendron—the same vegetation which is found on the Ts'ang Shan at Tali between 12,000 and 14,000 feet. Here the forest is found much lower, from 8000 to 10,000 feet. This is only one of the numerous evidences of a changed climate north of Likiang. North of the Ch'ou Shui Kuan no winter crops

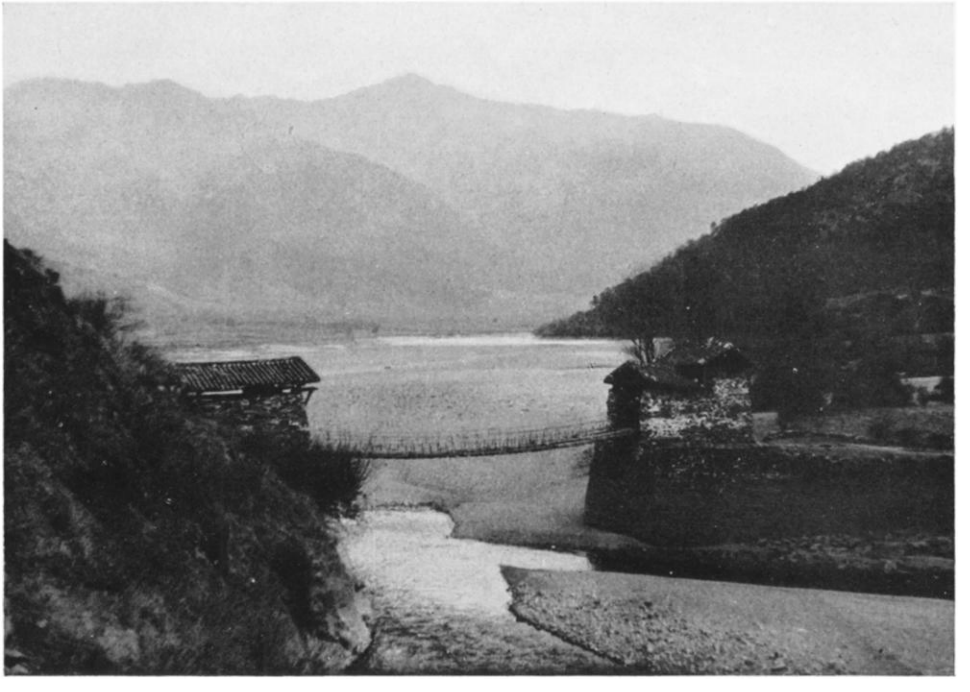
can be grown. While the plain of Erhyüan is green with ripening beans and wheat, the plains of Kienchwan and Likiang are bare and frost-bound in the early morning. Therefore the changing vegetation on the slopes of these mountains is not a true indication of the altitude unless allowance is made for this change of climate. The Tali region, and the central plateaux of Yünnan in general have a Mediterranean type of climate and vegetation; often one might imagine oneself to be in Provence; but North Yünnan has a climate more resembling that of the lower valleys of Switzerland. A small village inhabited mainly by Li Su, and built in the characteristic log cabin style which is typical of this district, is the last halt below the Litiping itself. In spite of the fact that all travellers passing in either direction must of necessity sleep here, before or after crossing the pass, there are no inns, and the inhabitants showed no desire to find room. The prospect of earning a little money to eke out the scanty produce of their limited fields did not seem to make any appeal. The Chinese grimly attributed this indifference to the probability that these same villagers, acting as intelligence agents for the Li Su bandits of the forest, did better out of the robbery of travellers than by catering for their needs.

The last stage to Weisi, the crossing of the Litiping pass, is a stern pull up the very steep and densely forested mountain side until the summit is reached. Surprisingly the crest of the pass is a flat plateau, with patches of forest and wide grassy spaces, astonishingly English in appearance. If it were not for the magnificent panorama of ranges to the east, beyond the Yangtze to Yu Lung Shan, and westward to the high peaks of the Mekong–Salween divide, one would certainly imagine oneself to be on a Surrey common. The air was crisp, although the sun shone. Small streams among the grassy glades were edged with ice, and snow lay banked in shady places. While eating a mid-day snack in this peaceful English scene a party of Chinese merchants, bound for Atuntze and the forest country of north-eastern Burma where strange "medicines" can be bought, came over to us and politely intimated that they were now moving on. We did not appreciate the significance of this until they added that they would not advise a small party of people to remain behind, as the seemingly peaceful woods held Li Su robbers who were no doubt even then observing us. The scene seemed less English as we accompanied our Good Samaritans down the long descent to Weisi.

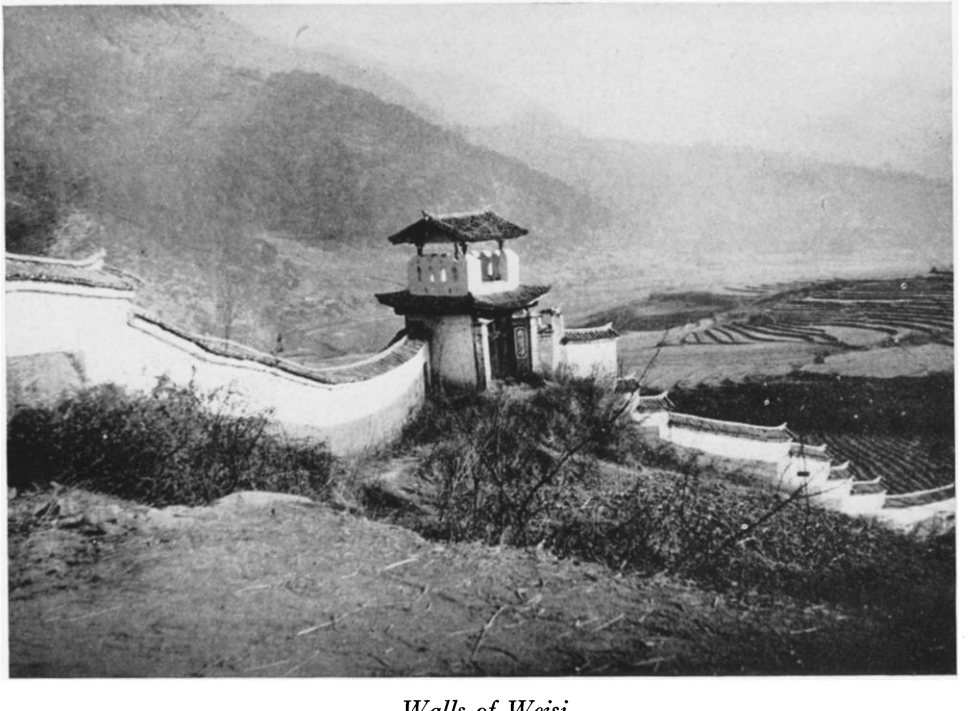
Weisi, the last Chinese settlement in Yünnan, for all points farther north or west are inhabited by Tibetans or Li Su, was founded as a garrison town, and still retains this character. The walls, though no doubt adequate in their day against Li Su tribesmen or Tibetan raiders, are now more symbolic than practical. But the situation of the town, upon a steep hill overlooking the valley of the Weisi river which flows within a few miles into the Mekong, is strong. It cannot be called an interesting town. There are few temples, except one to Kuan Ti the soldier's patron, which are worth a visit. The shops sell mostly articles of utility and there is no local industry. Weisi remains what it has always been, an isolated military post on the very fringe of the Chinese world. The Lamasery, a mile or two from the city, although not a large or famous foundation, attracts a considerable pilgrimage, perhaps

View from Litiping pass

On the Litiping pass



Suspension bridge, Kütien



Walls of Weisi

because it is the most southerly outpost of Tibetan Lamaism in a country whose racial composition is slowly changing.

Many surviving evidences, as well as historical records, show that the Tibetans are being pushed back in north Yünnan. Places such as Shihku and Likiang still have Tibetan names, which are probably the older names, existing before the Chinese re-named these cities. The names of other places in Yünnan suggest that they may be corrupt Tibetan, and the elaborate defences of passes leading north survive to prove the former danger of deep Tibetan raids into the southern valleys.

It does not appear that apart from the building of fortified cities such as Weisi, the Chinese have actively taken steps to evict the Tibetan population. The advance of the Chinese, or of native Yünnan stocks such as the Min Chia who have acquired the main features of the Chinese culture, is rather by colonization than conquest. The Chinese arrive and cultivate, the nomads withdraw to the untouched pastures.

DISCUSSION

Before the paper the PRESIDENT (The Rt. Hon. Sir GEORGE CLERK) said: Mr. Patrick FitzGerald needs few words of introduction to this meeting, for he has twice in the last few years given us valuable papers, the fruit of his long sojourn in Western China before this war. Many of us remember with pleasure the account of the making of the Yünnan–Burma road which he gave us in January 1940; also his paper on the most interesting Tali district of Western Yünnan two years later. This evening he is to take us farther into Yünnan and to describe its northern borders.

Mr. FitzGerald then read the paper printed above, and a discussion followed.

The PRESIDENT: We were honoured by the presence of Dr. George Yeh, Counsellor to the Chinese Embassy. I had hoped to induce him to say a few words in regard to Yünnan but he has, unfortunately, been called away.

Admiral Sir WILLIAM GOODENOUGH: We saw an interesting photograph of various fields in the bed of the Yangtze. Are those fields owned separately by individuals or does some individual own them all and let them out? And are they all ricefields or is some other form of agriculture carried on there?

Mr. FITZGERALD: Rice is grown in summer; beans and wheat in the winter. In the Tali district most of the fields, some of them not larger than the floor of this Hall, would have been individually owned; in the other parts of the region a person might have owned as much as 40 acres, which is about the largest holding in the whole of the Tali district.

Dr. HUGH SCOTT: The charming old suspension bridges we saw had a little roof-building at each end. Is there a special custom of loading and unloading?

Mr. FITZGERALD: The little structures at each end of the bridges may protect the places where the chains of the bridge are anchored into the rock. They are also temples. Some contain a little altar to some protecting deity. Occasionally one sees people stop to light a stick of incense as they go on their way. I think the idea of having those little gateways is largely artistic.

The PRESIDENT: I was much interested in those timber houses which Mr. FitzGerald said one might expect to see in Canada or Western America. They can also be seen any day in Slovakia or in the Carpathians. People who work in wood find out and evolve the same type of architecture, wherever they may be. The photograph of the timber house was exactly like one I used in Slovakia,

which had a kitchen with plank beds all round it and another room in which I had a bed made of the local pinewood, with little pine branches strewn as a mattress. That was the type of hut the Slovak peasants put up for me when I was shooting stags.

Another interesting point was the change from what our lecturer described as the Mediterranean to the Northern European climate. His photographs brought out that change very well indeed. The scenery in the heart of Central Asia might quite easily have been seen anywhere in Northern Europe. It now remains only to thank Mr. FitzGerald for his most interesting and beautifully illustrated lecture.

Not all the place-names in Mr. FitzGerald's paper can be found in the Chinese List of Post Offices. Where possible names follow the List, elsewhere the Wade-Giles romanization.

THE CAPACITY OF THE UNITED STATES TO SUPPORT POPULATION

WILLIAM J. BERRY, Western Michigan College

THERE has long been considerable interest in the maximum number of people that may live in America. In recent times it has been rather widely accepted that this maximum number has been attained, or very nearly so, and that any considerable increase in population must be accompanied by lowered standards of living if not indeed in actual starvation of many people. Most geographers however are of the opinion that many more people might live in our land even without much change in our habits of living, and that our population would be multiplied two or more times if ways of living in vogue in some other lands were practised. In many instances the subject has been somewhat differently stated: What will the eventual population of America be?

Geographers, for the most part, have avoided the subject although they are best qualified to discuss it. Many factors influence population changes; the trends of the present are largely unpredictable, and many things may occur that cannot be foreseen. Nevertheless, there is enough interest in the subject to warrant some attention being directed to it.

One way of arriving at an approximate capacity is by comparing the various parts of the United States with other parts of the world, and assuming that as many people may live here, per unit of area, as live in the most densely populated part of the world with similar conditions of climate, surface, and mineral resources.

This investigation tries to determine the capacity of the United States by such comparisons. The country is divided into what may be called "population regions," each having a similar physical complex throughout and therefore in all parts approximately the same population potential; and the areas of the regions are computed. Then we determine the region of the world

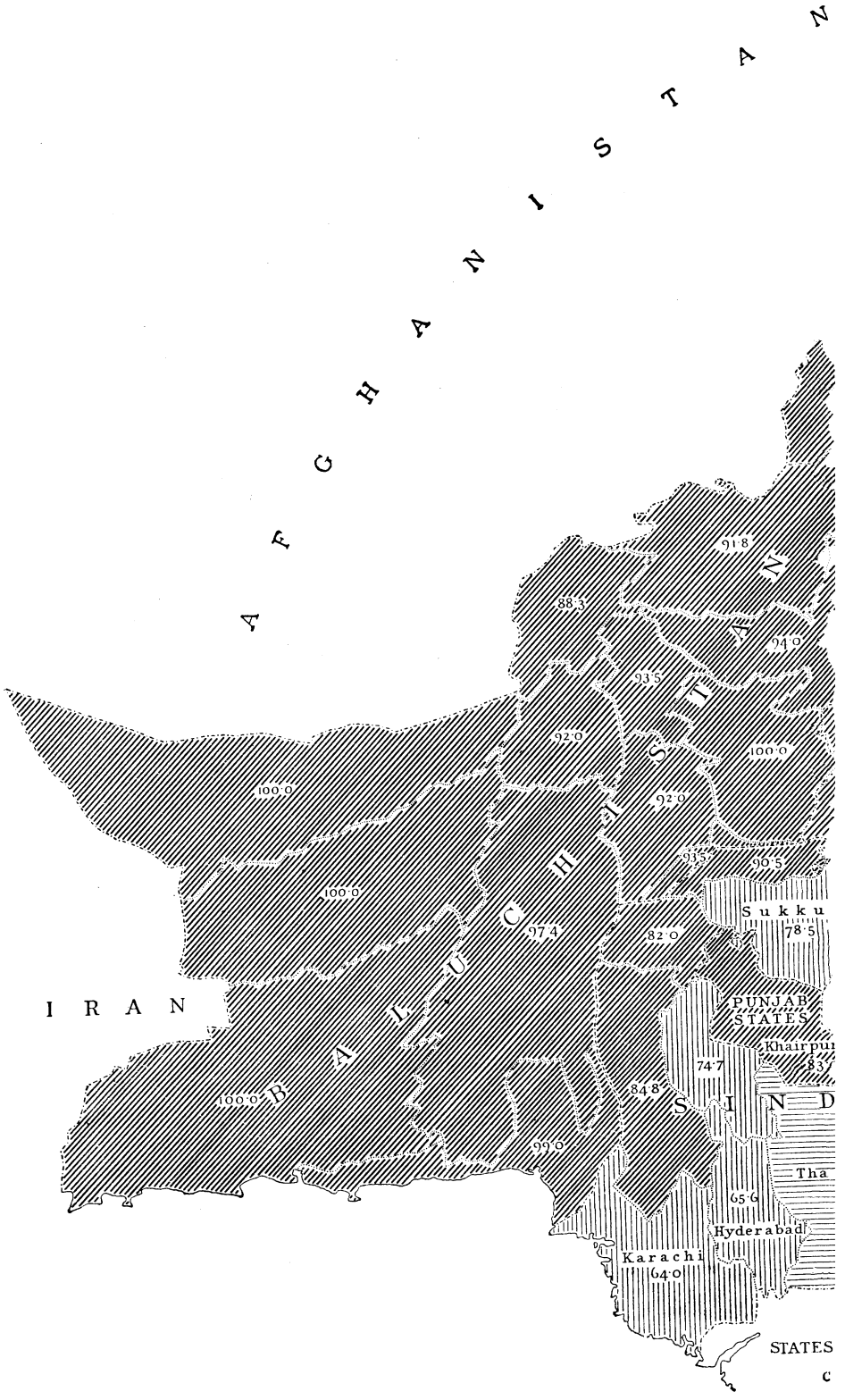
GEOGRAPHICAL ASPECTS OF THE PAKISTAN SCHEME

CAPTAIN O. H. K. SPATE

THE emergence, within the last three or four years, of the Pakistan issue has given an entirely new emphasis to the Indian communal problem. It is not indeed easy to define precisely what is meant by Pakistan, the more so as neither the proponents nor the critics of the scheme show any eagerness to define their terms. A broad distinction may be drawn between the use of the word as a political slogan, and its use to designate a definite area involved in the attainment of the slogan's aim; both usages are current in India. In the former sense, it is equivalent to a demand for self-determination for Indian Muslims which (according to the individual speaker or writer) may mean anything from cultural autonomy to complete secession from India; though the more extreme interpretation appears to be more representative of those who would style themselves Pakistanists. Strictly speaking, the word Pakistan is not the name of any particular historical or territorial entity, but is a made-up term meaning "the Land of the Paks," that is, roughly, of the Pure or Faithful. But it is frequently loosely used to cover all those areas in India with a Muslim majority for which the right of self-determination is claimed. It is better however to restrict the word Pakistan to the more fundamental part of the claim, that is, the four provinces of the Punjab, Sind, Baluchistan, and the North-West Frontier Province, since the other main unit in the scheme, Bengal with all or part of Assam, is often referred to by its advocates as Bangistan. The more dubious demand for Usmanistan or the Nizam's Dominions, which is not based on the possession of a Muslim majority, is so vague as hardly to need detailed consideration.

Since the arguments for Pakistan are to a large extent avowedly based on geographical considerations, and since the campaign, if successful, would add a new entity to the political geography of Asia, a brief examination of these arguments may not be out of place in a geographical journal. This review will not be concerned with the political controversy as such. Where the balance of subjective argument on points of culture and ideology is so nice an outside observer may well feel that the question becomes to a large extent one of political and economic expediency. It is the object of this article to put forward, from this somewhat empirical viewpoint, a sketch, as concise and objective as may be, of the demographic and economic background to the demand for Pakistan.

The idea was first mooted, in a rather vague form, by the late Sir Mohammed Iqbal in 1930. Only within the last three years however has the demand become part of the official programme of the All-India Muslim League, in part at least as a reaction to the policy of some of the Congress ministries. The League's Lahore Resolution (April 1940) laid down as the "basic principle" without which no settlement would be acceptable to Muslims "that geographically contiguous units are demarcated into regions which should be so constituted with such territorial adjustments as may be necessary that the areas in which Muslims are numerically in a majority, as in the North-Western and Eastern Zones of India, should be grouped to constitute inde-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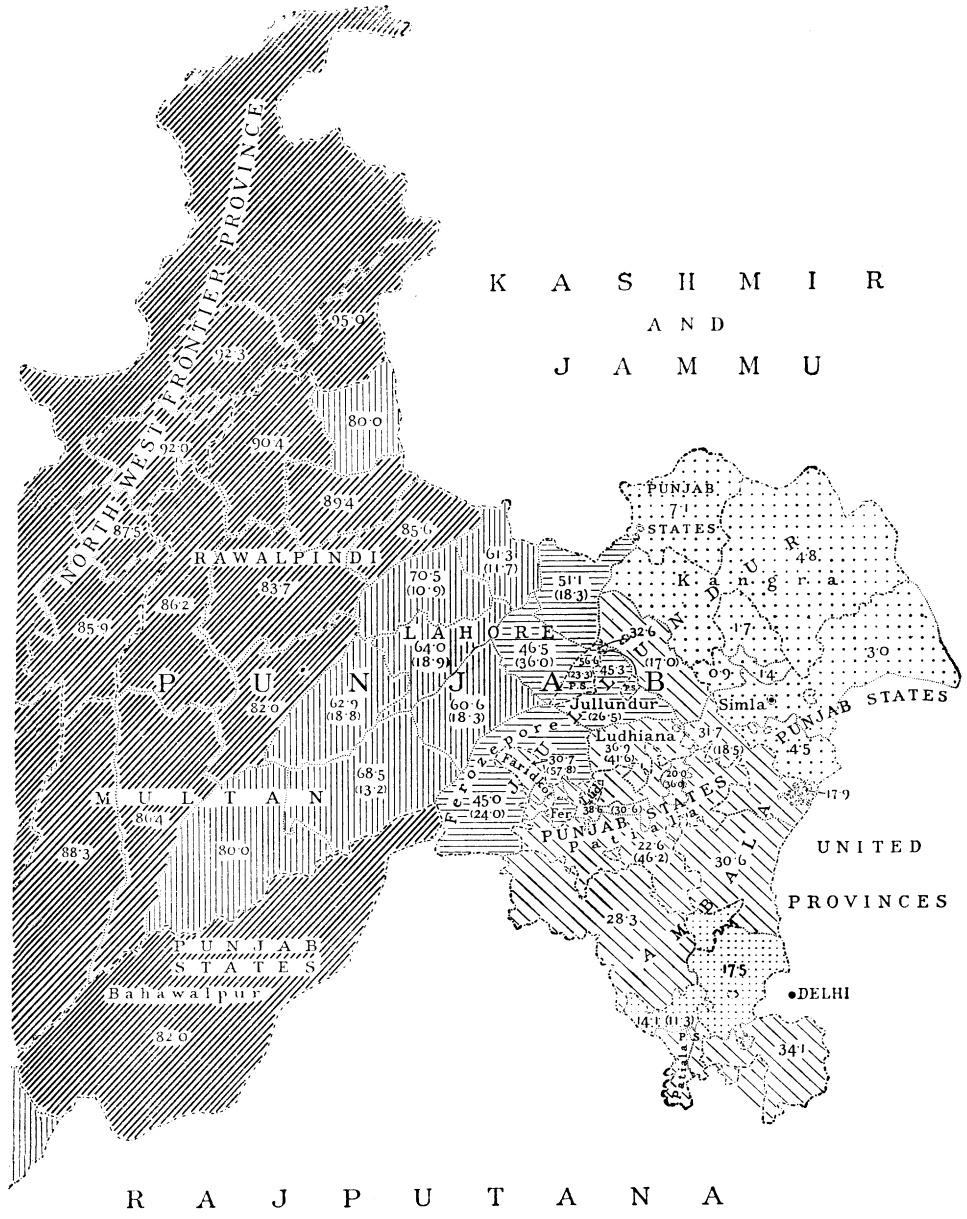

Parkar

Percentage of Muslims by districts

- >80 %
- 60-80
- 40-60
- 20-40
- 10-20
- <10 %

Where over 10% of total the percentage of Sikhs is shown in brackets

Scale of Miles

50 0 50 100

..... *District boundaries*

F WESTERN INDIA

u t c h

Fig. 1. Pakistan

pendent states in which the constituent units shall be autonomous and sovereign." As at first interpreted this not entirely lucid resolution did not altogether negative a Central Government "with minimum powers" in which autonomous Hindu and Muslim spheres should "collaborate as equal" [1]; a *Staatenbund* as opposed to the *Bundesstaat* which was the most to be hoped for from the Congress Raj. The Madras session of the League (April 1941) to some extent tightened up the demand, and to judge from authoritative current pronouncements nothing less than complete secession is aimed at. Mr. Jinnah at least appears to ignore the suggestion of territorial adjustments and (while refraining from committing himself to any particular map) possibly even to envisage a Punjab–Bengal corridor. It is impossible to be sure how much, if at all, this *non possumus* attitude may represent merely a determination to keep the League's bargaining power intact; the 1943 Delhi conference threw no further light on this aspect of the matter.

As suggested above, the programme includes three demands of diminishing intensity which cover the following areas: (i) The north-western provinces of Punjab, Sind, N.-W.F.P., and Baluchistan, or Pakistan proper, which is fundamental [2]; (ii) Bangistan, or Bengal (possibly with Assam), which does not appear to be so seriously pressed; and (iii) a somewhat shadowy claim to Usmanistan, *i.e.* the Nizam's Dominions. This last point need not long detain us; Hyderabad is of course predominantly Hindu in population (see p. 133) with a Muslim ruler, and the claim here, so far as it is pressed at all, avowedly abandons self-determination and is based simply on the right of conquest and treaty.[3] Obviously this is destructive of Pakistan's own claim to independence. Usmanistan is thus of little or no practical importance, though Sir Chamanlal Setalvad has suggested, with humour not perhaps entirely untouched by malice, that an "adjustment" might be made by an exchange of thrones between the Nizam and the Hindu Maharajah of Muslim Kashmir.

Of the numerous arguments for and against the Two Nations theory, two only need concern us here: the claim that geographical factors combine with those of religion and custom to differentiate the Muslim areas from the rest of India so completely that none but an administrative unity, crushing all local interests, is possible; and secondly the argument drawn from historical geography.

With regard to the first, and more fundamental, contention, a reasoned and temperate exposition may be found in 'Pakistan a Nation' (1940), by "El Hamza," which has a very strong bias towards geographical determinism. The series of distribution maps which El Hamza presents certainly emphasizes the strong geographical differentiation of Pakistan; particularly suggestive are those showing the distribution of wheat, camels, and canal irrigation, while the area served by the port of Karachi and the North-Western Railway is almost exactly coincident with that of Pakistan, an integration hardly to be paralleled elsewhere in India. The greater the weight we attach to these

[1] 'Indian Year Book, 1941–2,' p. 914.

[2] Pakistan as used below is invariably confined to this restricted sense.

[3] Chaudry Rahmat Ali writing on "The Full Fundament" in 'Pakistan,' a symposium representing all points of view (edited K. M. Ashraf, Delhi, 1940).

geographical factors however the more difficult does it become to accept the racial and ideological aspects of the Two Nations theory. The argument is that geographical influences have produced in Pakistan a nearly homogeneous nation which is culturally sharply severed from Hindustan, the severance being completed by waves of invaders from the north-west who have brought with them a religious outlook, completely incompatible with that of the Hindus, with whom the newcomers have not intermixed to any great extent. Leaving aside the fact that a large proportion of the Muslim community is descended from converts from the lower Hindu castes, it is clear that the geographical factors which foster the individuality of the north-western Muslims cannot possibly account for the (numerically larger) Muslim community in Bengal, an area which in fact reproduces in a higher degree precisely those features of the environment of Hindustan which are alleged to be responsible for the Hindu outlook. It is futile to base an argument for Muslim self-determination on a map of the wheat-eating areas of the north-west when the Bengali Muslim eats rice. Again, the geographical unity of Kashmir and of the Punjab plains is obvious only to the eye of faith.

The argument drawn from historical geography simply points to the fact that in the past India has rarely been politically united. The unstated inference that this fact supports a north–south division of the Indo-Gangetic plain however by no means follows. An examination of what may be called the average boundaries of some eighteen major political distributions from Asoka to Aurangzeb (third century B.C. to latter part of seventeenth century A.D.) suggests, as might be expected from general physiographical considerations, that the fundamental division is an east–west one, marking off the Deccan from the Indo-Gangetic plain. After the Himalaya themselves by far the most recurrent frontier zone is along the Narbada and eastwards across the forested Chota Nagpur plateau to the sea south of the Ganges delta. As for the division of the Indo-Gangetic plain itself, El Hamza cites Professor Lyde's assertion that the Jumna has "*constantly* been a political frontier, *e.g.* for Kanishka's Empire (A.D. 350), for the Empire of the White Huns (A.D. *c.* 500), etc." (my italics). It is with diffidence that one dissents from Professor Lyde; but (apart from the suggestive "etc.") these citations after all cover a relatively small part of India's history; the deep-seated structure-lines of political and cultural geography do change, or there would be no historical geography.[1] The approximate frontier between Greco-Persian and Indian states before the Mauryas (321–184 B.C.) was along the Hydaspes (Jhelum); and the influence of the Guptas (A.D. 320–480) also extended up to this river. It is unlikely that these early boundaries were linear; a zone of gradually lessening control is more probable. But the later Muslim states have surely far more relevance to the matter in hand; and here, even after the earlier Slave and Tughlak Empires had broken up, almost the only river which was *not* often used as a boundary was the Jumna. Alike the depleted dominions of the Lodis (A.D. 1451–1526) and the great Empire of the Moghuls were *centred* on the Jumna in the Delhi–Agra region, and it is significant that

[1] Citations for an opposite view might also be extracted from Professor Lyde; *e.g.* "Asoka, the Afghans, the Moghuls, had all found Hindustan more or less a unit" ('Continent of Asia,' 1933 ed., p. 264; and *cf.* pp. 392–3).

in the worst days of the Delhi Kingdom, before and after the greater Moghuls, its boundaries were generally on the Ganges and the Sutlej. It is probably however true that Delhi owes much of its importance not only to its nodality but also to its position in the transition zone between two differing economies. The southern part of the Delhi Doab is indeed a critical area; and the natural boundary between the Punjab and Hindustan (in the restricted sense) appears to run from the district round the Sutlej-Beas confluence obliquely across the Doab towards the lower Jumna around Agra, where a third natural region, Rajputana, marches with the other two in the last spurs of the Aravallis. As will be seen later, the present communal boundary lies in this same zone well to the west of the Jumna.

The real basis of the self-determination claim is simply communal. The total population (1941) of Pakistan, including the minor Indian States but excluding Kashmir and the frontier agencies, is some 42,787,000. Of these only 25,064,000 or 58·6 per cent. are Muslims, the principal minorities being about twelve million Hindus and five and a quarter million Sikhs. Inclusion of the areas mentioned above raises the Muslim percentage to no more than 60·7. However as over ten million of the Hindus and nearly all the Sikhs are in the Punjab, the minority problem in Pakistan is more localized than the bare figures suggest; the map of Muslim district percentages (Fig. 1) shows that there are relatively very few districts where the communities are at all evenly balanced. Of the twenty-eight districts of the Punjab, eighteen have an absolute and three a relative Muslim majority; of the seven districts with Hindu majorities (four absolute and three relative) five were in the eastern (Ambala) division, and one of the others is the sparsely populated hill district of Kangra. In Jullundur and Lahore divisions the Sikhs introduce a third element, attaining a relative majority in Ludhiana district.

It will be clear from Fig. 1 that the communal boundary lies considerably to the west of the Jumna, and that were Pakistan to achieve independence a rectification of frontiers by detaching Ambala Division would be desirable. Such a Zonal scheme was included in Sir Mohammed Iqbal's original suggestion and was also mooted by the late Sir Sikandar Hyat Khan. The position has since hardened; the League, or at all events Mr. Jinnah, seems committed to the position that "self-determination" means a bare majority of the Muslim population only in all *Provinces* where they have a majority. In Ambala and Jullundur Divisions this would nowhere represent more than 23 per cent. of the total population; and even a two-thirds majority of the Muslims would amount to 30 per cent. of all inhabitants in two districts only, Jullundur and Ferozepore.

The Sikhs present a difficult problem under any dispensation. Though they are nearly all to be found in two divisions (Lahore and Jullundur), they hold even a relative majority in only one small district; they have also an absolute majority in the small state of Faridkot and a relative one in Patiala, the largest (in population) and most important of the Punjab States. The idea of a Khalsistan, perhaps as an autonomous unit within Pakistan, has been suggested, but is clearly impracticable; while the blandishment that the Sikhs would be lost in Hindustan but would form a fine 14 per cent. minority in Pakistan seems to have met with small response.

In Sind the percentage of Muslims varies from over 90 in the west to only 47·5 in Thar Parkar district north of the Rann of Cutch; however this is a thinly populated area and there are obvious objections to detaching it from the province. Sind was a part of Bombay Presidency until 1936, but its geographical and historical connections are with the Punjab; it is largely a matter of accident that it was administered from Bombay.

It may be noted that the Muslim strength in Sind has fallen from 76 per

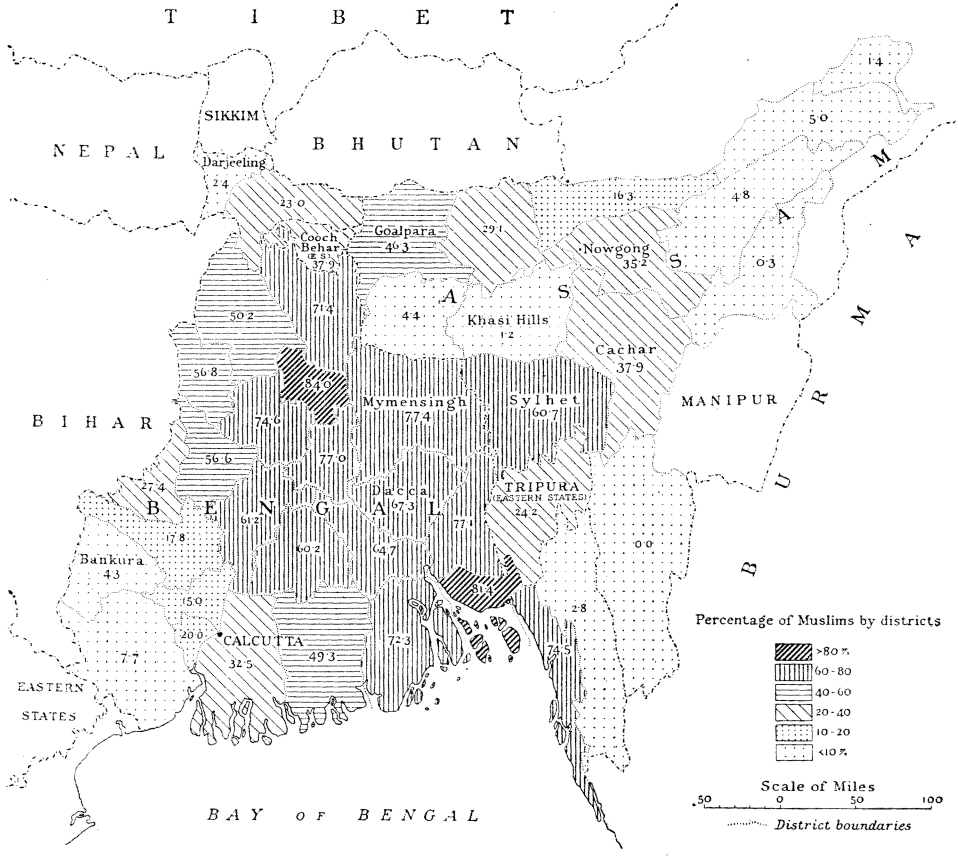

Fig. 2. Bengal and Assam

cent. in 1901 to 71 per cent. in 1941. There appears to be some internal migration of Hindus from Sukkur and the districts on the right bank of the Indus to Karachi; while irrigation development in Hyderabad district "has attracted a more than equal number" of Muslim immigrants. Nevertheless the Hindu increase in right-bank districts between 1931 and 1941 amounted to 14 per cent. while that of the Muslims on the left bank was only 10 per cent. The conclusion appears to be that more Hindus are coming from the east and south than Muslims from the west and north.[1]

[1] 1941 Census, Sind Tables, p. 26.

In Bangistan a rectification of frontiers would also seem a necessary preliminary to self-determination. In 1941 Muslims were 33,378,000 out of a total population of 62,452,000 in Bengal; in Assam 3,474,000 out of 10,930,000. Detailed figures show Muslim majorities varying from 50·2 per cent. up to 84·0 per cent. in sixteen (generally eastern) districts of Bengal while in the remaining twelve their percentage dropped as low as 2·4 and 4·3 in Darjeeling and Bankura respectively (Fig. 2). In Assam there is a Muslim majority of 60·7 per cent. in Sylhet district and a strong minority in Cachar (37·9 per cent.). These areas lie in the Surma valley adjoining the overcrowded Bengal districts of Mymensingh and Dacca, emigration from which has been a notable feature of the last few decades. The population involved has been mainly Muslim, and it has been a "family migration" of squatters in contrast to other internal movements which are largely comprised of wage-earners whose families remain behind.[1] North of the Khasi Hills Goalpara and Nowgong districts have 46·3 and 35·2 per cent. Muslims respectively.

A division of East Bengal plus the Surma valley would thus be indicated on communal grounds; and although "partition" has a bad ring since Curzon's failure a division under purely Indian auspices might be a different story: certainly the Congress scheme for territorial reorganization of India along primarily linguistic lines pays no attention to the present (often arbitrary) provincial boundaries, though it does not provide for any rearrangement in the present case. However even more than is the case with Pakistan itself, the viability of Bengal cannot be judged on merely numerical grounds.

There remains the larger question of the extent to which the creation of Pakistan would in fact represent self-determination for the Muslims. In 1941 there was a total of 94,390,000 Muslims in All-India. Neglecting possible rectifications of boundaries, and including Kashmir and the Punjab States in Pakistan, some 28,393,000 of these, or 30·1 per cent. of the total, would be included in Pakistan and 33,378,000 (35·4 per cent.) in Bengal; the remainder, a full third of the total, would continue a scattered minority in Hindustan. Moreover the two Muslim States would contain minorities of 40 per cent. in Pakistan and 46 per cent. in Bengal—minorities too large for successful assimilation, especially when we consider that they contain on the whole a larger proportion of the richer, more literate, and more consciously influential classes. Rectification of frontiers to exclude as many as possible of these heterogeneous elements will of course merely increase the number of "unredeemed" Muslims to about half the total. The circle is complete: in either case it seems scarcely possible that irredentist movements from one side or the other—or both—would not develop. This mere fact of its incompleteness is in itself probably the strongest argument against the Pakistan idea, coupled with the encouragement its achievement would give to other fissiparous tendencies (see p. 133).

It can, it is true, be argued that minorities on both sides of the line offer guarantees, or rather hostages, for the good behaviour of the majorities. Dr. Ambedkar thinks this, with probable justice, "a dreadful plan" and suggests transfer of populations as the only way out of the circle.[2] Neglecting the

[1] 1931 Census, Report, pp. 65–6.

[2] B. R. Ambedkar, 'Thoughts on Pakistan' (Bombay, 1940), Ch. VI *passim*.

absence of numerical equivalence (all the greater if his rearrangement of boundaries be accepted), there are grave difficulties involved because the populations to be exchanged are by no means of equal economic status. As a general rule it is the intrusive community which is the more urbanized,

	Pakistan	*Bengal*	*Rest*	*Totals*	*Kashmir*	*Hyderabad*
Total ..	46 809	62 452	277 405	386 666	4 022	16 339
Muslim ..	28 393	33 378	32 619	94 390	3 074	2 097
% Muslim	60·7	53·4	11·8	24·4	76·4	12·8
	30·1%	35·4%	34·6% of the total Muslims in India.			

Pakistan includes Kashmir and Sind; Rest of India includes Hyderabad and other States; Bengal includes Indian States.
Figures for Kashmir and Hyderabad thus occur twice in the table.

Populations (in thousands) and percentages

i.e. Hindus in the North-West, Muslims elsewhere except in Bengal and (for special reasons already mentioned) Assam. Thus in 1931 the number of Hindus per thousand living in towns was 806 and 651 in Baluchistan and N.-W.F.P., only 99 and 79 in Central and United Provinces respectively. The corresponding Muslim ratios were 107 and 115, 452 and 289.[1] But while the *cadre* of Muslim traders and professional men in the great cities of the United Provinces might be replaced, the sudden disappearance of the fewer but very important Hindu business men from the north-west would involve serious economic readjustments. Even if it were only a matter of finding land and capital for exchanged peasantries, it must be remembered that the two groups would be accustomed to very different agricultural regimes; and it would also be extremely difficult to find estates to compensate the numerous class of Muslim Zamindars in the United Provinces. Nevertheless, given Pakistan, the difficult problem of a transfer might have to be faced.

Much Indian criticism of the Pakistan scheme is based on economic and financial grounds. There are really two aspects of the problem: one whether Pakistan is economically possible at all; the second whether admitted economic losses may not be over-balanced by political gains. The answer to this second question cannot, of course, be other than subjective.

On the first point, comparison of Pakistan with other countries of south-west Asia suggests that as an economic entity it would hardly be so feeble as to be kept alive only by the injection of international loans. Indeed, the economic interests of the north-west do differ very considerably from those of the rest of India in some respects, much in the way that those of West Australia diverge from those of the Commonwealth as a whole. An even closer analogy might be drawn with the South before the American Civil War. Pakistan is essentially a primary producer with major markets for its cotton and wheat beyond its frontiers; such industrialization as exists is largely confined to a few textile mills and the simple making-up of food products. Nor, except for its not too convenient water-power, has it any considerable industrial resources; salt and a little oil are almost the only minerals. It is therefore very doubtful whether its interests are best served by the high protectionism

[1] 1931 Census, Report, p. 61.

to which the more active commercial and industrial circles of India are apparently wedded, though doubtless an independent Pakistan might well find it desirable to come to a liberal tariff understanding with its richer neighbour.

Fiscally, the Punjab is the only Pakistan Province which is self-supporting; its financial strength is mainly due to irrigation revenue. N.-W.F.P. and Baluchistan, being essentially military provinces, are unable to pay for their own administration. As for Sind, the Committee which examined the fiscal aspects of its separation from Bombay estimated the initial deficit at nearly 100 lakhs of rupees, without allowing anything for the enhanced overheads of a separate establishment. It came to the conclusion that "there is thus no question of Sind being able to stand surety for the Lloyd Barrage, the problem is whether the Barrage can stand surety for Sind."[1] Later inquiries scaled the initial deficit down to some 80 lakhs, but were compelled to admit that even when the Barrage would have reached its maximum returns a smaller but still considerable deficit would remain. At present Sind receives from the Centre an annual subvention of 105 lakhs, to diminish progressively from 1946. The realization that the Punjab, the least purely Muslim of the four, is most unlikely to be able or indeed willing to carry on with assistance on this scale has probably contributed to a certain lukewarmness towards the Pakistan idea observable from the outlying Provinces.

The Pakistanist's answer is threefold. In the first place it is claimed that the Karachi Customs (which are Central revenue) would alone give Sind a large surplus. However it hardly follows that those receipts would be maintained at their present level in an independent Pakistan, since it is impossible without long inquiry to forecast the result of the secular tug-of-war between the natural low-tariff tendency of an exporting primary producer, and the revenue tariff psychology which is traditional in India. Secondly, it is argued that much of the financial burden is due to Defence expenditure, which is itself demanded by an All-India policy and would be unnecessary for a Muslim State on friendly terms or even allied or federated with its western neighbours. The argument is double-edged, since, leaving aside the larger questions of policy, the major portion of the Army's wages bill (in peace at all events) undoubtedly goes to the Punjab; and if the proportion of Army contracts which goes elsewhere is higher, the return in food and clothing to Punjab is a not inconsiderable item in their welfare.

Finally, on the general question it is possible to accept the position that Pakistan would be economically viable on a lower plane than that possible to Hindustan, and that smaller revenues and a reduction in the pace of social progress are simply the price of independence. To the out-and-out Pakistanist, subventions from the central government are little better than disguised loans from a foreign (*i.e.* Hindu) imperialism, which are better done without. One may feel that this attitude is socially retrograde, but it is a subjective answer which cannot be gainsaid by an outsider.

Bangistan, with or without Pakistan, is a quite different case. Relatively highly industrialized as Bengal is, it is very difficult to envisage for it any successful economic life were it to be cut off from the Ganges hinterland. As it is, Bengal is a deficit province only kept on its feet fiscally by the return

[1] Report of Sind Financial Enquiry Committee, 1931, p. 29.

to it of the provincial share of the Jute Export Duty—which obviously is the major portion of the sums raised by this duty, and amounted in 1938–9 to over 17 per cent. of the Bengal revenues. Clearly reliance on a single source of income is highly dangerous: there are other tropical deltas which might turn to jute. The provincial sources, of which Land Revenue is the chief, are not naturally susceptible of great expansion.

The question of Calcutta is also difficult. If partition left this metropolis out of Bangistan, the economic situation of the remnant state would not be enviable—a small territory suffering from severe agrarian overcrowding, cut off from the sources of power and raw materials on which Bengal's industries have flourished, and by the very communal hypothesis to which it owed its existence unable to seek relief in emigration. Were Calcutta included within Bangistan similar problems would remain, perhaps intensified. Apart from the dislocation of Calcutta's entrepôt functions, much of its prosperity is dependent directly on the coal and metals of Bihar. The hinterland would suffer also, and a study of the map suggests that visions of Vizagapatam with its poor communications and poorer hinterland becoming Hindustan's Gdynia are merely taking the will for the deed.[1]

Before leaving Bangistan we may notice the significant distribution of urbanism and literacy between the two communities, as shown by the 1931 Census:[2]

	Rural (thousands)	*Urban (thousands)*	*Per cent. Urban*	*Literacy in Bengal (per thousand)*	*Literacy in India as a whole*
Hindu ..	19 029	2 541	13·3	180	83
Moslem ..	26 468	1 029	3·5	85	44

The figures tell their own story of the generally higher educational and social status of the Hindus in Bengal, and suggest that in practice and over a long term the Muslim nature of Bangistan polity might turn out to be more nominal than real. Pakistan may be held an open question, but there can be few who really believe in the practicability of Bangistan.

A minor point, which might arise were Pakistan (with or without Bangistan) to be attained, concerns the capital of India. Even with the Punjab boundary shifted well west of the Jumna, Delhi would perhaps be felt to be rather too exposed as the capital of Hindustan, and would have lost many of its nodal advantages with the loss of the territory to the west. Historically its associations are overwhelmingly Muslim. The Presidency cities are all markedly eccentric; Madras would hardly be in the running, but between Bombay and Calcutta there might arise a rivalry recalling that of Sydney and Melbourne; the solution might have to be sought in the creation of a humbler Canberra in the Federal Territory of Wardha—which is at least central enough.

The few conclusions which can be drawn from the above review, incomplete as it is, are very tentative. While the excision of even one minority problem from the world would be an unmixed blessing it is generally agreed

[1] The suggestion is made by H. C. Mukerji, "Financial and Military Implications of Pakistan," *Modern Review* (Calcutta), March 1941, pp. 311–12.

[2] 1931 Census, Report, pp. 422–3 and 330.

that fewer state units and less rather than more nationalism are needed to-day. The international position of Pakistan is an interesting subject for speculation: some Hindus fear and some Muslims hope that Pakistan might play a part in a great Muslim federation covering all south-west Asia. Pan-Islamic solidarity is a very real sentiment, but it is a long way from sentiment to a strong political structure. The possibility may be remote, but such a creation would present Hindustan with new defence problems. This is a factor in Hindu opposition to the project; on the other hand some may think with Dr. Ambedkar, who remarks cryptically, if truly, that "a safe army is better than a safe frontier." In essence however the problem is internal rather than international. Were Pakistan a complete solution of the communal problem, it would doubtless be worth while, whatever the price in social progress and historic sentiment; economically it is at least a not impossible proposition. But it is a question whether Pakistan would not in fact create more problems than it solved. It is in the nature of such human problems that they can be solved only by costly experiment; and even then there is no conclusive disproof of the "might have beens" of history.

A STUDY OF LOVEDU SOCIETY

THE REALM OF A RAIN-QUEEN: a study of the pattern of Lovedu Society. By E. JENSEN KRIGE and J. D. KRIGE. (Int. Inst. of African Languages.) *Oxford: University Press*, 1943. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* xvi+336 *pages; illustrations and maps.* 21*s*

THIS important work embodies the results of an investigation into the everyday life, culture, and religion of the Lovedu, perhaps the least known of all South African tribes. In a remarkable foreword Field-Marshal Smuts recommends the book "as one of the most honest and penetrating researches into Native life" that he has come across and gives yet another proof of the versatility of his genius by an expert and inspiring analysis of it, after which any review must sound jejune and dull.

The authors, Mr. J. D. Krige, a nephew of the Field-Marshal, and his wife, Dr. Krige, stayed for a considerable time at the headquarters of the queen and were able by the exercise of great tact and persistence, helped by luck (in that one of the Field-Marshal's daughters had by a fortunate chance already become acquainted with her), to penetrate into the core of the tribal beliefs. A working knowledge of the difficult language was acquired and some twenty months in all were spent, with intervals, in the investigations, chiefly between 1936 and 1938, when the authors held a Fellowship of the International Institute of African Languages and Cultures.

The Lovedu are a Bantu tribe living in the north-eastern Transvaal, insignificant in numbers—some thirty-three thousand—but with a reputation which has spread far and wide over the whole of South Africa as "the people of Mujaji," the great magician and queen of the rain, of locusts, and of drought. The royal ancestors were descended from a son of the celebrated Monomatapa and journeyed down from the region of Great Zimbabwe until they settled in their present home about the end of the sixteenth century. There they mixed

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ON ALEXANDER'S ROUTE INTO GEDROSIA: AN ARCHAEOLOGICAL TOUR IN LAS BELA

SIR AUREL STEIN, K.C.I.E., F.B.A.

In his last letter to the Editor, dated 5 August 1943, from his mountain camp in Kashmir, Sir Aurel Stein promised this paper for the Journal, and it was received 10 January 1944, ten weeks after his death at Kabul on October 26.

THE tour which between January and March of 1943 took me through the State of Las Bela, extending from the coast of the Arabian Sea to the north-eastern confines of Makran, was intended to supplement in two directions the archaeological explorations carried out by me during the cold weather season of 1928–29 in Makran and adjacent parts of ancient Gedrosia. The survey then effected along the Kech valley, Kolwa, and other tracts of British Makran had enabled me at very numerous ancient sites to discover abundant remains of pre-historic civilization which that region, now mainly desert in character, had once supported during Chalcolithic times.[1] A close connection revealed itself between these remains and the civilizations of approximately the same period, far more abundantly attested by excavations at Mohenjodaro and other important sites in the Indus valley to the east and at numerous sites of Southern Persia to the west. Las Bela had so far remained archaeologically unexplored. Yet, in view of its position between the lowermost Indus valley and the neighbouring portion of ancient Gedrosia, it seemed likely that a search for any early sites to be found there might help to throw further light on the extension of that pre-historic culture towards India.

But there was special interest in another direction also attracting attention to Las Bela. Comparatively small as that territory is and generally obscure as its past is, yet the latter presents a phase to which attaches some importance for the historical student. Las Bela was the scene of Alexander's last military operations during his invasion of India, and from it he started on

[1] See Stein, "An archaeological tour in Gedrosia." *Memoir Archaeol. Surv. India*, 43 (1931) 52–144.

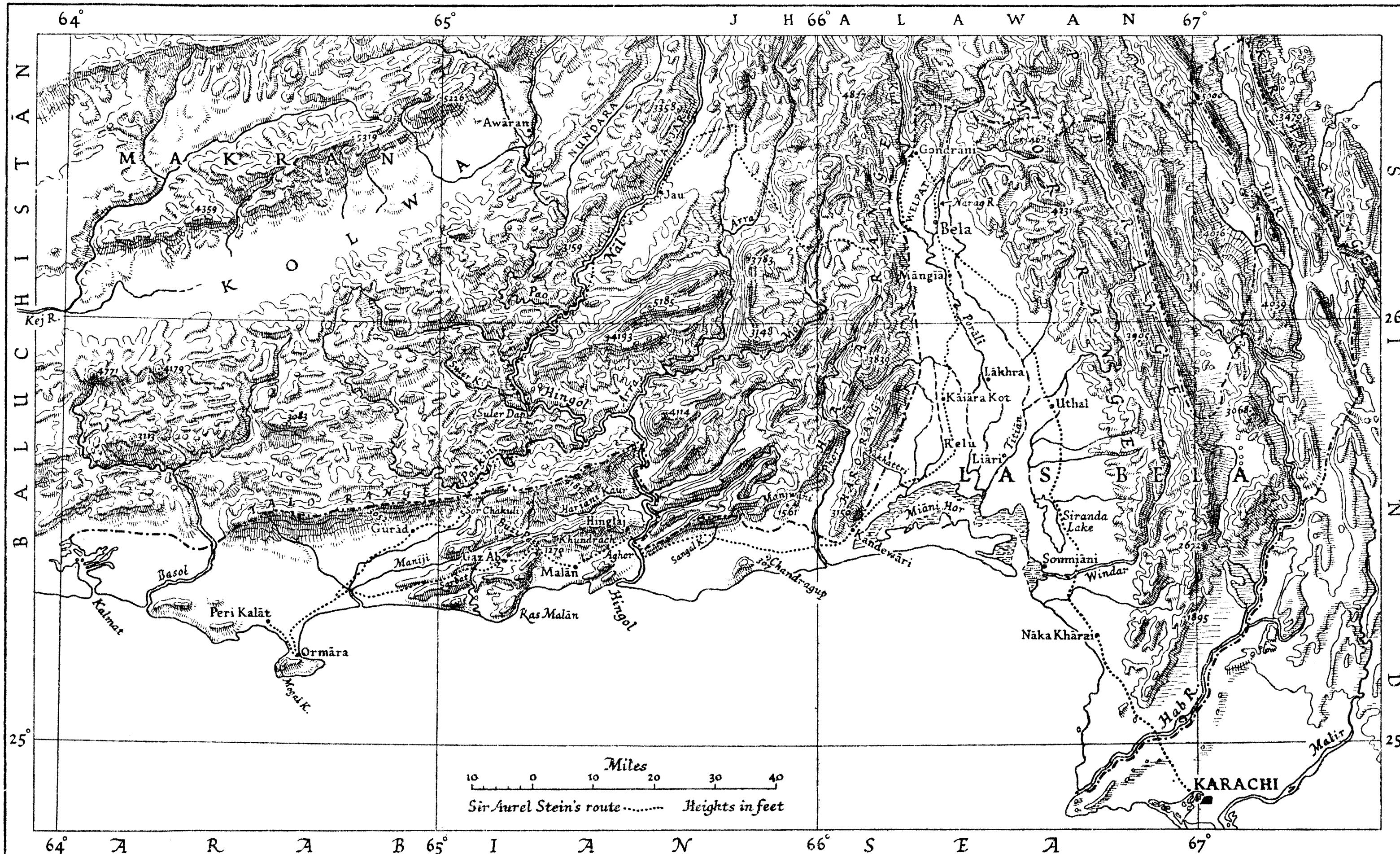
that hazardous retreat through the wastes of Gedrosia which cost his army such grave sufferings and losses as all his historians have graphically recorded. It has been recognized long ago that Las Bela corresponds to the territory of the Oreitai in which those operations took place; but the localities which witnessed them, and in particular the route which Alexander followed on his move from the country of the Oreitai towards Gedrosia, have never been definitely determined.

Before attempting to do this in the present notes it appears necessary first to sketch in brief outlines the essential geographical features of the territory comprised in the present State of Las Bela. To this may be added a succinct account of the tour which took me over a considerable portion of this ground, including such personal observations as may have a general topographical or antiquarian bearing. These notes will usefully serve also for the detailed report to be published elsewhere on the purely archaeological results of my tour.

The main portion of the Las Bela State is formed by a great triangular area stretching approximately from north to south for a direct distance of more than 100 miles. At its apex there descend numerous small valleys from an agglomeration of hill ranges rising at points to heights of more than 5000 feet; their flood-beds form the headwaters of the Porali river. This by its inundations during the monsoon rains provides fertility for parts of its great alluvial fan which steadily widens until it strikes the coast of the Arabian Sea at a stretch of some 50 miles. But for most of the year the wide branching flood beds, into which the Porali river divides after leaving the mountains, carry no water, and the very scanty and irregular rainfall received by the arid valley plain lower down does not allow the great extent of arable ground which is not reached by inundation or artificial irrigation to produce more than the thinnest desert vegetation.

This main valley of the Porali is fringed eastwards by a succession of low and utterly barren hill chains, all offshoots of the Kirthar range. Farther north this divides Las Bela and Kalat territory from the province of Sind and the great Indus valley. These hill chains of the Mor, etc., run south more or less parallel to the direction of the Kirthar until they approach the sea coast. The drainage from the narrow valleys dividing them is carried by the Hab river which debouches there. Torrents descending from the Mor, the nearest of these eastern hill chains, during the monsoon rains, add but a small quota to the irrigation resources of Las Bela, while the narrow valleys farther east allow but little room for any but pastoral occupation.

Along the western edge of the valley of the Porali and its chief tributary on that side, the Kud river, there stretches southwards the Hala range, also utterly barren. On nearing the sea coast it takes a south-westerly direction and near the mouth of the Hingol river it joins on to the Coastal Range of Makran. The Hala range northwards ends in the imposing massif of Dhrum and forms the watershed between the drainage area of the Porali and the Hingol. The latter is an important river collecting most of the drainage from the large Jhalawan hill tract far away in the north-east. This and Makran farther west form part of the present Kalat State and in ancient times must always have been included in Gedrosia.



JHALAWAN
BALUCHISTĀN
SIND
ARABIAN SEA
MAKRAN
KOLWA
LAS BELA
PAB RANGE
MOR RANGE
KIRTHAR RANGE
TALOR RANGE
HARO RANGE
Awāran
Jau
Nal
Nundara
Pao
Kej R.
Hingol
Arra
Suler Dan
Gondrāni
Welpat
Bela
Mangia
Porāli
Lakhra
Kāiara Kot
Uthal
Relu
Liāri
Titiān
Miāni Hor
Kandewāri
Chandragup
Siranda Lake
Sonmiāni
Windar
Nāka Kharāi
Hab R.
Malir
KARACHI
Hinglaj
Khundrach
Aghor
Malān
Ras Malān
Gaz Ab
Maniji
Gurād
Ormāra
Mogal K.
Peri Kalāt
Basol
Kalmat
Sangal K.
Sor Chakuli
Hariani Kaur
Manjwāri
64°
65°
66°
67°
25°
26°
Miles
10 0 10 20 30 40
Sir Aurel Stein's route
Heights in feet

Las Bela may thus be geographically reckoned as terminated westwards by the Hala range; but political circumstances, apparently in the eighteenth century, have caused the authority of the Las Bela chiefs, until quite recently feudatory to Kalat, to be extended westwards over a portion of the narrow strip between the Coastal Range and the sea as far as the inlet of Kalmat.[1] The account left us of Nearchus' voyage along the coast shows that the whole of this long and far from inviting strip of ground right up to the mouth of the Persian Gulf, which the Greeks knew as the land of the barbarous Ikhthyophagoi or "Fish-eaters," was included by them in Gedrosia. In the same way it had continued in later times, too, to be reckoned as part of Makran.

To this rapid synopsis of the chief geographical facts concerning Las Bela a few brief remarks may be added on its present economic conditions and its population ('Las Bela Gazetteer,' pp. 44 *sqq.*). In the first place it deserves to be noted that owing to the very scanty and capricious rainfall cultivation is almost wholly dependent on irrigation. Water for this is supplied chiefly by the summer floods of the Porali. These are distributed over the flat alluvial valley bottom by *bands* or barrages, roughly constructed across the branching beds of the river.

These by the very nature of the ground on the alluvial fan are liable to periodic changes, the farther away their course lies from the head of the valley. This helps to account for only a limited portion of the potentially fertile area between the barren hills on either side of the main valley being capable of permanent cultivation. Hence it is easy to understand that even as late as 1901, when the first census was taken in Las Bela, only about one-half of the population, then reckoned at 56,109 souls, or nine persons per square mile, was engaged in agriculture, this occupation, being combined with the raising of flocks, cattle, and camels.[2] Yet by then long years of British control had introduced a change from the conditions observed in 1840 by Masson who found the people of Las Bela leading an essentially pastoral life ('Las Bela Gazetteer,' p. 110).

Facilities for grazing are afforded along the torrent-beds descending from the hill chains on both sides of the main valley, but particularly near its south-eastern end where the terminal beds of the Porali and smaller streams draining the Mor and Pab ranges run down towards the coast and carry flood water to fairly extensive jungle belts lacking permanent settlement. There is plentiful grazing to be found also in the mangrove swamps lining the shore of the crescent-shaped Hor lagoon which extends along most of the southern end of the great alluvial fan.

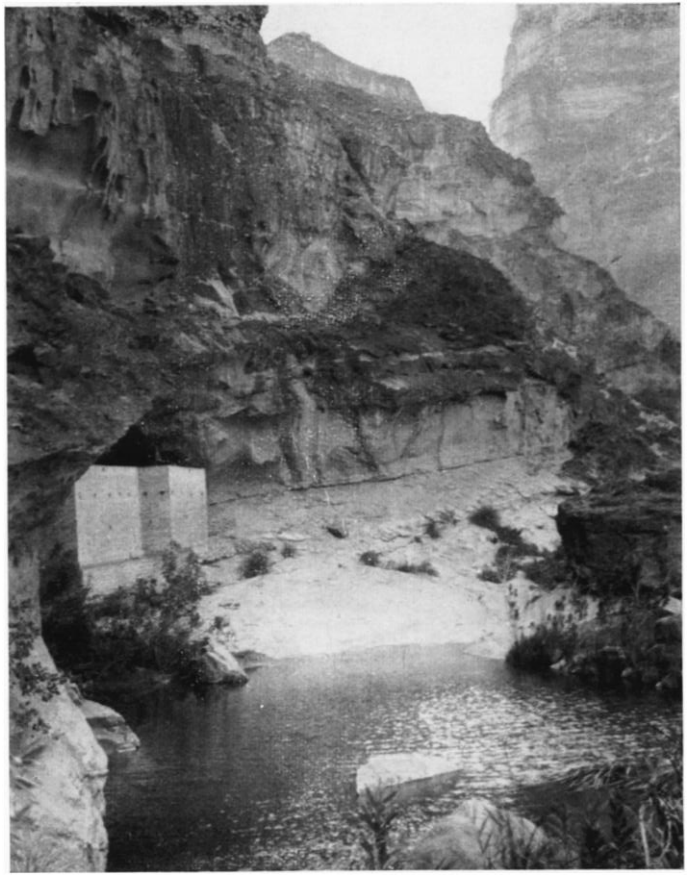
But it is at the head of the latter in the tract of Welpat where the Porali emerges from the hills, and where its flood water can best be caught and utilized for cultivation, that the closest settled occupation of the ground by hamlets and villages is found. There, too, lies the town of Bela, the admini-

[1] See p. 193 of 'Baluchistan District Gazetteer, vol. 8, Las Bela,' a very useful publication, compiled mainly under the direction of Mr. R. Hughes-Buller.

[2] See 'Las Bela Gazetteer,' pp. 45 *sq.* It is however there noted that "owing to the drought and scarcity of food grains and fodder, a large number of the inhabitants had gone away to Sind and were absent when these estimates were prepared, and it is, therefore, probable that the population was underestimated." The Census of 1921 showed a population of 50,696 souls for the Las Bela State.

1. Small fortified island in Hingol river bed at Aghor

2 Old Rumi tombs on way from Hab river to Las Bela



3. Sacred pool below shrine of Mai Nani, Hinglaj

4. Sacred image of Mai Nani, Hinglaj

strative and commercial centre of the State. The fact that Welpat with a population of some 15,600 souls contains more than one-fourth of the total population of the whole State sufficiently illustrates its economic preponderance in modern times. That this importance of the tract due to obvious physical advantages dates back to very early times is proved by the fact that within it are to be found at least four prehistoric sites of some size, the only ones so far traced.

It deserves to be noted that a portion of Welpat enjoys the exceptional advantage of perennial irrigation owing to the presence of springs rising in the bed of the Porali and furnishing subsoil water, such as is known as "black water," *kara-su* in Turkistan and *siah-ab* in parts of Baluchistan, which permits of two annual crops over a limited area. Starting from Bela town there leads through Welpat westwards the principal and most direct line of communication connecting Las Bela with Makran. I shall have farther on occasion to refer specially to this significant topographical fact.

As regards the present population of Las Bela it may suffice to note here that in its very mixed composition it seems curiously to reflect the varied ethnic influences to which this territory is likely to have been subjected throughout historical times. The main stock of the population to which the geographical name of *Lasi* is applied comprises five principal tribes, divided into numerous subsections. The language spoken by them is a dialect of Sindi, locally known as Jadgali. From a variety of indications it may be assumed that they represent the indigenous occupants of the territory, Indian is their ethnic relation like the Jats of Sind, and they were originally Hindu in religion before their conversion to Islam. To these confederacies or "Raj" belonged the successive families known to have ruled Las Bela.

A number of small tribes calling themselves Baluch and speaking Western Baluchi represent immigrants of Iranian stock from Makran. For the most part they have remained nomadic graziers and are found mainly in the hills eastwards. Nomadic, too, are the more numerous Brahuis who made their way into Las Bela from the high valleys of Jhalawan in the north. Their language and physical character prove them to belong to that once widespread Dravidian stock which in prehistoric times may be assumed to have occupied a great portion of the present Kalat State and adjacent portions of the Indus valley. A miscellaneous smaller group includes some tribes known to have been settled originally in Sind, as well as Khoja traders and Hindus. Among this group the fisher folk of the Meds deserve to be specially mentioned; widely spread westwards also along the Makran coast they correspond without doubt to the Ikhthyophagoi described by the Greek accounts as living on the coast beyond the Oreitai, the ways of whom they still largely retain.

Before concluding this rapid review of the physical features of Las Bela and the composite character of its population reference may be made to the trade which the position of the country has favoured in former times and which still affords some subsidiary livelihood to its camel-raising people. Until the rise of Karachi and the advent of railways up the Indus valley the small port of Sonmiani, on the south-eastern extremity of the State, served for a considerable import by sea which found its way by much frequented routes

via Bela into different parts of Southern Baluchistan and into Afghanistan also.

Section 2

I turn now to a succinct account of the tour which took me over certain main portions of the State and enabled me to gather useful impressions of the general character of the ground and its bearing on Alexander's operations as recorded by his historians. The conclusions which my observations on this tour, in conjunction with those made on my previous explorations in British Makran and the adjacent confines of south-eastern Persia, have led me to form as regards the route followed by Alexander's army on its march into and through Gedrosia, will be discussed later on.

On January 19 I proceeded from Bahawalpur for Karachi after having completed a renewed survey of ancient sites along the "lost river," the Sarasvati or Hakra. In the course of this I had been joined by Mr. Krishnadeva, a young Archaeologist Scholar, whom Mr. K. N. Dikshit, Director-General of Archaeology in India, had been good enough to depute to assist me, together with a grant of Rs.1500 to meet my out-of-pocket expenses on the proposed tour in Las Bela. A few days' halt at Karachi, under the hospitable roof of Government House where His Excellency Sir Hugh Dow, Governor of Sind, and Lady Dow had accorded me the kindest welcome, allowed me to attend to practical preparations and to meet Mr. A. H. Hopkinson, Political Agent, Kalat, then on his way back from Las Bela. By him I was also introduced to Jam Mir Ghulam Qadir Khan, Ruler of Las Bela, then on a visit to Karachi. The kindly interest shown and very helpful support given by Mr. Hopkinson greatly facilitated all subsequent arrangements for my tour.

A journey of some 116 miles in the instructive company of Khan Bahadur Nabi Bakhsh, Wazir of Las Bela, brought me on January 23 to the small town of Bela, the capital of the State. The journey done by car on the main road, ordinarily practicable for motor traffic in fair weather, though necessarily rapid, allowed of some useful observations. After 14 miles from Karachi city the road crosses the deep-cut bed of the Hab river, shallow but perennial. It forms the boundary between Sind and Las Bela. It has been long ago rightly identified with the Arabius river of the Greek accounts. Beyond it the road passes over the last low outliers of the Pab range, forming a much-broken plateau. Without permanent habitation, owing to moisture from its vicinity to the sea it affords ample grazing. A group of relief-carved tombs, known as *Rumi, i.e.* of Western type, and some others found elsewhere in this tract attest pastoral occupation in early Muhammadan times (Pl. 2).

After a steep descent through a tortuous gorge the coast was closely approached. Beyond this the road led through extensive belts of open jungle with much tamarisk and other tree growth. Interspersed are small scattered patches of cultivation, all dependent on floods from the Windar stream and torrents draining the hill range to the east. At increasing distance from the sea we then passed beyond its great inlet the Miani Hor to the long winding lake of Siranda which is fed by flood water from the easternmost terminal branch of the Porali river and from torrents draining the Mor hills. I shall

have occasion to refer to this lake later on. After skirting the eastern shore of the lake we left farther away to the west the village of Liari on the Titian branch of the Porali, before we arrived at the first large area of cultivation at the village of Uthal, with a group of hamlets clustered around it.

After leaving Uthal, one of the terminal oases of Las Bela, we crossed a stony waste for more than 30 miles, a typical Piedmont glacis of the Mor hills, intersected by a constant succession of shallow torrent beds, before reaching the southernmost continuous stretch of cultivation, some 8 miles below Bela.

At Bela, the seat of the administration of the State and its ruler, we stayed to collect local information and to make arrangements about transport, etc., for the journey ahead. For all these most useful assistance was received under the orders kindly issued by the ruler who throughout showed a very helpful interest in facilitating my task. In the course of two long excursions it became possible to locate four mounds where abundant surface remains proved prehistoric occupation reaching back to Chalcolithic times. They also served to acquaint me with the chief physical features which at all times must have made the cultivable ground of Welpat, as the northernmost tract of Las Bela is called, the principal area suited for settled occupation. The first of those excursions took me for some 10 miles north of Bela past two fine orchards of the Jam, enjoying perennial irrigation from "black water" of springs, and I could note how changes of the wide flood beds of the Porali river and its affluents, as marked by abandoned embankments, must have affected at different periods the area of settled occupation. Two large ancient sites were traced on conspicuous mounds to the north-east of Bela where slightly rising ground had made prolonged occupation less subject to the vagaries of the river beds.

This seems to be the case also at the town of Bela which occupies a high mound on the western bank of the broad flood bed known as Narag. No ancient remains could be traced on the surface of this mound, probably owing to the abundant refuse which finds its way from the crowded dwellings of the inhabitants to its slopes. When passing through narrow lanes on visits to the residence of the Jam, built on the highest point of the town, more than 40 feet above the foot of the mound, it was instructive to observe that apart from a few more substantial structures built with mud bricks, most of the dwellings, including the very numerous shops of the extensive Bazaar, show only timber-and-wattle walls plastered with mud. These are necessarily subject to much damage in case of exceptional rain. Such walls after abandonment of a site would leave little of recognizable remains behind. Yet where occupation of the same site had been continuous for long centuries the accumulation of debris after repeated periods of decay would be bound to prove heavy.

I noted at the time the disproportionate number of shops at Bela, some hundred, against a population of a little over four thousand. This is due largely to the amount of trade which passes through the town both to and from Makran and the adjacent parts of Jhalawan. The fact has its significance with regard to the question as to the route likely to have been followed on Alexander's march into Gedrosia.

It was this question which mainly determined the direction of the subse-

quent moves on my tour. No duly critical examination of this question was likely to have been possible for qualified historical students before this borderland of India and Iran, from which, in Lord Curzon's words, "obscurity had rarely lifted" ('Persia,' ii, 254), became known in its topographical and other essential aspects through reliable modern surveys. Yet it appears to have been generally believed ever since the days of D'Anville that Alexander's route into Gedrosia led mainly along or near the Arabian Sea coast.[1] In a modified form this view had been taken also by Colonel Sir Thomas Holdich, R.E., under whose direction the first detailed mapping of Southern Baluchistan by the Survey of India had been carried out towards the close of the last century. There were data contained in the classical records which it seemed to me to be difficult to reconcile with this view. Hence obviously it was important for a proper examination of the question to make in the first place direct personal acquaintance with the ground over which the approach to that suggested route line was assumed to have led.

In order to gain this ground we started from Bela on January 28 south towards the western edge of the alluvial flat descending towards the coast, with six camels to carry the baggage and six more to mount our party including guides. On the first march, a short one, the continuous stretch of cultivation below Bela town was left behind after some miles. Then passing across a waste with thin tamarisk growth and scrub, where decayed irrigation embankments marked abandoned fields in places, the bed of the Porali holding a shallow flow of "black water" was struck at the small hamlet of Mangia. Next day a march of more than 25 miles brought us to the site of Khaira Kot of reputed antiquity. The track lay at an increasing distance to the west of the present main course of the Porali and almost wholly across waste ground. Only at first where the route led near to the dry torrent beds descending from the low hill chain to the west, did we pass the embankments marking abandoned fields and clumps of old tamarisks. From the few scattered huts near them the cultivators were said to have moved away in recent times to ground still capable of being inundated from the Porali.

The site of Khaira Kot is marked by a patch of some 300 yards in diameter of slightly rising ground not far from a shallow depression marking an old bed of the river and holding a small sheet of fresh water left from the last summer flood. Abundant pottery debris covers the surface of the site and by its type proves occupation during mediaeval times. Some of the enamelled or otherwise decorated ceramic ware showed distinct resemblance to the pottery found by me at numerous sites of the early Muhammadan period in Persian Makran and up the coast of the Persian Gulf ('Archaeological reconnaissances,' pp. 82 *sq.*, 90 *sqq.*). Numerous fragments of Chinese stone ware, etc., suggested maritime import of a trade for which the site near the old delta of the Porali may have served as a convenient centre. In conformity with the above dating were some decayed *Rumi* tombs and fragments of copper coins of the Islamic period picked up on the surface. There was nothing whatever

[1] I base this view on the remarks made by McCrindle, 'Ancient India: its invasion by Alexander the Great,' p. 169, note I, reference to other writers not being at present accessible to me. See also Colonel Sir T. Holdich, "A retreat from India," *J. United Service Instit. India*, 1894, pp. 112 *sqq.*

to support the location at Khaira Kot of the town founded by Alexander at the chief village of the Oreitai, as conjectured by Colonel Holdich (see p. 216).

At Khaira Kot we had approached the foot of the low and utterly barren Haro range along which the usual tract leads to the mouth of the Hingol river and thence to the sea coast at Ormara. But while letting the baggage proceed by it to the graziers' station with wells at Nakhatri, I struck south across the bare alluvial flat under the guidance of Ibrahim, an experienced old landowner who had joined us from the hamlet of Sheh Lakhra on the Porali to the east. Passing on this utterly featureless ground along a succession of shallow beds once fed by the Porali I noted at a number of places patches, covered with pottery debris, marking where small hamlets had once stood. After passing the traces of the now abandoned Indo-European Telegraph line our guide brought us to the site known as Relu where some *Rumi* tombs and ceramic debris marked mediaeval occupation as at Khaira Kot. It was interesting to note that flood water from a wandering terminal branch of the Porali had recently allowed some cultivation to be resumed in the vicinity. Finally turning south-west we gained our halting place at the mouth of the Nakhatri nullah.

From here onwards our journey of four days to the Hingol lay all the way by a track skirting the foot of the much-broken hill chain and within easy reach of the coast. At Khandewari, the first stage, the route passes the westernmost end of the long crescent-shaped inlet of the sea known as the Miani Hor, and a police post guarding a small fishing station. From here onwards it was interesting to note that the ground where it is not crossed by low sandstone ridges, the last offshoots of the hill range, is cut up into small trenches and terraces running regularly from approximately south-west to north-east, all cut by wind erosion just like *Yardangs* of the Lop Nor basin. Low sand hillocks crowned by tamarisk growth rising above level sandy ground added to this resemblance, though here the desolate look of the landscape was relieved by the picturesque forms of the ridges and cones rising on the crest of the much-worn hill chain.

Where the Phor river, dry at the time, debouches towards the sea between the parallel Hala and Haro hill ranges, there are to be found some fields cultivated by graziers, amidst plentiful tamarisks and other tree growth. But on the stretch of the route, close on 40 miles, covered between a well in the Phor river bed and the bank of the Hingol, water is to be found permanently only in a well at the deep-cut torrent bed of Sangal, and at the temporary grazing station at Munjawani to the east of it.

After passing through low rocky ridges we struck in the evening of February 3 the left bank of the wide bed of the Hingol river just above the small cultivated plateau of Aghor; its remains were visited some days later. Then crossing and recrossing the winding river bed where it makes a big loop round a conspicuous headland, we halted on a low level ridge forming its western extremity. From a large grazing area to the west of the river bend this usual halting place is known as Kunderach. In the morning there was a very impressive panoramic view from it of the fantastically bold and varied hill shapes crowning all the crests and spurs of the range through which the Hingol river has cut its way. The range is composed of white sandstone with

intervening thinner strata of calcareous sandstone. Its heights have been denuded into an endless succession of bold forms, resembling steeples, storeyed towers, turreted walls, and bastions. And it offered fascinating vistas wherever our way lay farther up the Hingol valley or across the ranges which join it.

Beyond the nearest of those spurs to the north-west there lay the side valley of the Hingol known as Hinglaj and holding the much-frequented Hindu pilgrimage place of the same name. It is the westernmost of Hindu *Tirthas* still "in being," and there was a special interest in visiting it as the name of the goddess, Mai Nani, to which it is sacred, indicates considerable antiquity of local worship. Crossing to the right bank of the Hingol and then after a short distance turning into the narrow side valley of Hinglaj to the west, one reached after some 4 miles a modern Sarai built by well-to-do Hindus of Karachi for the accommodation of pilgrims. The valley all the way up holds abundant tree growth and other vegetation by the side of the small stream which descends over its rocky bottom (Pl. 3). It thus presents a very pleasing contrast to the general aridity of the surrounding hill region. The attraction it thus offers also for animal life accounts for its having been made a shooting preserve by the last ruler of Las Bela.

Above the Sarai a steep path winding among large smooth-worn boulders ascends the left bank of the cascading rivulet for about a mile to the sacred spot. Under a high rock wall of sandstone on the right bank, slightly overhanging, there stands a little square stone structure of uncertain age. From it a narrow passage gives access to an oblong walled enclosure which forms the open air sanctuary. On a low platform in the middle there is raised a curious stone block, narrow in the middle and of globular shape at both ends, which by pious Hindu eyes is taken for a natural representation of the goddess Nani, apparently worshipped as a manifestation of Durga (Pl. 4). It obviously imparts to this sacred spot the character of a *svayam-bhu* or "self-created" Tirtha. Behind the head of the supposed image a low rectangular passage leads through what may have been partly a natural rift, but now is lined with rough masonry and roofed with timber. Pilgrims entering by the opening on the left and crawling on their knees through the passage at the back are thus able to perform the ritual *pradakshina*.

Muhammadan pilgrims who also visit Hinglaj take the stone block, which a carved railing bearing various sacred emblems surrounds, as marking the grave of a saintly wife of 'Ali, miraculously translated to this spot. For Muslims an aged Baluch who cultivates the fields at Aghor and who had there joined us, acts as *mujawir* or guardian of the sacred spot. The large batches of Hindu pilgrims are guided to Hinglaj all the way from Karachi by a duly recognized Purohita known as *Agowa*, who arranges for their transport and supplies. He collects from them the fees which are levied by the Las Bela administration and form a regular source of revenue to the State. Hindu pilgrims from different parts gather at Karachi at various times of the hot season and perform the journey by regular prescribed stages, including worship at a mud volcano called Chandragup near the coast between the Phor river and Sangal. It may be safely assumed that the rites, etc., connected with the pilgrimage are regulated as usual at Tirthas all over India

by a Sanskrit Mahatmya text; but I regret not to have been able to secure this or a meeting with the *Agowa* at Karachi.[1]

A confused mass of inscriptions, in a variety of Indian scripts and all of comparatively modern look, are found scratched or painted on a low portion of the rock wall below the shrine. They record the names of pilgrims but as far as we could see bear no dates, nor did we succeed in tracing any definite archaeological indications of antiquity. Yet there can be no reasonable doubts about local worship at the spot going back to a very early period. This is proved by the name Mai Nani, "mother Nani." As recognized long ago it unmistakably connects this local worship with the Chaldaean goddess Nana, widely venerated in Mesopotamia and beyond in the Middle East. The requisite proof of her worship in the borderlands between India and Iran is supplied by the appearance of her figure, and her name written in Greek characters as Nanaia, first on coins of an uncertain king of the Parthian period, and subsequently in the form of Nana or Nanaia on very numerous coins of the Kushan emperor Kanishka and his successors.[2]

Returning from Hinglaj on February 6 by a different route along the left bank of the Hingol I took occasion to examine the small site of Aghor near where the Hingol finally passes the outermost hills towards the sea coast. There a low plateau affords very limited ground for cultivation by means of an inundation channel taking off from the left bank of the river. On a small rocky ridge, rising above this flat ground by the steeply eroded bank, there is to be found plentiful broken pottery including enamelled fragments and decorated pieces resembling Chinese stoneware. These ceramic remains together with a number of much decayed *Rumi* tombs occupying the narrow top of another ridge eastwards, unmistakably indicate occupation of the site in mediaeval times.

This is confirmed also by similar ceramic debris lying on a third rocky eminence about 80 yards long which about 200 yards off the present bank rises island-like to some 40 feet above the wide river bed (Pl. 1). The branch of this separating the rocky knoll from the left bank was said to have been formed by the river within living memory. Judging from decayed walls of rough blocks of stone set in mortar on the slopes and the stone-lined mouth of a well on the top, the knoll appears to have served for defence. A Muhammadan copper coin picked up on it along with fragments of others left no doubt about the time of its occupation. The position of Aghor makes it appear likely that given very limited scope for cultivation afforded by the site, its occupation in mediaeval times served mainly such modest maritime trade as still proceeds from the coast up the Hingol to Jhau and adjacent parts of Makran and Jhalawan.

The impressions gained on the dreary marches to the Hingol of the ground between the foot of the hill range and the sea, with its very scant water and almost total want of resources, had led me increasingly to doubt whether this

[1] For some account of the practices observed at the pilgrimage and the graduated fees levied on it, see 'Las Bela Gazetteer,' pp. 35 *sqq*. There a reference will be found also to the account left by Captain Hart, the first European visitor to Hinglaj, 1840.

[2] See *e.g.* P. Gardner, 'Greek and Scythic Kings of India and Bactria,' pp. 119, 129, 1131 *sqq*.

route, passing towards the equally barren coast of the Ikhthyophagoi farther west, could ever have served for any large troop movement or caravan traffic between Las Bela and Makran. Yet it was just this route which has long been assumed to have served for the initial portion of Alexander's move from the territory of the Oreitai, *i.e.* Las Bela, into Gedrosia through Makran.[1] But there remained the wish to renew my acquaintance with the coast of the Fish-eaters touched by me before about Gwadar far away to the west, and subsequently to examine the route by which access to the eastern end of Makran could be gained up the valley of the Hingol.

With a view to this extension of my tour I turned first from the debouchement of the Hingol river towards the small port of Ormara, still included with the neighbouring strip of coast within the territorial limits of Las Bela. There was a special quasi-antiquarian inducement for me to pass through the rugged Malan range which, trending south-west from the last great bend of the Hingol near Hinglaj, runs down the coast and with its last outliers separates the great bay east of Ormara from the conspicuous headland of Ras Malan. This cape is duly recorded in the account of Nearchus' voyage with the name of *Malana*, marking the extreme western limit of the land of the Oreitai.[2]

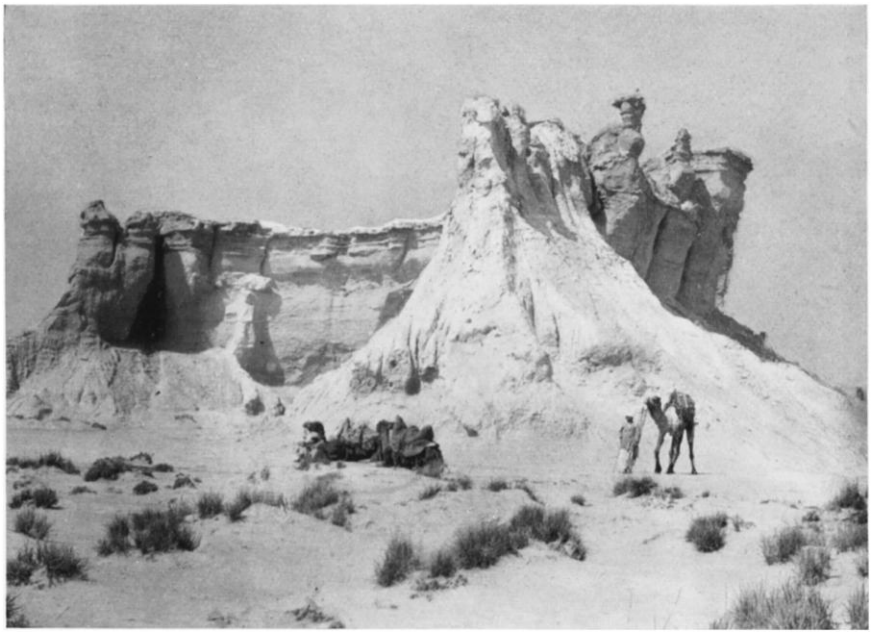
The name Malan is still borne by the small valley and grazing ground through which passes the more direct of the two routes from the Hingol to Ormara. The other route leads up a long bend of the Hingol river beyond Hinglaj, then turns into the side valley known as Hariani Kaur and from the head of this descends along the Maneji stream towards the eastern bay of Ormara. Though reported to me as less difficult it implies a considerable detour. I preferred to follow the route past Malan, be it only for the classical associations of its name and for the helpful guidance which the Indo-European Telegraph line, even in its now derelict condition, affords on ground much broken and often very deceptive.

After leaving Aghor and crossing to the right bank of the Hingol we reached on February 6 the open plateau of Kunderach, providing grazing for some nomadic Baluchi families and a pool of rain water in a dammed-up tank. From where our camp stood on a bare sandstone spur there was a striking panoramic view of boldly carved picturesque ridges and summits of white sandstone hills all around. On most of them a step-like series of intervening dark calcarous strata could be counted, all horizontally laid and marking a succession of geological periods when all these hill ranges had lain submerged in the Arabian Sea.

The arid desolation of the narrow ravines and steeply eroded valleys through which the descent south-west to Malan led, was relieved by distant glimpses of the sea and by striking hill formations suggesting bastioned castles, tall spires, etc. In the open basin of Malan furrowed by dry beds of torrents the eye was repeatedly deceived by isolated *mesas* recalling ruined

[1] See Holdich, "A retreat from India," p. 118; McCrindle, 'Invasion of India,' p. 168, for the conjectured derivation of the name of the Oreitai from *Aghor*, as a designation of the Hingol river; Cunningham, 'Ancient geography of India,' p. 353 (second edition).

[2] See Arrian, 'Indica,' 26 (ed. Robson, Loeb Library; also ed. Chantrie, Association Bude).



5. Peri Kalat near Ormara

6. Approach to Malan pass from east

7. Eroded sandstone hill, Hingol valley

8. Sandstone hill near Parkini river

structures and by column-like "witnesses." Small flocks of sheep and goats, grazing on scanty scrub near the rain pool where we halted, belonged to fisher folk living near the sea.

The ascent next day to the pass, about 1200 feet above sea-level, characteristically called Buzelak, "the goats' pass," led for a couple of miles in a winding cliff-lined ravine (Pl. 6) to the foot of a precipitous rock wall. Up this the narrow track climbs steeply along a narrow rift of the sandstone. Here a flight of steps has been cut into the slippery smooth surface of the rock for close on half a mile. It was this work of the late Indo-European Telegraph Department which has made this portion of the track just practicable for laden camels, though only with difficulty. That this pass could never have served, even when thus improved, for the movement of any large body of men encumbered with baggage, seemed certain.

From the pass flanked by high cliffs a descent less steep led down for some 8 miles through narrow gullies, encumbered with limestone debris, to a slightly wider valley holding some vegetation at its bottom and known as Gaz Ab. With a few rain pools at curves of the rocky slopes it serves as a usual halting place for whatever scanty traffic ever passes along this route.

On the following day a long march carried us down first to where the somewhat widening valley turns off to the south and where its occasional drainage makes its way to the sea. The track continuing to the south-west then took us across a low watershed called Sarbat where clumps of trees along a small stretch of gently sloping ground marked what appeared to be a patch of abandoned cultivation. Owing to the want of adequate guidance at the time it was only later after leaving Ormara for the Hingol that I learned of the side valley above Sarbat holding the remains of a *Gabar-band*. Thus are called locally those ancient ruined barrages which at numerous places of Makran and Jhalawan indicate permanent occupation during prehistoric times.[1] Nowhere else on my tour through Las Bela did I learn of the existence of any of these interesting indications of early irrigation. They have a certain bearing on the question of climatic change or desiccation affecting parts of Gedrosia since a prehistoric period.

Descending very steeply from Sarbat the track took us into a perfect maze of narrow, deeply eroded ravines where but for the guidance afforded by the broken poles and trailing wires of the *quondam* Indo-European Telegraph line it would have been easy often to lose the direction. So it was with relief that at last after ascending steeply to a narrow knife-like arête of sandstone under high cliffs a distant view was caught of the sea and of a glacis sloping down towards it. But for stair-like steps cut into the smooth-worn sandstone the descent into a gorge on the other side would have been impossible even for unladen camels.

On the wide scrub-covered glacis beyond, furrowed by dry torrent beds, no halt could be made until late in the evening when a small grove of palms by the side of a dammed-up pool of rain water was reached. Next day a long weary march over a scrubby plain took us past another small clump of trees by the side of a muddy tank to the shallow terminal bed of the Maneji stream.

[1] See Stein, 'An archaeological tour in Gedrosia,' pp. 7, 24 *sq.*, 45, and *passim* (as noted in Index).

Thence marching along the dune-lined foreshore of the great curving bay we gained after nightfall the little port of Ormara.

The village of Ormara is situated on the eastern shore of a flat narrow isthmus terminated on the south by a bold headland rising to some 1500 feet above the sea. The majority of the population reckoned at about two thousand five hundred souls consists of Meds, fishing folk carrying on the traditional occupation of their ancestors. They have developed, probably under Arab influence since early mediaeval times, into capable seafaring people and are now accustomed to sail their boats for trade with cured fish as far as Colombo and Zanzibar.

But their ways of life like the mat huts which serve for their dwellings, and the methods used in their main occupation of catching and curing fish, can have changed little since ancient times. But it was interesting to note that to this livelihood is added for Ormara the import, from the side of Makran and Jhalawan, of grain stuffs needed by the rest of the local population, and the export of dates and the widely used matting of leaves of the dwarf palm, brought down from the nearest valleys to the north.

Considering the very scanty economic resources and the thinness of the population in the whole of this coastal tract, estimated in 1921 at about five thousand six hundred souls along a stretch of coast not less than some 120 miles in length, I could not feel surprise that my stay of three days at Ormara needed to give rest to men and beasts, did not reveal remains of antiquity. Ormara has in all probability rightly been identified with Bagisara, which Nearchus mentions as a place having a good anchorage.[1] By sailing round the picturesque cliff-lined shore of the headland I was able to visit, near its south-western extremity, the glen of Mogal where ground of former cultivation was reported. After landing in a small cove, quite romantic in appearance, and ascending a narrow ravine we were shown the spot where under an overhanging rock face fresh water can always be found by digging down a few feet into the sandy soil. Then after ascending for close on a mile along limestone ledges we arrived where the head of the valley widens into a small alluvial plain. Decayed embankments meant to hold up rain water on terraced fields could be clearly traced here, but no distinct signs of ancient cultivation.[2]

Before leaving Ormara I paid on February 14 a visit to another locality reported as old and known as Peri Kalat, "the castle of fairies." On starting for it from the former Telegraph station which now serves as Rest House, I took my way through the twisting Bazaar lane of Ormara, infested like the

[1] See Arrian, 'Indica,' 26, 3. The village of Pasira mentioned in the same passage as 60 stades distant from Bagisara, may be located at the present Had, about 7 miles north of Ormara, which the 'Gazetteer,' p. 193, names as the only permanently occupied of the seven main villages of the Ormara Niabat.

[2] It is likely that the mouth of the Mogal valley is meant where Arrian, 'Indica,' 26, 4, tells us that the fleet on leaving Bagisara "weighed anchor earlier than usual and sailed round a promontory which ran far seaward, and was high and precipitous. Then they dug wells and obtained only a little water, and that poor; and that day they rode at anchor, because there was heavy surf on the beach." The description of the promontory here found agrees closely with the shape of the Ormara headland. To circumnavigate it from Ormara village to Mogal means a sailing distance of at least 15–16 miles.

rest of the village with swarms of flies and insects and the all-pervading smell of fish-curing. Beyond a large rain pool, near the outlying mat huts of fishing folk, the route over the narrow scrub-covered isthmus lay to the north-west past a long line of low mesas, all running from south-west to north-east and showing the erosive effect of the prevailing winds.

After some 7 miles there was reached the conspicuous isolated mesa which from its striking resemblance to a turreted castle bears the name of Peri Kalat (Pl. 5). It rises with extremely steep, in most places almost vertical, walls of sandstone to a fairly level top at a height of about 80 feet. Judging from the total absence of ceramic debris this naturally strong position appears never to have served for permanent occupation. A low limestone ridge however not far from its northern foot bears numerous graves of an old burial ground locally ascribed to the Zikri sect among the Ormara population.

It had been my intention from the start after visiting Ormara to make my way up the Hingol in order to reach Jhau, a cultivated portion of the Hingol valley which lies on the nearest route from Las Bela to Makran. But instead of returning for this purpose first to the mouth of the Hingol, thence ascending in the much-winding valley with all its bends, it appeared to me on a study of the Survey of India map (sheets Nos. 35 C and 35 G) advisable to move from Ormara north-eastwards, to cross the Taloi range into the valley of the Parkini, a considerable western tributary of the Hingol, and to follow this down to near its junction with the Hingol, some 50 miles above Aghor. Thus a great detour of at least six marches could be avoided. There was a special reason for me to decide on this route to the Hingol as it would give me an opportunity of gaining personal acquaintance with the Parkini valley through which, according to a theory set forth by Sir Thomas Holdich, Alexander's route into Gedrosia had lain.[1] To this theory I shall have occasion to recur further on when discussing the classical records regarding the route.

It was hence reassuring to me to learn after my arrival at Ormara that the proposed route was known to local informants as regularly used by small caravans bringing supplies of food, grain, and dates from Jhau. Still more welcome it was that with the help of the obliging Naib of Ormara I was able to secure a reliable and very intelligent guide to Jhau in the person of Ali Murad, a former guard on the Indo-European Telegraph line and familiar with the ground as a hunter.

Starting from Ormara on February 15 we moved first along the shore of the eastern bay of Ormara to the terminal bed of the Maneji river, then over an utterly bare peneplain to the north-east, and after some 23 miles' march reached a rain pool in a deep-cut dry torrent bed. Next day another long march continued in the same direction took us first past two very small patches of ground to which embankments secure flood water for cultivation. It is carried on by graziers temporarily occupying this ground known as Gorad. Then the track, difficult to follow without a guide, passed across and

[1] Sir Thomas Holdich, "A retreat from India," pp. 112 *sqq*. The volume containing this proved difficult to secure in any public library in India within my reach. Apart from the abstract to be found in the 'Las Bela Gazetteer,' p. 19, it became accessible to me only later through a typed copy which Major Drewett, Secretary of the U.S. Institution, India, had the kindness to get made for me from the single copy of the volume available in its Library.

along a desolate arid waste formed by a succession of low outer hills, chiefly composed of much decayed limestone, until water was found in a rain pool left in a bed below a high ridge descending from the Taloi range.

From this halting place which from a sulphur spring passed higher up is called Shorkul Chakuli, the route, difficult but just practicable for laden camels, led through narrow winding gorges northward across the Taloi range. This divides here the Parkini river valley from the valleys draining to the sea. After several minor ascents and descents in rubble-filled ravines the watershed was reached at an elevation of about 1200 feet. Then a somewhat easier descent in a stony gorge led down into the Parkini valley. To my pleasant surprise I found a shallow but continuous stream flowing down its bottom, or else, after stretches where rubble covers the surface, reappearing again and again in a succession of large pools holding sheets of limpid water. With patches of tree growth here and there by the side of the stream the Parkini valley provided a very pleasant contrast to the arid wilderness of the ranges which bound it on both sides (Pl. 8). As we descended along the river with its many long bends bold peaks showed on the crest of the southern range.

We halted near a large pool at a spot which Ali Murad our guide knew by the name of Nanani Benth. On February 18 our route continued down the valley keeping by the Parkini river except where its great bends were avoided by cutting across low stony plateaus. At a particularly long loop of the river the route left its course altogether and ascended steeply by a rift to a broad saddle. This at some 200 feet above the river gave access to a small plateau from which through a maze of eroded terraces the Parkini bed was regained. Finally after following the Parkini down, there was reached the point, known to our guide as Langar Dap. There after passing a number of other narrow side nullahs to the north, he was able to recognize the mouth of the one through which we could make our way to the Hingol by a short cut, instead of having to descend its much-winding tributary down to the junction a long distance ahead.

Before leaving the Parkini valley I may note that though it offers throughout some grazing for camels and flocks as well as plentiful water for men and animals to drink, even at the late season of our passage, no graziers' camps were met in it nor any evidence of its having ever seen permanent occupation. These observations deserve to be kept in view when discussing Alexander's route from the territory of the Oreitai, *i.e.* Las Bela, into Gedrosia. In the light of the Greek notices they cannot be reconciled with the theory which assumes Alexander's march to have led from the lower course of the Hingol up the Parkini valley (see p. 219).

The ascent to the Langar Lak which saved the great detour down the Parkini valley, led through wildly fissured ravines to a narrow saddle, marking the watershed between the Parkini and the Soler stream, another western affluent of the Hingol. Though its elevation was only about 900 feet, yet the difficulty of the track (Pl. 9) served to give some idea of the obstacles which, farther west, the wide belt of successive narrow ranges running north of and parallel to the Coastal Range must present to any direct communication between the coast and the open main tracts of Makran along the line of the

Kolwa and Kech valleys. We shall see that this consideration also has its bearing on the question of Alexander's route.

It is different with the route which the Hingol river by cutting its way right across this string of ranges has opened for traffic between the coast and the eastern extremity of Makran. We struck this route at Soler Dap, the junction of the Soler stream and the Hingol, and thence followed it all the way up to Jhau. For the first two marches on February 20–21, the valley of the Hingol winding with many bends in a general N.N.E. direction offered easy progress (Pl. 7). The river flowing rapidly in a shallow stony bed, mostly 20–30 yards broad, was crossed again and again between low terraces. On one of these before reaching our first halting place known as Bundi we came upon recently cultivated fields.

Evidence of regular occupation in the shape of graziers' shelters and small patches of cultivation increased as we proceeded next day up to the plateau-like ground of Fau. There a stream coming from Awaran meets the main feeder of the Hingol. This is known farther up as the river of Nal from the fertile tract of Jhalawan where it rises. The track leading to the Awaran stream was reported as impracticable for laden traffic. But Kolwa, the easternmost of the open cultivated valleys of British Makran, is reached by an easy route leading westwards from Fau.

Beyond Fau our camp stood at Mulla Benth, a pleasantly wooded spot with some fields situated under frowning cliffs above the Nal river. From there a long and rather trying march was still to be made before the open valley plain of Jhau, my immediate goal, could be reached. For some 10 miles the track lay across fairly open ground above the river bed with a few fields cultivated by people from Jhau and offering impressive vistas towards bold peaks of the Dhrum massif eastwards. But a few miles farther up the river was seen to pass into very narrow cliff-lined gorges declared to be impassable even on foot. So the track from Garbe-rangan, "the defile of Garbe," to avoid these gorges turned up very steeply to a succession of high and much-broken ridges. For close on 7 miles three distinct *Laks* or passes had to be crossed. The ascent in each case lay through a maze of narrow twisting ravines so narrow in places as to leave barely room for the passage of the laden camels. Apart from a small rain pool, found already occupied by a party from Jhau, neither water nor grazing was passed until the deep-cut bed of the Nal river was again approached by nightfall.

Next day a long but far easier march carried us to the lower village of Jhau. A couple of miles more over low hills overlooking the left bank of the Nal river sufficed to bring us to the fields of Gausho Kalat, a small outlying hamlet at the entrance of a steadily widening valley plain. Proceeding over this open scrub-covered ground there were found on two low rocky ridges rising near the bank of the river abundant remains in the shape of potsherds and decayed walls marking prolonged occupation, probably in early historical times. Close to both these sites, known as Bausho Kalat and Gurguro Damb, there were found patches of irrigated land though no present habitations.

Then beyond the second of these sites we entered a broad jungle belt with luxuriant tree growth, abundantly watered from flood beds of the river. From its upper end more or less continuous cultivation with scattered hamlets

was found to extend for 6 miles to where we halted at Shahr Kalat, the lowest of the main villages of Jhau. This tract of Jhalawan with which I had before become acquainted on my Makran tour of 1928–29, comprises a long stretch of fertile alluvial ground along the valley of the Nal river, here nowhere less than about 3 miles wide at its bottom.

Irrigation from rain floods and from the perennial flow of "black water" which a portion of the Nal river holds owing to the presence of springs accounts for only a small portion of the cultivation carried on at present in the Jhau tract. Most of this cultivation depends on the scanty and irregular rainfall, and this explains why in spite of the great extent of potentially arable land, the last census (1921) for which figures are accessible to me showed for Jhau a population of only about six thousand one hundred souls. Yet the existence in ancient times of much greater economic resources is strikingly proved by the considerable number and large size of the ancient mounds which I had been able to survey here on my previous visit. The evidence then collected in the shape of their ceramic and other remains had conclusively proved prolonged occupation of the Jhau tract in Chalcolithic times and by a population which must greatly have exceeded the present ('Archaeological tour in Gedrosia,' pp. 133 *sqq.*).

The renewed visits I was now able to pay to these mounds, in the course of the next three days, mainly from the upper portion of the tract known as Lanjar, greatly helped to confirm this impression. With this fully agreed also what the survey made in 1929, of a series of other ancient sites in the Nundara and Awaran valleys closely adjoining the Jhau tract on the north, had shown as to the economic resources which this ground on the confines of Makran had presented also within historical times. All this led me now to turn with increased interest to the direct route connecting Jhau with Las Bela, its immediate neighbour to the south.

All local information collected during my renewed stay in Jhau pointed clearly to the importance with which unchanging geographical facts must at all times have invested that route as the most convenient line of communication from Sind and Las Bela to Makran for trade as well as for all other movements. It was thus of special interest for me to learn that this route was in regular use for imports into Makran and adjacent parts of the Kalat State of goods from the port of Karachi and Sind, and equally also for the export to Las Bela of agricultural products. Among such figure largely the excellent dates plentifully grown in Panjgur and elsewhere in Makran and also such grain stuffs as the surplus of spring crops in Jhau and Kolwa, when favoured by the winter rainfall of these parts, allows to be brought down to Las Bela at a season while the crops of the latter dependent on the monsoon rains are not yet available. It is in this respect, as may be noted in passing, that the difference in climatic conditions between Las Bela and the hill tracts in the interior, to which the monsoon current does not penetrate owing to the intervening ranges, makes itself markedly felt.

It was evident that the conditions just indicated, especially as regards the presence of local supplies at Jhau and the regular intercourse thence maintained with Las Bela, deserved full consideration in connection with the question as to the route likely to have been followed by Alexander for his

move into Makran. But there still remained personal acquaintance to be gained with the character of this route, and in particular in respect of its practicability for a large body of troops and their impedimenta.

Consideration of the excavation work planned at Las Bela and also for the approaching heat to be expected there made it advisable not to delay my departure for Las Bela too long. So our journey towards Las Bela was started on February 26 from where the caravan route from Awaran debouches into the central portion of Jhau. The journey to Bela is usually reckoned at three marches. But the need of examining on the way the mound of Sistegan Damb near the main village of Lanjar which before had escaped me, caused our journey to be done in four stages. That mound in question proved by its surface finds to mark a site occupied down to late prehistoric or possibly historical times.

Proceeding thence to the well-marked caravan track towards Las Bela we passed after a couple of miles within sight of the great mound of Siah Damb, "the black mound," the largest of all Jhau sites. It occupies a low plateau above a bed of the Nal river near where springs rising in it provide a perennial flow of "black water" for some distance. From here onwards this and the next two marches led in an almost straight line to the south-east across a bare stony upland furrowed by a succession of flood-beds all draining south into the Hingol. The wide open peneplain afforded easy progress for some 22 miles, the fairly flat stony surface being broken only in a few places by much decayed narrow ridges of sandstone which wheeled traffic might cross without difficulty.

Large rain pools found in the torrent beds of Lanadere and Washapi afforded convenient halting places at the end of the first two stages. Scanty scrub to be found in the dry beds provides some grazing for camels and other transport animals. Again and again on moving along this route to Las Bela there were met parties, large or small, of Makrani people who had made their annual winter migration down to Karachi and Sind in search of work. Now, on the approach of the hot weather, they were making their way back to their homes with their wives, children, and scanty belongings mounted on donkeys and other animals in which they had invested portions of their savings.

From the Washapi bed a third march took us over a small pass at an elevation of some 1400 feet past bold limestone formations to a wide flat plateau traversed by the Mar Kaur, a considerable drainage bed; finally it led into a basin visited by graziers from the side of Las Bela. There small water-holes in the ravine of Wadana permitted a halt. All the way the increasing heat on this bare upland had made itself tryingly felt.

On March 1 a last and interesting march of some 16 miles carried us first to the eastern edge of these barren uplands and then down through picturesque gorges to the alluvial flat of Las Bela. After we had passed over open ground to a large pool known as Pir Kumbh and marked by a saint's tomb,[1] as usually found on much-frequented passes of these parts, a short and gentle descent brought us to the point where a customs post, collecting transit dues on behalf of the Kalat State, marks the border of Jhalawan towards Las Bela.

[1] For a legend connecting this tomb with the story of Farhad and Shirin, see 'Las Bela Gazetteer,' pp. 43 *sq.*

Immediately beyond there commences the descent eastwards along a spur of soft sandstone (Pl. 11). The traffic of ages has cut into this a serpentine track down to the bottom of a narrow ravine some 300 feet lower. The track, about 2 yards wide, though steep, is perfectly safe for laden camels. Owing to the absence of any hard rock it would not need much labour to make it practicable for horse-drawn or man-handled carts.

Once the bottom of the ravine is gained, progress lies all the way down at an easy gradient along the steadily widening bed of a nullah (Pl. 12). Though plenty of rubble fills the bed and the track twists in places round heaps of large blocks of rock, rolled down from high cliffs on either side, the track offers no serious obstacles to laden traffic at any time except when heavy monsoon rain brings down a spate. The nullah descends in a winding course of some 7 miles to its mouth, an elevation of about 400 feet above sea-level. It presents no greater difficulties for a rough cart or motor track being made than those met and overcome on many routes through the hills of the Indian North-West Frontier, the Khyber included.

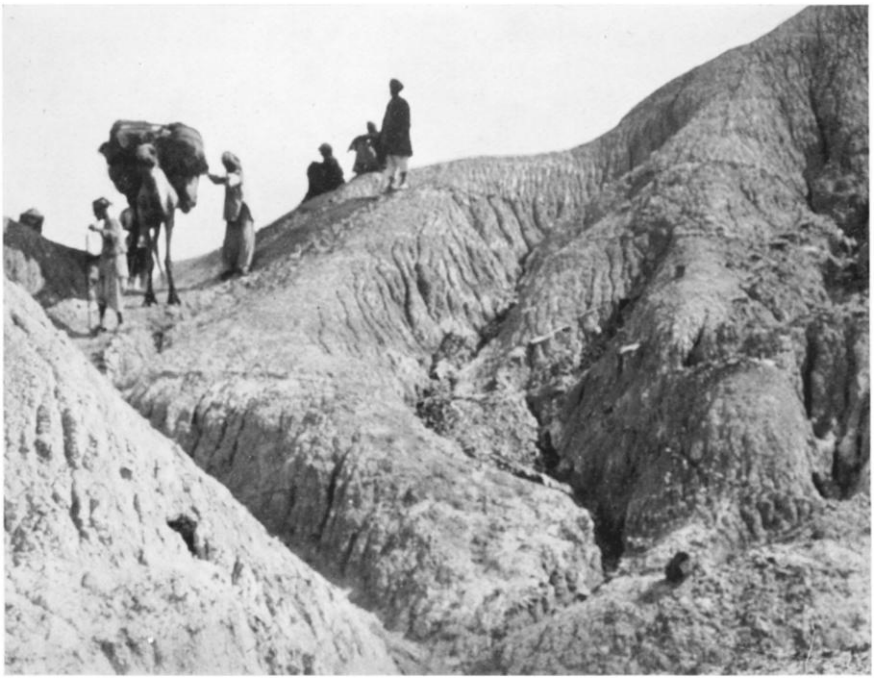
Where the mouth of the valley, at a point known as Danth, opens out into a gently sloping fan bearing tree growth there was passed near some water-holes the position of the former Las Bela customs station. Farther down I noted the line marked for a motor track of the Las Bela ruler and finally arrived at cultivated ground near the huts and well of Naku, the present customs post.

From here a short march across the flat alluvial plain, intersected first by flood beds of the Kud river and then branches of the Porali, would have sufficed to bring us to Bela. Actually our onward journey did not lead there but to the north along the Kud river to Gundarani at the foot of the range where the archaeological interest of that curious troglodyte site called us. The observations made there and those later at the prehistoric mound of Buband, within the village tract of Welpat, on our way to Bela town may be left for record elsewhere.

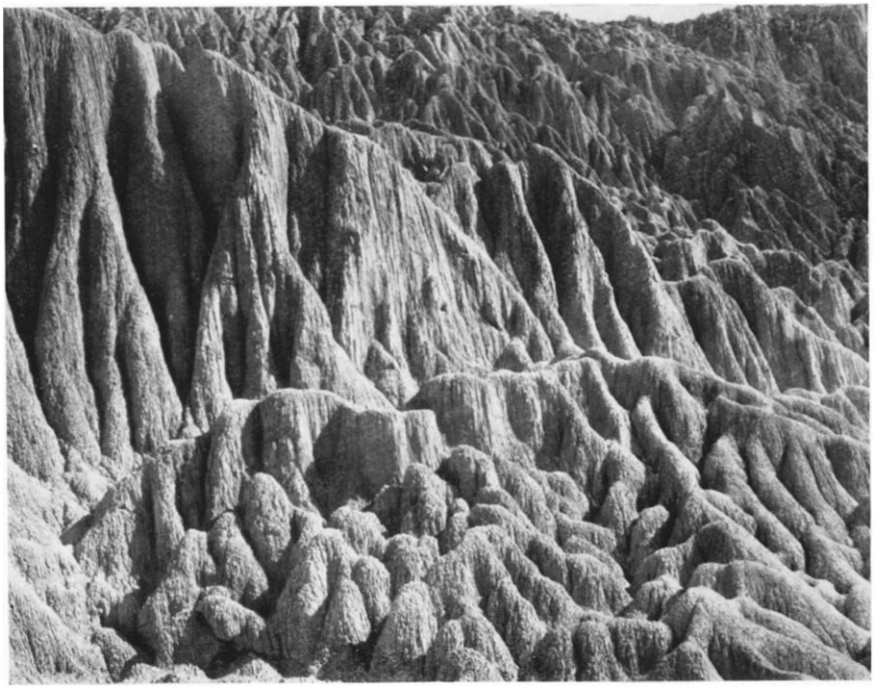
Section 3

Having sketched above in brief outlines the chief geographical features of the territory of Las Bela and described what personal acquaintance gained on my tour allowed me to observe of certain of its main portions, I may now proceed to examine what light the record of Alexander's operations in this territory receive from knowledge of their scene. These operations may claim some special interest because they marked the last phase of Alexander's invasion of India; but even more on account of their being closely connected with that famous retreat of Alexander's army through Gedrosia which by its hazardous nature and the great losses and sufferings it involved has exercised the imagination both of his contemporaries and of later historians.

It cannot be a subject of this paper to deal in detail with all the circumstances which led to this bold enterprise. But some remarks here seem needed on the circumstances which may explain its having been undertaken, and account for the line chosen for its execution. It has long ago been recognized that geographical exploration was among Alexander's chief objects when he



9. Langar pass between Parkini and Soler rivers



10. Sandstone along Hingol river

11. Hills to west of Kumbh pass on route from Las Bela to Jhau

12. On way up to Kumbh pass towards Jhau

moved with a large portion of his army from the Panjab to the mouth of the Indus. One main portion of this task of discovery was served by the voyages which took the great conqueror from Pattala at the head of the Indus delta, down both main branches of the Indus in succession, to the Indian Ocean (Arrian, 'Anabasis,' 6, xix–xx). Then at the base established at Pattala [1] preparations were made for the fleet commanded by Nearchus to accomplish the other task of discovery by sailing along the Arabian Sea coast to the Persian Gulf with a portion of the army on board and ultimately to convey it to the mouth of the Euphrates and Tigris. Already before the final descent along the Indus Alexander had detached Craterus with a large part of the army and all the elephants "to go by the road of the Arachosians (the Helmand valley) and Zarangions (Sistan) to Carmania (Karman)," where he was ultimately to rejoin Alexander.[2]

Arrian tells us at some length that while Nearchus with the fleet was still awaiting at Pattala in the autumn (of 325 B.C.) the advent of the north-east monsoon, which would provide the season favourable for coastal navigation, Alexander set out from Pattala with his remaining considerable force, largely composed of mounted troops. "He turned towards the ocean keeping it on his left in order to dig wells so that there might be plenty of water for the army which was sailing along the coast, and also with the intention of making a surprise attack on the Oreitai, the Indian tribe in these parts who had long been independent, since they had failed to make any friendly overtures to Alexander and his troops" ('Anabasis,' 6, xxi, 3).

On his advance "he crossed the Arabius, a narrow river with a small stream, traversed a considerable part of the desert by night, and at dawn was close to the inhabited region. Here he ordered the infantry to follow in marching order, but the cavalry he took with him and divided into squadrons that they might cover the greatest extent of country, and thus invaded the territory of the Oreitai. Such of them as offered resistance were cut down by the cavalry and many were captured alive" ('Anabasis,' 6, xxi, 5).

It should have been recognized long ago that by the Arabius the Hab river is meant here and quite correctly described. It drains the valley now known as the "Levy tract" between the southernmost hills of the Kirthar range and now forms the boundary between the flat south-western extremity of Sind about Karachi and the Las Bela State, just as it divided the territory of the Arabitai "an independent tribe who dwelt about the river Arabius" from the Oreitai, their neighbours to the west. It agrees with this identification of the Arabius as the Hab river that the Arabitai, when they learned of Alexander's approach, fled into the desert, *i.e.* into their hills northward ('Anabasis,' 6, xxi, 4). It is made equally clear by a look at the map that by the "considerable part of the desert" which the force traversed by night, is meant the barren much-broken plateau which the present high road from Karachi passes for a distance of some 20 miles between the Hab river and the

[1] The position of Pattala may be looked for probably in the vicinity of Haiderabad, but remains to be definitely fixed; for a summary of various locations, see *e.g.* McCrindle, 'Invasion of India,' pp. 356 *sq.*

[2] Arrian, 'Anabasis,' 6, xvii, 3. Here and elsewhere in quoting Arrian, Robson's translation in the Loeb Classical Library edition, 1933, is reproduced.

flat and potentially fertile ground by the coast south-east of Sonmiani, as far as the station of Naka Kharari.[1]

After having sent his cavalry ahead to sweep the country in a separate detachment, we are next told that "for the time being then, Alexander encamped by a small (sheet of) water; but on being joined by Hephaistion and his troops he advanced further." On consulting the map once again it is easy to see that "the water not large" of Arrian's text, where Alexander encamped to await the arrival of the main force under Hephaistion's command, is most likely to correspond to the Siranda lake which is skirted by the direct route leading to Bela and the best cultivated portion of the Las Bela territory. It receives most of the terminal drainage of the Porali and its lowest tributaries from the hills. It holds a perennial supply of drinkable water amply sufficient for the needs of a large force during some halt such as Alexander's main troops must have needed.

From the Hab river they had covered a total marching distance which could not have been less than about 50 miles, and that partly over much-broken waterless ground. Such a halt would then also have allowed the detached columns of cavalry scouring the country of the Oreitai to rejoin. It deserves to be noted that though the route to the Siranda lake from Naka Kharari passes along grazing grounds with plentiful tree growth, yet water is found only in scattered wells. The Windar, the only drainage bed crossed *en route*, is dry except when carrying rain floods during the monsoon.

Before we follow further Arrian's brief account of Alexander's movements in the country of the Oreitai, note must be taken of some useful indications with which the records of Curtius and Diodorus supplement that account at this point. By Curtius we are told that Alexander after parting from the fleet on the Indus passed through the tracts of the Arabites and Cedrosu and arrived at the river called by the natives Arabius. "Beyond it the country was found desert and waterless. This he traversed and so entered the land of the Horitae. There he handed over the greater part of the army to Hephaistion and divided (the rest of it consisting of) light armed troops between Ptolemy, Leonnatus and himself. These three divisions plundered the Indians simultaneously and carried off a large booty. Ptolemy devastated the maritime country, while the king and Leonnatus between them ravaged all the interior. Here, too, he built a city in which he settled Arachasians."[2]

[1] Sir Thomas Holdich, "A retreat from India," p. 116, takes the Arabius for the Porali, as before also Cunningham, 'Ancient geography of India,' p. 350 (second edition), and assumes for the crossing of the river a position south of Bela. But Arrian's text clearly shows that a considerable stretch of desert was crossed after passing the Arabius river and before the attack on the Oreitai was made. Once beyond the Porali no such desert would be crossed. The mistaken identification of the Arabius with the Porali by Holdich is connected with his conjectured assumption that the sea in Alexander's time extended much farther north than at present, at least as far as Liari, more than 20 miles north of the port of Sonmiani. This theory has materially influenced the whole of Sir Thomas Holdich's views regarding the route followed by Alexander on his move from Las Bela into Gedrosia. It is not supported by any valid archaeological evidence.

[2] Curtius, 'Historiae' (ed. Heinicke) 8, x, 5–7. I give the passage as translated by McCrindle, 'Invasion,' p. 262, with slight modifications as suggested by the wording of the text. It seems difficult to account for the total of the twenty-three days which

The information here given is confirmed in its essential details by Diodorus who evidently used the identical source in a passage which specifies a topographically interesting point. "Then after passing through an extensive waterless tract, of which no inconsiderable part was desert, he reached the border of the Oreitai. There he divided his army into three parts, giving Ptolemy the command of the first division, and Leonnatus of the second. Ptolemy being commanded to ravage and plunder the seaboard and Leonnatus the interior, while the third division under his own command, devastated the plains towards the hills and the hill country itself." [1]

Here we have then a definite indication that the direction of Alexander's advance within the territory of the Oreitai lay towards the north, *i.e.* that portion of Las Bela where the fertile plain lies nearest to the hills, and where, as we have seen, the facilities of irrigation from the Porali river and thence for settled occupation are the greatest. It is thus to this area, the present Welpat tract at the apex of the triangular alluvial fan, that we have to look for the site to which Arrian's account next takes us. There we read that "on being joined by Hephaistion and his troops he advanced further. Then arriving at a village which was the largest village of the Oreitai, called Rambakia, he was impressed with the position, and felt that a city founded there would become great and prosperous, he left behind Hephaistion, therefore, to attend to this" ('Anabasis,' 6, xxi, 5).

It follows from what has been explained above that the site of the village of Rambakia which Alexander selected for founding a city, has to be looked for in Welpat and with some probability in the vicinity of the present Bela. But no definite location is at present possible. At Bela itself the height and extent of the mound on which the town is built, distinctly suggests considerable antiquity, and the traditional belief that Bela represents the Armabel of Muhammadan historians, mentioned as on the route followed by Arab invasions from Makran into Sind, points to the occupation of the site anyhow since early mediaeval times. But I was unable to trace any definite archaeological evidence as to the earliest period to which the formation of the great mound may date back. Continued occupation down to the present day with its constant deposit of refuse on the slopes has prevented here such denudation as might have exposed on the surface ceramic and other approximately datable remains.

It is different with two other conspicuous old mounds which rise above the alluvial plain in the neighbourhood and undoubtedly mark important sites of antiquity. Both will be found fully described in the purely archaeological section of the report on my tour in Las Bela. Of the mound of Niai Buthi,

Alexander is stated by Curtius to have spent on his move from the Indus to the Arabius, considering that the marching distance between those points, as measured along the line followed by the N.W. Railway from Haiderabad (assuming this to be position of Pattala) to Karachi and thence to the Hab river cannot well be reckoned at more than about 150 miles. The three tracts here indicated in their order from south to north may be considered roughly to correspond to the present Niabats of Sonmiani, Sheh-Liari and Uthal, and Welpat. Judging from the amount of booty recorded by Diodorus as having been gathered in these tracts they may be supposed to have held a larger population than is to be found there nowadays.

[1] Diodorus, 'Bibliotheca,' 27, civ, 5 *sq.*; McCrindle, 'Invasion,' pp. 296 *sq.*

situated about 3 miles in a direct line to the north-east of Bela, our trial excavation has shown that it dates from Chalcolithic times, and no evidence of later occupation was traced. In the case of the other mound which rises about half-way to the former in the same direction and close to the much-frequented sacred tomb of Pir Kariya, plentiful pieces of decorated pottery found on the surface prove occupation during early historical times. Some Sassanian silver coins shown to me by the Jam Sahib are also said to have been found on this mound. The ground around both mounds is crossed by numerous inundation channels from the Porali and flood beds draining the hills to the east, and it is closely cultivated throughout.

The name Rambakia given by Arrian for the "capital" of the Oreitai affords no help to its location. There is no local name in Las Bela which can be derived from it. Its interpretation as the equivalent of a conjectured modern Hindi Ram-bagh, as suggested by General Cunningham,[1] on the ground of a supposed connection with the distant Hindu pilgrimage route to Hinglaj on the Hingol, is not supported by any philological or other evidence and only an instance of "learned popular etymology." Nor can any archaeological support be found for the location of Rambakia at Khaira Kot far away to the south as conjectured with some hesitation by Sir Thomas Holdich, the site being certainly mediaeval.

Arrian next tells us that Alexander leaving Hephaistion behind at Rambakia to attend to the foundation of the proposed city, with a mounted portion of his force "advanced towards the border of the Gedrosians and Oreitai, where it was reported that the approach was by a defile (στενή) (Pl. 12) and the Gedrosians and the Oreitai had joined together and were encamped before the gorges (πρὸ τῶν στενῶν) to check Alexander's approach. They were, in fact, arrayed there; but when news was brought that he was nearing them, the greater part of them fled from the gorges (ἐκ τῶν στενῶν) deserting their post; but the chiefs of the Oreitai came to Alexander surrendering themselves and their nation" ('Anabasis,' 6, xxii, 1 *sq.*).

There then, in Arrian's concise narrative, as always critically more reliable than the notices of Alexander's other historians, we have a definite topographical indication as to where Alexander's route lay when he crossed the border from the land of the Oreitai into Gedrosia. It was the same border which divides now the present Las Bela from the Kalat State in the mountains west of Bela (Pl. 11). After what has been shown above as to the line followed on his advance from the Hab river northward to "the largest village of the Oreitai," in the vicinity of Bela, the present capital of Las Bela, there can be no reasonable doubt that by the defile towards which his advance then lay and by the gorges at the mouth of which the combined tribes were arrayed to stop it, is meant the pass to which the present main caravan route, connecting Las Bela with the Jhau tract and thence with the eastern extremity of Makran, ascends through winding gorges from the alluvial plain west of Bela.

It is easily understood also that the Oreitai, whose territory had already been ravaged before by the several Macedonian columns, should have fled, towards that route which could afford them the nearest line of retreat, to a

[1] See 'Ancient geography of India,' pp. 354 *sq.* (second edition).

neighbouring tract where they could hope to find protection and, what in case of such an emergency would be of equal importance to large numbers of fugitives, needful means of subsistence. They could not possibly have sought these in the south along the barren sea coast or help for resistance from the poor "fish-eaters" living along it. The quick submission of the fugitive Oreitai, when the invader drew near them on this route, proves that by his sudden attack on "the Oreitai the Indian tribe in these parts who had long been independent" ('Anabasis,' 6, xxi, 3), Alexander had produced the intended effect and cleared the way for his subsequent unopposed march through Gedrosia. That he encountered no resistance on this may well have been, at least partly, a result of this initial success.

Arrian next relates that Alexander left Leonnatus behind with detachments of the army to "await the fleet, until it made its voyage past the district, to build the city" and to pacify the territory. "Then he himself with the larger part of his army . . . proceeded towards the Gedrosians through country which for the most part was desert" ('Anabasis,' 6, xxii, 3).

Before we proceed to trace Alexander's move farther through the wastes of Gedrosia, be it only in briefest outlines, reference must be made here to two questions. They relate to the choice of this route which was to entail such grave trials and losses to his army, and to the difficulty about supplies that was their chief cause. As regards the direction of the route followed, a look at any convenient small-scale map[1] shows that if access was to be gained from the Indus delta and Las Bela to the important provinces of Kerman and Fars, the ancient Carmania and Persis, main portions of Alexander's newly conquered vast empire, no line of march more direct could have been chosen than the one presently to be sketched.

In respect of the chief difficulty presented by this route to the passage of an army, Arrian has fortunately preserved for us the following information which on account of the authority quoted for it must claim special interest and importance: "It was not because Alexander had no knowledge of the difficulty of the route that he went that way (it is Nearchus alone who says so); but rather that he had heard that no one had successfully come through this way with an army, except that Semiramis had fled this way from India. The natives had a tradition that even she escaped only with twenty of her whole force. Cyrus, son of Cambyses, had got through with only seven survivors. For Cyrus had come into these parts intending to invade the country of India; but before he could do so he lost the greater part of his army by the barrenness and difficulty of this route. The relations of these stories to Alexander inspired him with emulation towards Cyrus and Semiramis. It was then, on this account, and also that the fleet, being close by might be provided with the necessaries, that, according to Nearchus, Alexander chose this route." [2]

[1] See, *e.g.* the Baluchistan and Southern Persia sheets, 32 miles to 1 inch, of the 'Southern Asia Series' of the Survey of India.

[2] Arrian, 'Anabasis,' 6, xxiv, 2 *sq.* In the concluding sentence the reference to the supply of necessaries to the fleet has been rendered differently from Robson's translation in view of what Arrian records, 6, xxiii, 4–5, about Alexander's endeavours to keep the fleet supplied with such provisions as might be collected in places along the march; see also McCrindle, 'Invasion,' p. 173.

In Book 6, Arrian has related at length the manifold great sufferings which Alexander's army underwent on its distressing progress from the land of the Oreitai to Pura, the chief place of Gedrosia. He has also graphically described a number of particular incidents. The want of local resources, the scarcity of water with the consequent enforced length of trying marches, the heat of the barren region and the rapid loss of transport animals due to these causes; all these are emphasized also by the other historians of Alexander. The difficulties of this retreat were increased also by the large number of women and children which accompanied the army.

In those accounts we find the trials and losses undergone by the troops all described with ample detail, often rhetorically treated. By the side of these elaborate details we note a striking absence of precise topographical indications. Yet the configuration and the general character of the ground over the vast stretch of Baluchistan between the confines of Sind and of Kerman, as we now know it, make it quite clear that the line followed by the bulk of the army must have lain from Jhau on the upper Hingol river along the natural corridor, formed by the open basins of Kolwa and the wide Kech-Dasht valley, towards the valleys drained by the streams of Sarbaz and Qasrkand. Thence the great basin receiving the waters of the Bampur and Halil rivers lay open. Through this the fertile valley of Jiruft and the great cultivated tracts of the Kerman province, both to the north and west, could be reached with comparative ease.

My journeys of 1928–29 and 1931–32 have enabled me to visit and survey most of those portions of British and Persian Makran through which the route followed by Alexander's army is likely to have led. The full account of the observations, archaeological and geographical, made by me on these journeys, as contained in my detailed reports,[1] sufficiently illustrates the physical difficulties which were bound greatly to hamper the movements of any large force crossing this great stretch of ground. Most of it is desert now just as it was all through historical times. But that account also shows that the presence of cultivated areas, very rare and limited as they are, whether marked by ruined sites or still occupied, explains how it was possible for Alexander, while taking his army along this route, somehow to overcome the greatest of all the difficulties presented by it, that of the scarcity of local supplies.

A comprehensive treatment of all classical notices concerning ancient Gedrosia cannot come within the scope of this paper. But such points as concern the route followed on Alexander's march through it after leaving Las Bela, and certain incidents of it, as recorded in the extant narratives, may suitably come under review here.

As regards the choice of the initial portion of the route special attention deserves to be paid to the passage which in Arrian's account follows after what we have been told of the start from the territory of the Oreitai through the defile leading to that of the Gedrosians (see p. 216). "From there Alexander went on through the country of the Gedrosians by a route both difficult and

[1] See 'An archaeological tour in Gedrosia,' pp. 52–144, for explorations from the Kech and Dasht valleys as far as Kolwa and Jhau; 'Archaeological reconnaissances,' pp. 70–177, for exploration between the Dasht valley and Bam.

lacking in supplies; in especial the army often found no water; but they were obliged to traverse a considerable part of the country by night, and at a greater distance from the sea; whereas (ἐπεὶ γε) Alexander himself desired to work along the sea-coast to see such harbours as there were and to get ready what conveniences were possible for the navy, either by digging wells, clearing open spaces, or preparing anchorage. But the Gedrosian country was entirely desert along the coast line" ('Anabasis,' 6, xxiii, 1 *sq.*).

So Alexander instead of proceeding himself to the coast sent there Thoas, son of Mandrodorus, with a few cavalry to see if there were any anchorage possible in this direction, or water near the sea. When Thoas had returned from his mission with a report clearly describing the miserable condition in which the scanty fishing folk lived along the coast, there could obviously be no question for Alexander to turn south again from the ground he had reached in the Welpat tract and at the expense of long marches to seek the vicinity of a coast so utterly devoid of resources for feeding his army either with the fleet or on land.

This consideration by itself suffices to make it impossible to accept the theory set forth by Sir Thomas Holdich which places the narrow defile where the Oreitai and Gedrosians tried to stop Alexander at the open flat watershed at the head of the Phor valley, and from there makes Alexander move down to the mouth of the Hingol and then up the Hingol to the Parkini valley.[1]

What we are told by Arrian immediately after the mention of the return of Thoas with his report on the conditions along the coast, distinctly indicates that Alexander after having forced his way through the defile at the border of the Oreitai and Gedrosia took the route through Jhau, Kolwa, and the Kech valley which offers itself as a natural main line of communication through Makran towards Kerman. "When Alexander arrived at a certain tract in Gedrosia where provisions were more plentiful, he distributed what he obtained among the baggage trains; and this he sealed with his own seal, and bade them convey it to the sea. But when he was going towards the halting place from which the sea was nearest, the troops, making light of this seal—even the guards themselves—used these provisions and gave shares also to those most beset by hunger. . . . Alexander learning of the grave necessity, pardoned the offenders. Then by overrunning the district he got together what provisions he could for the army sailing with the fleet, and sent Cretheus of Callatis to convoy [it]" ('Anabasis,' 6, 1 *sq.*).

We may well conclude from this account that whatever supplies were secured in the cultivated tract first reached after the start from the territory

[1] See Holdich, "A retreat from India," pp. 117, 122 *sq.* This theory appears to have been accepted by McCrindle, 'Invasion of India,' p. 169, and has found a record in the 'Las Bela Gazetteer,' pp. 20 *sq.* It is set forth without any critically valid evidence; the fanciful etymological speculations as regards the name *Parkan* (map Parkini) and that of Gedrosia, borrowed from Bellew, does not help to support it. The fact that no cultivable ground is found in the Parkini valley nor anywhere in the barren hills to the north of it from which supplies could have been secured by Alexander, constitutes a grave objection against that theory. On the other hand the Parkini valley was found by us to hold an ample supply of water at a season much later after the monsoon rainfall than the one on Alexander's passage when it is assumed ("Retreat," p. 123) that "there would not be a drop of water to be had" in it.

of the Oreitai, about the present Jhau, Nundara, and Awaran, had been appropriated and consumed by the starving host on the long way down to "the halting place from which the sea was nearest." Doubtful, too, it seems whether any of the foodstuffs requisitioned in the district around that stage ever reached their intended destination on the coast; for Nearchus' careful record nowhere mentions that his fleet ever received provisions from the army on its coasting voyage, after taking in the ten days' supply collected before under Alexander's orders at Kokala near the border of the Oreitai ('Indica,' xxiii, 7).

From our present knowledge of the ground down the Kech valley it appears highly probable that by that "halting place from which the sea was nearest" the important oasis of the present Turbat is meant which after Panjgur is the most populated subdivision of British Makran and for a long time past has held its headquarters. From here a much-frequented road, the easiest of all connecting Kolwa and Kech with the coast and now made practicable for motors, leads down to the small port of Pasni.

That this road, passing through a couple of low hill ranges separated by a wide plateau, was followed by Alexander's army is made quite clear by a passage of Strabo. It tells us that Alexander marching with one of the three divisions of his army through Gedrosia, "kept at most at a distance from the sea of 500 stadia, that he might make preparations along the coast for the benefit of his fleet" (Strabo, 'Geographia,' 15, ii, 4). A variety of statements in Strabo's account of Alexander's march through Gedrosia agrees so closely with Arrian's narrative as to make it quite certain that both used the identical source.

Now Strabo in continuation of the passage just quoted relates the same incident of which Arrian tells us as having happened when Alexander was making his way from the interior of Gedrosia towards the coast ('Geographia,' 15, ii, 6). The guides of the route, so Arrian tells at greater length, lost the way owing to the violence of the wind having obliterated the marks of direction "in the sand which was everywhere and all alike heaped up on all sides, there was nothing by which one could guess the road. . . . So Alexander understanding that they ought to lead the army inclining to the left, took a few horsemen with him and rode ahead; and when their horses began to weary beneath the heat, left behind most of them, and he with not more than five rode off and found the sea . . .; then digging in the gravel, he found fresh and pure water, and so the whole army came thither; and for seven days they marched along the sea coast" ('Anabasis,' 6, xxvi, 4 *sq.*).

In close agreement with this Strabo relates how the king on perceiving that the guides had lost the way, "set out at once in search of the coast. When he had discovered it and by sinking wells had found there was water good for drinking, he sent for the army; afterwards he continued his march along the shore for seven days with a good supply of water. He then again marched into the interior." [1]

On comparing the two accounts drawn from a common source it becomes obvious that both refer to the same march of Alexander from the interior of Gedrosia to the coast, and that Strabo's statement of keeping "at most at a distance from the sea of 500 stadia" in reality represents the distance measured

[1] Strabo, 'Geographia,' 15, ii, 6, as translated by McCrindle, 'Ancient India,' p. 85.

by Alexander's bematists from the halting place which was nearest to the coast, as recorded in the original source. It is obvious that the Bematists' distance measurement could be effected only on the route actually followed and could not be taken from what a map based on triangulation might have shown as to the greatest distances at which the route taken by the army had kept from the coast since leaving Las Bela.

Fortunately a reference to what an exact modern map shows for the ground between Turbat and Pasni,[1] affords full confirmation of the conclusion reached. The caravan road from Turbat, the main village in the well-cultivated portion of Kech proper, passes across the Gokprosh hill chain of the Makran Coastal Range in a south-eastern direction. After crossing a wide plateau where water and camel grazing are obtainable at easy stages, it descends through a gap in the outermost hill chain of the Coastal Range due south to Pasni bay on the coast. Here on this last stage the road passes through what the map shows as a maze of low sandy hillocks, apparently wind-eroded, which stretches west for some distance towards the low, partly cultivated, plateau of Kulanch. It is on such deceptive ground that the incident related by Arrian and Strabo might well have taken place. The road distance from Turbat to Pasni as measured on the map, is approximately 60 miles. This when converted into Attic stades at the rate of 8 stades to the mile is in strikingly close agreement with the 500 stadia recorded by Strabo.

With this section of Alexander's route definitely determined it becomes easy also to locate the references found in Arrian's narrative to ground both in the north and south of it. Through Turbat there passes a main road north-eastward to the Panjgur tract, the best cultivated portion of British Makran. There can be little doubt that supplies secured from there are meant where we read in connection with "the halting place from which the sea was nearest" that "the inhabitants also were commanded to bring down provisions from the upper districts, grinding as much corn as they could, with dates from the palm trees, and keep for the army to purchase" ('Anabasis,' 6, xxiii, 6). The mention here made of dates points particularly to Panjgur which is to this day famous for its abundant produce of fine date fruit. The mention made of the upper districts is quite correct as the main valley of Panjgur lies at an elevation considerably higher than the Kech valley about Turbat and hence enjoys also a cooler climate.

Turning to the south where Alexander's route had reached the coast, both Arrian and Strabo in agreement furnish us with the useful information that after finding water at the shore "for seven days they marched along the sea-coast, getting water from the shore, and thence, for the guides now began to recognize the road, he led the army into the interior" ('Anabasis,' 6, xxvi, 5). Thus Strabo, too, tells us that Alexander "by sinking wells had found there was good water for drinking, he sent for the army; afterwards he continued his march along the shore for seven days with a good supply of water. He then again marched into the interior." [2]

[1] See the quarter-inch sheet No. 31 C (Baluchistan) of the Survey of India; for a summary of the road, see 'Makran Gazetteer,' p. 348.

[2] 'Geographia,' 15, ii, 6. Sir Thomas Holdich rightly recognized that the seven days' march along the shore before turning into the interior is correct if reckoned from

I have had no opportunity of following the route from Turbat to Pasni and thence along the coast to the port of Gwadar, as my own march in January 1929, from Turbat to Gwadar led down the valley of the Kech and Dasht rivers. But the Survey maps show that an easy track leads all the way from Pasni to the Isthmus of Gwadar, a direct distance of some 80 miles along the flat shore where drinkable water is to be found in wells of no great depth. Then from Gwadar the terminal course of the Dasht river is gained over flat alluvial ground, mainly along the western bay of Gwadar, over an additional distance of about 40 miles. On following this line up to Gabd, where the Indo-European Telegraph crosses the bed of the Dasht river, ordinarily dry here, the total distance of 120 miles from Pasni could easily be covered in seven moderately long marches.

From the Dasht river the way lies quite open across the border of Persian Makran into the partly cultivated plain of the Dashtiari tract on both sides of the Bahu river. With this tract and with the valleys leading northward towards Bampur my explorations of 1931 acquainted me to a considerable extent.[1]

Neither Arrian nor any other classical records furnish us with any details as to the line followed by Alexander after he had "led his army into the interior. Arrived at length at the Gedrosian capital, Alexander rested his army there" ('Anabasis,' 6, xxvi, 5; xxvii, 1). We are told before by Arrian in connection with "the halting place from which the sea was nearest," that "then Alexander advanced towards the Gedrosian capital; the district is called *Pura;* and he arrived there from the district of the Orii in a total of sixty days" ('Anabasis,' 6, xxiv, 1).

It has long ago been recognized, and I believe with good reason, that the "Gedrosian capital" has to be looked for in the long stretch of cultivated ground which extends for some 24 miles along the Bampur river. This, by far the largest tract of Persian Makran affording agricultural resources, lies at the eastern end of the wide drainageless basin holding the salt marshes of the Jaz-Murian Hamun. This extends thence in a north-western direction towards Rudbar and Jiruft and affords the easiest approach to the centre of the Kerman province, the ancient Carmania. The large fort and adjacent village to which the name of Bampur specifically applies, has down to modern times always been the chief place of Persian Baluchistan, and large mounds close to it attest occupation of the site since prehistoric times ('Archaeological reconnaissances,' pp. 95 *sqq.*). Whether Pura "the Gedrosian capital" of Alexander's time, stood actually there or some 16 miles farther up near Fahrej (Iran Shahr) which since the last century serves as the military and administrative headquarters of Persian Baluchistan, is uncertain. But consider-

the neighbourhood of Pasni; "Retreat from India," p. 124. But in accordance with his theory of Alexander having marched along the Parkan (Parkini) valley he makes him lose his way beyond the Basol river to which that route would have led him; or else he assumes a mistake of numbers in the reckoning of seven days along the shore.

[1] For a record of the observations made in the Dashtiari tract, see my 'Archaeological reconnaissances,' pp. 71 *sqq.* For the topography of the areas traversed from here to Bampur and thence to Rudbar, Jiruft, and other south-eastern portions of the province of Kerman, map No. 1 of the same work may be consulted.

ing the geographical position occupied by the Bampur tract, its agricultural resources and the direction of Alexander's march towards Carmania, it can be safely assumed that it was this tract where "Arrived at length at the Gedrosian capital, Alexander rested his army there," as Arrian tells us ('Anabasis,' 6, xxvii, 1).

There is no philologically sound reason for seeking to connect Pura with the modern name of either Bampur or Fahrej (Iran Shahr). But we are justified in accepting Arrian's statement that Alexander arrived in the district "called Pura . . . from the district of the Orii (*i.e.* Oreitai) in a total of sixty days" as substantially correct if applied to Bampur. Assuming that Alexander proceeded to Bampur from the Dasht river to which we have traced his progress, by the most direct and easiest route which leads through the oasis of Qasrkand and *via* Champ, an approximate measurement on the Survey of India sheets gives us a total rough distance of 410 miles. Or if we take the route I myself was obliged to follow in 1932 from the Dasht river *via* Qasrkand, Geh, Bint, and Fanuch,[1] we get a distance as measured on the map of 470 miles. Even if no allowance is made for a necessary increase of actual marching distance over these map measurements, the time estimate of sixty days for the whole march can in no way appear exaggerated, considering the difficulties of the ground, indispensable halts, and slow movement imposed on an army heavily encumbered by its baggage train, including numbers of women and children ('Anabasis,' 6, xxi, 5).

It deserves to be noted that the location of Pura at Bampur is indicated also by the fact that up the Bampur river leads a direct road to Sistan, the ancient Drangiana. The latter district has at all times served as a granary for the south-eastern portion of Persia and access to its resources would account for the rest which the army was given at Pura=Bampur.

In view of the geographical facts it may be considered as certain that Alexander's route from the Gedrosian capital towards Carmania led through the flat basin in which both the Bampur river and the Halil Rud from the north-west terminate. Though the wide area traversed on this route is for the most part a scrub-covered desert, yet the presence of wells, plentiful grazing, and patches of cultivated ground would allow of the passage of an army without serious difficulty, once supplies had been secured in Bampur.

After cultivated ground in Rudbar on the terminal course of the Halil Rud had been reached, an easy way lay wide open to the north up the amply irrigated fertile valley of Jiruft, and all serious difficulties about supplies came to an end. Numerous mounds dating from prehistoric times down to Muhammadan times, and the large ruined site of the city which Marco Polo knew by the name of *Camadi*, prove how closely inhabited this south-eastern tract of Kerman must have been down to mediaeval times ('Archaeological reconnaissances,' pp. 137 *sqq.*). Kahnu, the chief place of Rudbar, near the southern extremity of Jiruft, may, perhaps, have witnessed the meeting of Alexander with Nearchus. He had brought the fleet safely to old Hormuz

[1] For an account of my journey of about 165 miles from the Bampur river across the present border of Kerman to the lower Halil Rud, see 'Archaeological reconnaissances,' pp. 132 *sq.*

(Ἁρμοζεία) and his unhoped for arrival at Alexander's camp Arrian dramatically describes.[1]

Once arrived beyond the wastes of Gedrosia and well within the borders of ancient Carmania, we need not trace Alexander's route farther in detail. As we are told that on arrival in Carmania Alexander was joined by the Satraps of Areia (Herat) and the Zarangians (Sistan) with plentiful transport animals including camels, the troubles of the army on its onward move were then ended.[2] While a portion of the army is said to have been sent towards the Persis by a route nearer to the coast, Alexander himself "advanced by the road leading to Pasargadae" ('Anabasis,' 6, xxix, 1). Taking into account the westerly direction thus indicated, we may reasonably assume that the capital of Carmania which Alexander could scarcely have left unvisited, lay at the time in Sinjan, as it did during early mediaeval times, and not at the present town of Kerman, away to the north of Jiruft.[3]

Having thus completed our review of the route followed by Alexander from the mouth of the Indus to the Persis, as direct knowledge of the ground traversed allows us to trace it in the light of the extant classical records, I may add in conclusion some general observations on that retreat as a whole and notice a few points incidentally brought out by those records. Notwithstanding Nearchus' testimony as to Alexander's quasi-personal motive for deciding upon this hazardous undertaking, we cannot hope ever to receive full light on all the reasons military, geographical, political; also, perhaps, inadequate intelligence, which may have had their share in prompting Alexander's decision. But certain it appears to me that in choosing this particular line of route followed with his troops from Las Bela to Carmania he was guided by what correct local information was obtainable through his staff.

The route we have traced above was clearly the one which was most likely to keep the army within reach of such local supplies as poor arid Gedrosia could afford. In the absence of any hostile opposition to be met, the difficulty about feeding a large force in passing through so great an area, mainly desert and bare of local resources, must have presented the chief problem, just as it would now for any modern commander having to operate in parts of Baluchistan. Gedrosia had been ever since the time of Darius a satrapy of the Achaemenian Empire. Since its charge was given along with that of the Oreitai to Apollophanes,[4] it may be safely supposed that the limited extent of its local supplies must have been well known in the latter territory.

We may assume that the other very serious physical difficulties besetting a march through Gedrosia which apart from want of food account for all the

[1] 'Indica,' xxxiv *sq.*; see 'Archaeological reconnaissances,' p. 177, for the likely location of this meeting.

[2] According to Curtius, 9, x, 17, the much-needed fresh transport and supplies arrived before the force passed beyond the border of Gedrosia. See also Plutarch, 'Life of Alexander,' chapter 66.

[3] See Mr. C. A. A. W. Oldham's remarks, *Geogr. J.* 90 (1937) 560.

[4] For Apollophanes as Satrap of the Oreitai, see Arrian, 6, xxii, 2. His charge of Gedrosia also is not directly mentioned; but in 'Anabasis,' 6, xxvii, 1, we are told that Alexander on arrival at the Gedrosian capital removed him from his Satrapy as he had neglected all his orders. Combined charge of the Gedrosians and Arachosians (*i.e.* the Helmand valley) was subsequently given to Sibyrtius, an administrative arrangement which geographical vicinity explains.

great sufferings undergone by the army, must also have been known before that route for the retreat was decided upon; such were the scarcity and badness of water, the trying climatic conditions, the scantiness of grazing suitable for horses and mules. But if no adequate regard was paid to all these difficulties before that risky decision was taken, it may be well accounted for by the confidence which knowledge of all the hardships and dangers successfully overcome before by this army of conquering veterans must have inspired in their incomparable king and leader.

Such war-hardened troops who had fought their way victoriously over immense distances from the Aegean Sea all the way to Central-Asian steppes in the north and over the vast plains of the Indian borderlands in the south, might well have been expected in the end when at last on their way home from unsurpassed conquests, to face bravely and overcome such obstacles as a mere desert, not altogether uninhabited, would oppose. It was anyhow the nearest way by which they could hope to return with their rich spoils of war to the distant homeland across the vast empire which their valour under a great leader had gained for Hellenic rule.

That Alexander knew well how to inspire his troops while suffering from such trials with complete reliance on his leadership is, perhaps, best illustrated by the incident which, well known as it is, yet deserves to be quoted here in Arrian's words ('Anabasis,' 6, xxv, 1):

"The army was marching through sand while the heat was already burning since they were obliged to reach water at the end of the march; and this was some distance ahead. Alexander was much distressed by thirst and with much difficulty, but still as best as he could, leading the way on foot; so that the rest of the troop should . . . bear their toils more easily when all sharing the distress alike. Meanwhile some of the light-armed troops had turned aside from the rest of the line to look for water, and had found some, just a little water collected in a shallow river bed, a poor wretched water-hole; they gathered up the water with difficulty and hurried back to Alexander as if they were bringing him some great boon; but when they drew near, they brought the water, which they had poured into a helmet, to the king. He received it, and thanked those who had brought it and taking it poured it out in the sight of all the troops; and at this action the whole army was so much heartened that you could have said that each and every man had drunk that water which Alexander thus poured out."

The incident so graphically recorded here by Arrian helps well to illustrate the way in which the nimbus surrounding Alexander's heroic personality is likely to have helped to maintain the spirit of his troops amidst all the grave hardships they endured in Gedrosia.

The modern traveller passing over the ground traversed by the route we have traced, finds it easy enough to realize the great trials which the scarcity of water over many of the marches, the inadequate supply of provisions, the total want of protection from the heat prevailing during a great part of the day in this barren region, must have involved for large bodies of men and their transport animals toiling along here. The present wayfarer still finds sand in plenty where the route passes alluvial flats or wide beds of torrents; but he would look in vain for such "high hills of deep sand not beaten down

but letting men and beasts sink in as if into liquid" as Arrian rhetorically describes ('Anabasis,' 6, xxiv, 4), except in a few places such as on the long descent to the Bampur river or along stretches by the terminal Halil Rud.

On the other hand the distress and heavy loss experienced by Alexander's troops from a great spate suddenly descending at night from the hills in a small stream by which they were encamped, was brought home to me very strikingly by a similar danger experienced by us in 1929 below Turbat.[1] What Arrian tells us on the same occasion of the "great spate of water that drowned most of the women and children among those which followed the army; swept away all the royal pavilion and its contents, and so many of the transport animals as had survived," shows clearly how heavily the army was encumbered on its move. The same conclusion may be drawn from the mention made of the wagons "which the men themselves kept destroying as it was impossible to drag them along owing to the depth of the sand, and also because in the earlier marches they had been compelled for this reason not to go by the shortest routes but by those that were easiest for the teams." [2]

Of the difficulty about transport to which the army was reduced farther on in Gedrosia, we are definitely told by Arrian: "Of the transport animals there was then great loss, even caused deliberately by the army; for whenever provisions began to fail them, they clubbed together and gradually killed off most of their horses and mules and ate their flesh, giving out that they had perished from thirst or had collapsed from fatigue." [3]

We have no, even approximately correct, information about the extent of the losses the army had suffered in men on this calamitous march through Gedrosia; but the concordant account of Alexander's historians shows that the losses must have been heavy. All the same it is clear that when the force with Alexander reached Carmania and thence the Persis, the traditional centre of his newly won empire, it was as an intact portion of his army and not as a disorganized fugitive host. This is proved by the effective steps taken by Alexander on his arrival at the Gedrosian capital as regards the administration of different parts in the east of the Empire and also by the large reinforcements which were promptly brought to him when he reached Carmania by the Satraps of provinces as distant as Parthyaca, Hyrcania, and Media ('Anabasis,' 6, xxvii, 1–3). We may recognize negative evidence of the same also in the fact that in spite of the rumours which must have spread far and wide about this retreat no serious revolt followed during Alexander's

[1] See 'Anabasis,' 6, xxv, 4 *sq.*; 'Archaeological tour in Gedrosia,' p. 57.

[2] 'Anabasis,' 6, xxv, 2. In this connection note may be taken of the curious fact that until the arrival of camels brought by Stasanor, the Satrap of Areia, and the Satraps of northern provinces to assist the army on arrival in Carmania ('Anabasis,' 6, xxvii, 3), no reference is made to these animals. Camels would have been particularly useful for transport of the heavier loads through Gedrosia, and much easier to feed, while horses and mules are repeatedly mentioned. Is it possible that the breeding and use of camels had at the time not yet extended so far south as the lower Indus valley, Las Bela, and Southern Baluchistan?

[3] 'Anabasis,' 6, xxv, 1. The same expedient was resorted to by the Emperor Jovian's army on its sorry retreat from the Tigris through the desert past Hatra; see Ammianus Marullinus, 25, viii, 4; also my paper "The ancient trade route past Hatra and its Roman posts," *J. Roy. Asia. Soc.* (1941) 313 *sq.*

lifetime in any part of the vast dominion he had brought under Macedonian control.

Arrian rightly discredits the story which made Alexander drive through Carmania in Bacchic revelry, to mimic the legendary triumph celebrated by Dionysus after the conquest of India. But we may safely accept his statement made on the authority of Aristobulus that "Alexander in Carmania sacrificed thanks-offerings for the conquest of India, and on behalf of his army, for the safe transit through the Gedrosian desert." [1] This safe return of an army through so great an expanse of inhospitable wastes was indeed an achievement for which history may well give credit to the pluck and endurance of Alexander's hardy veterans and to the mastery exercised over them by their indomitable king and leader.

The author's spelling of place-names has not been adjusted to the spelling of the Survey of India, given on the sketch-map.

SOME ASPECTS OF THE COUNTY OF LONDON PLAN

PROFESSOR PATRICK ABERCROMBIE

Meeting of the Society, 11 October 1943

I FEEL some slight embarrassment in rising to address an audience largely, I presume, consisting of explorers, those who are wont to advance into strange and unknown country of illimitable size and penetrate in any and every direction, whether it be an Arabia Deserta or Arabia Felix, the North or South Pole. I am going to explore and try to explain to you the topography of a certain area beyond which I am not at the moment allowed to trespass. It is an area bounded by an imaginary line and, furthermore, when I come to what should be the kernel of the whole county, the South Pole shall we say, I am to desist altogether from entering that magic circle. Somebody else is already exploring that central area, the City. I hope to explain to you as geographers the very limited area for which a plan has been prepared by my colleague, Mr. Forshaw, the architect and planner to the London County Council, and myself.

Whoever tries to prepare a plan for any town or existing place is always faced with a threefold background to his work. There is the background of Nature, the background of man-made history, and, lastly, the background of the present conditions of the area concerned. Our plan is, in a sense, an escape from those present conditions. We would not have prepared a plan if we had not thought there was some reason to get away from the existing conditions which we found in the area. But there is no escaping from Nature,

[1] 'Anabasis,' 6, xxviii, 1–3. Alexander's retreat from his Indian conquest has sometimes been compared with Napoleon's retreat from Russia in 1812. But it must be remembered that Alexander retained, while he lived, complete hold on his empire, which opened the way for the influence of Hellenic culture into a great portion of Asia, while Napoleon's retreat made under pressure of a valiant enemy was promptly followed by the defection of unwilling allies and finally by defeat and the collapse of his rule.