

species were found to be common to the Niger or the Nile ('From the Niger to the Nile,' 1907, p. 315).

Considering now only the former connection of the Nile with Lake Chad, it should be remembered that Captain Stigand's explanation need not be the only one. If, as is supposed (F. R. Cana, "The Sahara in 1915," *Geographical Journal*, 46, p. 342, 1915), the Wadi-el-Fardi reached the Nile near the head of the Delta, then a connection of the Wadi with the Bahr-el-Ghazal would be sufficient to account for the common fish fauna of Chad and the Nile. It may also be considered whether the Bahr-el-Ghazal (of Lake Chad, not of the Nile) did not once connect with the Wadi Hower, which "according to native reports reaches the Nile near Dongola" (*Ibid.*, p. 345). Against this, however, is a doubt as to the very existence of the Wadi Hower.

Africa has still its mysteries even for explorers, and while the channels of the Wadi-el-Fardi and the Wadi Hower remain doubtful, who can satisfactorily trace the former connections of the Nile? Already the advancing traveller has dispersed most of the clouds of speculation in which Africa for long was shrouded. May the travellers of the future continue to unfold the more elusive secrets of the continent, and among them, let us hope, those of its volcanoes, its regional movements, and its river systems.

DR. TAFEL'S TRAVELS IN TIBET.

'Meine Tibetreise.' D'Albert Tafel (Berlin, 1914; 2 vols.); and "Reise in China und Tibet, 1905-8," *Geographische Ergebnisse*, Teil I., "China." S. Mittler & Sohn, Berlin. 1912.

DR. TAFEL'S travels in North-West China and Central Asia in company with Lieut. Filchner and subsequently by himself have been the subject of several reviews and notes in this *Journal*. The notices of his individual researches have mostly been based on communications addressed to the Berlin Geographical Society, published in the *Zeitschrift* and *Petermanns Mitteilungen* (vide *Geographical Journal*, vols. 27, 28, 29, 30). A preliminary account of the journeys was published by the Berlin Geographical Society in 1908, but a detailed history of the whole experiences of his long and eventful journeys such as has now been published has been awaited with great interest.

The first addition given to our knowledge is a description of a journey made, when on his way from Hankow to the Yellow River, to the country lying south of the west-east course of the Han River. Striking south from Kün-chou he made his way to Wu-tang-shan, a beautiful piece of mountain land in the eastern part of Ta-pa-shan, a range first visited by Père David, later by Richthofen, and more recently by Colonel Manifold and others, but still awaiting fuller exploration.

After reaching the T'ung Kuan bend of the Yellow River he spent

May and June in making a survey of the north-south reach of that river, and claims to have been the first European to reach Pao-ti since the seventeenth century, when Père Gerbillon accompanied Kang Hsi on his expedition against the Eleuths. The map which he has produced, on a scale of 1:200,000, is a wonderful piece of work in view of the immense difficulties which faced him in obtaining observations of the river's course. It is also in itself an exquisite specimen of workmanship. On the completion of this survey he struck east to So-ping *via* the sources of the Fen River and Yang-fang-k'ou, and then again west across the Ordos country to Kansu and so to the Yellow River near Ling Chou.

In reading the account of the journey between T'ung Kuan and Pao-ti and thence to So-ping, one is struck again and again by the picture the traveller gives of the desolation caused by the famine years of 1876-8. This tract of country is so little known that its sufferings during those cruel years passed unnoticed by the public, but from the traces left and still enduring it would seem that the natural poverty of the land rendered it even more sensible to the cruel scourge of famine than those other parts of Shan-si on which attention was most concentrated.

Several side excursions, the object of which is not quite clear, were made by Tafel in his travels. One of these in Hu-peh has been already mentioned. From Kuei-hua-chêng a short journey was made across the Ching Shan (the Yin-shan of maps); and from Ling Chou on the Yellow River a visit was paid to Fu-ma Fu, the residence of the exiled Prince Tuan, on the north of the Ala-shan Mountains. Returning from this point to Ning-hsia Fu, he again took up the mapping of the Yellow River, which with one break occasioned by the insuperable difficulties presented where the river passes through a cañon in the Nan-shan range, he carried on to Lan-chou. To the natural difficulties of the road were added others occasioned by the outcome of a struggle with followers of the Boxer general, Tung Fu-hsiang, who, in spite of his death as officially reported, was living in a fortress guarded by his own troops near Ning-ling-ting, in the rich irrigated country near the Yellow River.

Leaving Lan-chou for Si-ning Fu he gathered together all that was required for a long journey westwards. But on the shore of Kuku Nor an attack made in a wild winter storm at night robbed him of his transport and nearly cost him and his followers their lives.

Returning to Si-ning Fu he spent the winter in endeavouring to replace his losses. Part of the stolen property was recovered through the Chinese authorities, whose influence even in places out of their control was considerable, and some consolation was derived from the opportunity of witnessing the New Year ceremonies in Hsi-ning and the temples at Kumbum, Dankar and Wei-yuan-pu. The collection of nomads from Kuku Nor, Mongolian Tsaidam, Lhasa, and Kam, with their beasts and families; the great "butter" festival at Kumbum on the occasion of the feast of lanterns, the masks of the priests and the motley assembly of men

and women from all parts together with the hospitality shown to all guests are dwelt upon by Tafel with great delight. He himself was treated with great consideration by abbots, officials, and all. Nothing was hidden from him of the treasures of the temples, which he describes at great length. The services, which two thousand monks attend, are rendered specially imposing by the magnificent bass voice which breaks the stillness of the hall and is followed by an outburst of music from cymbals, flutes and drums, and the murmur of the hymn chanted by the priests.

From Si-ning he made an excursion to the Wei-yuan-pu, the home of the "Turen," formerly an independent people, but subject to China since the Ming dynasty. The striking dress of men and women and the great festival held at the beginning of the second moon are described with much detail and enthusiasm. There, as elsewhere, the writer showed an unusual ability for entering into the feelings of the people and making himself a welcome guest.

In the following May Tafel left Hsi-ning and striking south to the Yellow River crossed the Lao-yeh-shan, a range extending south from Kuku Nor, which forms the divide between the Yellow and Si-ning Rivers. Tafel alludes *en passant* to the gradual diminution in height of the range as it stretches eastwards, a characteristic which he found to be common to it and other ranges north of lat. 32° , and opposed to Richthofen's theory of a sharply defined ascent from China to the Tibetan plateau.

News of ravages by rinderpest forced Tafel to leave his pack-yaks behind in the Lao-yeh-shan, while he made a hurried visit to the south bank of the Yellow River, and thence to Kuei-tê. On his way back accident threw him almost into the arms of the same gang who had attacked him at Kuku Nor. But escaping this danger he rejoined his caravan and travelled with it to Shara Koto and Dunkar, another great religious centre.

Proceeding west he crossed the water-parting between Kuku Nor and the Yellow River, and at last reached the plateau of Higher Tibet where great valleys (*Yung*), filled in parts with piles of colossal stones and *débris*, point to the existence of large rivers in the past, but are now dry or nearly so. Here Tafel took a new route southwards across the great Ta-la steppe, which lies between the south Kuku Nor and Semenov Mountains on the north and south, and extends from the south-north bend of the Yellow River on the east to Dubassu Nor on the west. The unexpected discovery of a river, the Chabcha-chu, and cultivated ground in this region led to its identification with the Hu-yu-yung (whose source had previously been ascribed to the Dubassu Nor), after tracing it to the freshwater lake Si-ni-tso into which it empties itself.

Valleys filled in with blocks of stone, river courses diverted from their original beds, and occasional stretches of loess are some of the main features of the Ta-la steppe, which Tafel compares with similar features seen at Kuei-te, Si-ming, and also in Shan-si and the Han Valley. To

the loess he assigns a more recent date than to that occurring in the east, but the great depressions (*Yung*) now filled with blocks of stone are of an earlier age, and to the deep, ever deepening, ravines in which the Yellow River has cut its way he ascribes an intermediate date. Signs of climatic changes and of periods when a moister atmosphere than that of to-day prevailed are also evident.

Continuing south Tafel then struck across the Si-an-si-pei Mountains, which he found to be a part of the Semenov Range, to the country of the Si-dia tribe, near the Chu-rong River. This he speaks of as the largest affluent on the left bank of this section of the Yellow River. Foiled in an attempt to cross it he pushed west. Fever and the rains and storms which ushered in the spring in June rendered the journey slow and difficult; but the beauties of the season and the glorious views of the Amne Machin mountains, 20,000 feet, as seen from the shore of Tossun Nor, compensated in part for all the sufferings *en route*. Thence he made his way by the valley of the Yogho-re Gol to Barun Tsaidam, where he was well received by the Jassak and most courteously entertained, except by mosquitoes, which below an altitude of 13,000 feet proved most trying even to these hardened travellers.

On leaving Barun the caravan struck south towards the Burkhan Buddha range, which was crossed at the Turketse Pass (14,500 feet). At Odontala the presence of sand-dunes in the quivering morass presented a puzzle difficult to solve. Enormous herds of wild yak, antelopes, kyang, etc., and frequent bears gave life to scenes of great beauty, which changed almost in a moment to misery under the influence of rain and snow on a surface which yielded to any pressure. These morasses with their beauties extended west to the brook which Tafel claims to be the source of the Yellow River. In the lake close by he found the last home of hundreds of wild yak, driven to its waters by the fever of rinderpest. Fear of contagion forced the traveller to abandon this position in all haste, and marching south he crossed the range which forms the water-parting of the Yangtse until he came to the river itself. Tibetans prevented the crossing of the river and obliged him to turn westward until he struck and crossed the Chu-mar. Everything seemed favourable to the success of the journey, when an attack by Tibetans robbed him of his ponies, yaks, and sheep. Only six yaks were left; tents, food, clothing, and all scientific treasures had to be destroyed save such as could be carried by the party of travellers, and sadly they set their face northwards towards Taidshinar Tsaidam.

Only once did fortune smile on the disconsolate travellers as they journeyed north. For twenty-five days they saw no sign of any human beings. But two tame yaks abandoned as worthless by other travellers were a welcome addition to the carrying capacity of the party. As time went on loads had to be reduced, for neither man nor beast had proper food, and the high altitude immensely increased the strain. But eventually

after crossing the Marco Polo range by a pass (14,650 feet) they reached first Choga-gol, first discovered by Prjevalski, and after mounting another pass (14,000 feet), the Nachi-gol. But few animals survived, and all baggage had been thrown aside or cached before the first tents were reached at Golmo. Even then great difficulties had to be overcome before help was extended, for strangers were regarded with suspicion as possible spies of the dreaded Gholoks.

At Golmo animals were hired to fetch the more recently discarded baggage and to start the travellers on their way east. Passing through the country of the Dsun and Wang-ka Mongols, and skirting the Lakes Dubassu and Kuku Nor, Tafel made his way to Dankar (where he met the late Lieut. Brooke), and finally to Hsi-ning.

While refitting at Hsi-ning in preparation for the continuance of his explorations Tafel paid a visit to Kumbum, where the Dalai Lama was then staying on his way from Urga to Lhasa. With his usual luck the doctor obtained an interview with this sacred personage, through the good offices of Mr. Teramoto, a Japanese, who in the dress of a Mongol priest had visited Lhasa and was then in attendance on the Lama. The impressions formed in the interview seem somewhat to have toned down those derived from the very unfavourable criticisms current in the country of the Dalai Lama's pretensions, exactions, and private life.

On January 20 the expedition again left Hsi-ning and took the road south to Kam. Thanks to the cruel cold the country was in good condition for travelling, for the morasses on high altitudes through which in summer men and animals toiled painfully foot by foot were now frozen. But the danger of an attack by Gholokhs was ever present. After crossing many ranges, the highest of which lay by the Tsassora Pass (13,700 feet) in the Semenov Range, the party eventually reached the broad valley through which the Yellow River flows, and there found themselves in the arms of a very large encampment of Gholokh-Khorgan. But the experience was better than expected, and two days later the journey was resumed and the Yellow River (about 900 feet broad) safely crossed on ice. Soon afterwards a caravan returning from Hsi-ning to Kam was met; the two parties joined forces, and travelling south-west across the water-parting at Rava-niembo-la (15,000 feet) of the Yangtse and Yellow Rivers, proceeded by rapid stages past the headwaters of the Ya-lung to Tendu. In spite of the friendly relations which had existed on the journey with the caravan, now that it had reached the home of its chief at Tendu an atmosphere of suspicion and distrust sprang up, and accompanied the expedition until it reached Jerku-ndo (Rockhill's Jyékundo) on the Dre'chu or Tung-tien Ho. Great calls were made on the tact and determination of the leader of the party in order to overcome the difficulties and dangers which thus arose. But at Jyékundo a most friendly reception awaited him, and Chinese traders *en route* to Lhasa or established in the place added their welcome to that of the natives.

But an attempt made to travel further west into Nan-chen was forcibly checked, and requests made to the prince for permission to visit his territory were sternly refused. Finally the traveller was informed that he must leave Jyékundo. But though he had overstayed his welcome, his followers had not, and after he had started on his way south to Ta-chien-lu several desertions occurred among his most reliable men, who hastened back to dry the tears of Tibetan maidens, whom Tafel had refused to enrol in his company. The journey south practically followed Rockhill's route. After leaving the Dre'-chu valley much hostility was encountered at the hands of Tibetan monks, and the crossing of the Ya-lung was made under a hail of stones, which led to the loss of a mule laden with photographic plates of life at Tendu and Jyékundo.

At Ta-chien-lu Tafel determined to strike north through the mountains to Sung-pan Ting, a journey in which new perils were encountered in the swinging bridges which cross the foaming torrents. Even his dog proved faint-hearted when faced with these terrors, but more beasts were lost in swamps than from bridges. Persons who suffer from lack of excitement might do well to apply for posts as bridge-keepers in this country, where assistance to man and beast forms part of the keeper's duties. This part of Tafel's journey lay through the most exquisite scenery that can be formed by forests, water, and flowers at high altitudes, as described by Mrs. Bishop (vide *Geographical Journal*, vol. 10, 1897) in her account of her visit to Somoland, which lies a little east of Tafel's route.

On his way from Sung-pan Ting to Hsi-ning Fu Tafel struck north-west to discover the bend made by the Yellow River, which Watts and Birch are believed to have reached in 1900. This was found in lat. $33^{\circ} 33' N.$, long. $102^{\circ} 15' E.$, in a broad valley through which the river meandered in great curves, entirely out of character with the fierce torrent hidden in narrow ravines to which Tafel had been accustomed elsewhere. This discovery was the crowning exploit of his very eventful journey.

The book is full of most interesting information on the different sects of Lamaism which were met, of the customs of the people, their religious festivals, the habits of Mongols in encampments, of Tibetans in their villages, the attempts to introduce cultivation in high altitudes, of Chinese traders, Gholokh robbers, and Mohammedan fugitives from China. The adventures of travel and sport were most varied. The herds of wild yak recalled to mind in their numbers the buffalo of the American prairies; kyang and antelope abounded; eight bears were seen in a single day near Odontala; and troops of monkeys in the country between Jyékundo and Tachien-lu devastate the crops.

Of the journeys themselves and the additions made in them to geographical and geological science earlier articles in this *Journal* have given some details. But it is perhaps advisable to recall that the journeys were carried out on lines suggested by the late Baron von Richthofen in order to fill lacunæ in our knowledge of the Yellow River, Tsaidam, and the

west fringe of the Red Basin of Szechuen, and their results are embodied in Richthofen's 'China,' vol. 3. Among the physical features of the country to which attention is specially called by the author are the huge trenches in the Tala steppe, the erratic blocks and vast moraines in the Bayan Kara and other western ranges far distant from any existing glacier field, the existence of loess in widely separated districts in most of the country traversed, and the presence of sand-dunes among the morasses of Odontala, where holding ground for tents was difficult to find.

The photographs are excellent and most varied in spite of losses and many accidents, and the map (a second volume of maps of the journey in Tibet, in thirty-seven sheets, has been published, but is not in the library of the Society) which accompanies the second volume is well executed. Indeed, the only imperfection in the book is the index, which is not complete.

W. R. CARLES.

REVIEWS.

EUROPE.

Early Distribution and Valley-ward Movement of Population in South Britain.—

H. J. Fleure and Wallace E. Whitehouse, of the University College of Wales, Aberystwyth. Reprinted from *Archæologia Cambrensis*, April 1916.

THE authors of this paper give evidence to show that the areas of South Britain attractive to primitive man were "dry uplands with a porous subsoil, suitable pasture, and a convenient water and fuel supply, with access to raw material for the making of implements" (p. 110), such as are to be found on the Chalk Downs, the Derbyshire Moorlands, the Pennine Range, the Yorkshire Wolds, and the Malvern Hills. A map (p. 107) shows their conjectural distribution in Neolithic times, during which, as well as possibly during much later times, people must have lived "mostly either on the uplands exceeding 600 feet in height or along a coastal fringe," whereas "modern man in South Britain lives, as a general rule, below the 400-foot contour line" (pp. 23-24). Among evidences adduced for the valley-ward movements are facts indicating the survival of descendants of the Neolithic upland folk in inland valleys of those uplands and some features of "the distribution of old villages in several districts along hillsides sloping down from prehistoric uplands" (pp. 124-126). Nearly all the lower tracts in early times must have been forest or marsh, and the descent of man was prepared for by the downward retrogression of the forest, partly in consequence of man's action, partly through the natural extension of peat or heath on the forest fringe (pp. 128-131). The authors show no disposition to exaggerate the cogency of the evidence for their thesis, and state in conclusion that the purpose of their paper is "mainly to draw the attention of local archæologists and geographers to the importance of recording any evidences in custom or right or monument of the valley-ward movement, and to ask those who study records to collect mentions of forest clearings and of pastoral migrations and other related matters" (p. 139). At the end there is a bibliography containing forty-seven entries.

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