

a close practical acquaintance with that phase of geographical activity which affected military progress, and a thorough appreciation of its value. At a time when most generals regarded the work of the geographer in the military field as a harmless effort to acquire scientific information which might finally be embodied in a map for the benefit of an inquiring public, Lord Roberts was the first (if we except, perhaps, Lord Napier of Magdala and Sir Michael Bid-dulph) to realize the practical value of a scheme of military surveying which could give good account, not only of the country traversed by military operations, but of that which lay ahead and on either side of the actual route of an army; which could map out a field of action whilst that action was in progress, and put into the hands of the commander the detailed plan almost as soon as the action was finished. No appeal was ever made in vain to Lord Roberts for the necessary military assistance to support a reconnaissance or to safeguard a working party to a distant point of vantage; he believed that map knowledge was as essential to strategy as it might prove to be to political counsels when a campaign was over. He understood a map thoroughly, and was convinced that the mapmaker was his best intelligence officer. In that belief he maintained that accurate geographical knowledge was by no means the least of the assets secured by a successful campaign, and he strongly advocated that survey officers should form an integral part of the Headquarters Staff on the field and should hold their own proper military rank as such. But Lord Roberts' views on military efficiency and preparedness were not always popular in India any more than they were in England, and he did not succeed. The military officer employed in making the maps necessary for the conduct of a campaign on the Indian frontier when maps were non-existent still ranked as a civilian scientist. This, however, never affected the results of effectual backing by the chief of the expedition, and it is mainly to Lord Roberts that we owe the comprehensive map knowledge that we possess of the great Afghan uplands beyond the frontier hills from the Indus to Kabul and the Hindu Kush. If Lord Roberts was not often seen in the hall of the Royal Geographical Society, this was due (as he has himself told me) to the great variety of his active pursuits in life and to want of time rather than to want of interest in geography. If not an explorer himself he was keenly interested in exploration, and nothing pleased him more than to discuss the results of the latest geographical expedition.

T. H. HOLDICH.

CORRESPONDENCE.

The Tsang-po.

61, Melville St., Edinburgh, October 9, 1914.

CAPTAIN BAILEY'S stirring and withal modest account of his and Captain Morshead's enterprising dash for the unexplored section of the Tsang-po will command the admiration of all those who are interested in the problem which these two gallant officers have done so much to solve. Albeit a short section of 30 miles of the river, including the location of its confluence with the Po-Chu, still remains to be explored, its course cannot materially differ from that immediately above, viz. from Gyala to Churung Chu.

In the *Geogr. Journal* of May, 1913 (vol. 41, p. 501), *sub* Correspondence, I showed by a tabulated longitudinal section of the Tsang-po from its source to the point of its emergence into the plains of India as the Dihong-Brahmaputra,

that in the then unexplored 85 miles from Gyala downwards, where it cuts through the Himalayas, the drop by a succession of rapids would probably be at the average rate of 52 feet per mile, or 10 in 1000. This is fully borne out by the survey figures which Captain Bailey, on p. 351 of his paper, gives of the section from Pe to Gyala, Lagung, and the confluence of the Chimdru, for the actual total drop in the 139 miles works out 7072 feet, equal to an average fall of 50.9 feet per mile, or 9.6 in 1000.

By way of comparison with the Alps, the nearest analogy, though of course on a smaller scale, to the stupendous V-shaped gorges eroded by the Tsang-po between Gyala Peri and Namcha Barwa, of which Captain Bailey's beautiful photograph facing p. 356 gives a most revealing picture, will be found in the upper Rhone valley, between the Dent du Midi and the Dent des Morcles below Martigny, where the Rhone, like the Tsang-po, has cut the main mountain range at right angles, the comparative figures being as follows:

| | Tsang-Po. | Rhone. |
|--|--------------------------|----------------------------|
| On right | Namcha Barwa, 25,445 ft. | Dent des Morcles, 9700 ft. |
| On left | Gyala Peri, 23,460 ft. | Dent du Midi, 10,750 ft. |
| Aërial distance between summits | „ 12 miles | „ „ 6 miles. |
| Level of river | „ 9,000 ft. | „ „ 1500 ft. |
| Mean vertical depth of valley | „ 13,402 ft. | „ „ 8725 ft. |

The course of the upper Rhone presents another feature analogous to that of the Tsang-po in that its drop from the Rhone glacier to Martigny is 4240 feet in 80 miles, equal to 52 feet per mile or 10 in 1000, viz. almost the same average fall as that of the Tsang-po in the Himalaya section already referred to. The Tsang-po therefore does not materially differ from other rivers of an Alpine character which have cut their bed through mountain ranges at the point of least resistance. Shorn, not indeed of the beauty of its stupendous scenery, but only of the romance of its imaginary waterfalls, its course has proved to be a strictly normal one, interspersed with a series of rapids, as I, among others, ventured to predict.

Perhaps, in the sequel, Captain Bailey will be able to afford some information as to the nature of the rock-formations in the Gyala section of the river, and thus supplement his luminous paper.

There is in his expedition one important point which specially commends itself to the appreciation of linguists, namely, that his success, with his limited outfit and resources, was in no small degree due to his knowledge of the Tibetan language.

C. DU RICHE PRELLER.

**MEETINGS OF THE ROYAL GEOGRAPHICAL SOCIETY,
SESSION 1914-1915.**

First Meeting, November 9, 1914.—DOUGLAS W. FRESHFIELD, Esq.,
President, in the Chair.

ELECTIONS.—*Dr. Seymour Armstrong; Samuel David Bles; Arthur Bond; Captain N. P. Brooke (Leinster Regiment); Miss Susan Gearon; W. Howard*