SIR AUREL STEIN'S THIRD JOURNEY IN CENTRAL ASIA.

SIR AUREL STEIN publishes, in the August and September issues of the *Geographical Journal*, an account of his third journey in Central Asia.

Starting from Srinagar, in Kashmir, in July, 1913, the first point of interest reached was the Darel Valley, where, at his new capital, Gumarekot, Raja Pakhtun-wali, son of Mir Wali, the murderer of Hayward the explorer, has succeeded in building up a new kingdom, the last, perhaps, which India has seen founded on the old adventurous lines. The fine glacier scenery of this region is illustrated by the view of the Chillinji Glacier (Fig. 1). In this valley of Darel the explorer succeeded in identifying, at Poguch, the site of an ancient Buddhist monastery which the Chinese pilgrims specially mention on account of its miracle-working colossal image of Maitreya Buddha in wood. As an illustration of the continuity of Oriental cults, the site is now occupied and the healing business taken over by the tomb of Shaha-Khel Baba, a Mohammedan saint, who has inherited the miraculous powers of his Buddhist predecessors. Thence over very difficult ground the traveller pushed on through the Yasin Valley to the Darkof Pass, the scene of the remarkable exploit by which a Chinese force, dispatched in A.D. 747 from Kashgar against the Tibetans, succeeded in effecting an entry into Yasin and Gilgit.

FIG. 1.—Lowest portion of Chillinji Glacier, seen from west across Ashkuman River. From the *Geographical Journal*.

By the beginning of September the party reached the main head of the Hunza Valley, and marched thence to Tashkurghan and Kashgar, where, as usual, Sir G. Macartney, the British Consul-General, supplied liberal aid to the expedition. Since Sir Aurel Stein's last visit, owing to the Chinese revolution of 1911, the political situation had changed for the worse. Mandarins had been assassinated, and local revolts had resulted in a general weakening of Chinese authority. From Kashgar the goal was the region round the dried-up Lop-nor, in the extreme east of the Tarim Basin. Beyond Mural-Bashi, Stein reached the most forbidding region he had hitherto encountered in Taklamakan, and after meeting great difficulties he returned to his old station, Khotan. In this region many interesting discoveries were made. He succeeded in fixing the site of Hsuan-tsang's Pi-mo, the Pein of Marco Polo, at a Buddhist shrine near Domoku, and a large number of tablets inscribed in the Kharoshthi character, and dating from the first century of our era, was found.

Passing Charchan on New Year's Eve, 1914, he found that a band of so-called "gamblers," or vagrant outlaws, had overthrown Chinese authority. At Miran paintings of great interest, almost Hellenistic in style, were unearthed. Later on the ancient Chinese road into the Tarim Basin was identified, and further finds of decorated silk fabrics will contribute to the solution of the problem of origin in the designs discovered in an earlier journey near Tun-huang, usually attributed to Persian art of the Sassanian period. Equally interesting were the desiccated corpses of the old chief and his family, with their well-preserved arms and dresses. The illustration (Fig. 2) of an ancient fort near Lou-Lan gives a good idea of the sites which came under investigation.

The first portion of the narrative leaves the explorer on the western portion of the fortified Chinese line which was first examined in 1907. The fact that he could, after seven years' absence, identify his own footsteps and the footprints of his dog shows the permanence of records of travel in these desert wastes.

The second chapter of the story finds the traveller starting early in 1915 to examine the deserts which fringe on the south and east the

great barren hill region usually designated the Pei-shan Gobi. The site known as that of "The Thousand Buddhas," from which a large mass of material was collected in an earlier tour, in spite of an ill-considered seizure of manuscripts by the Chinese Government, was found capable of providing large additional hoards; while the survey of the ruins of Khara-Khoto established the identity of the site with Marco Polo's "city of Etzina." At the north foot of the T'ien-shan range he traced the original route through which all the historical migrations westward — Indo-Scythians, Huns, and Turks — must have passed. In May, 1915, the traveller returned to Kashgar, and it might have been supposed that the wayworn party would have been satisfied to return and convey the important collections of new material to India. But the indefatigable leader determined to take the opportunity of crossing the Pamirs to study the historical geography of that region. Here one of the most remarkable features of the landscape was the splendid glacier peaks of Muz-tagh, seen from the watershed, about 11,000 ft. high, on the Tars-agar Pass (Fig. 3). It is satisfactory to record that Sir Aurel Stein speaks in high terms of the results of the Russian Topographical Survey of the Pamirs, which had been in progress for some years before the outbreak of the war. At last his desire to visit Lake Victoria or Zor-Kol was satisfied, and thence he passed through Wakhan to Samarkand, and thence into Seistan, where, at Koh-i-Khwaja, he was lucky enough to discover the remains of a Buddhist sanctuary, the first ever traced on Iranian soil. Finally, passing through Baluchistan, he reached the Indian railway system at Nushki, by which he arrived at

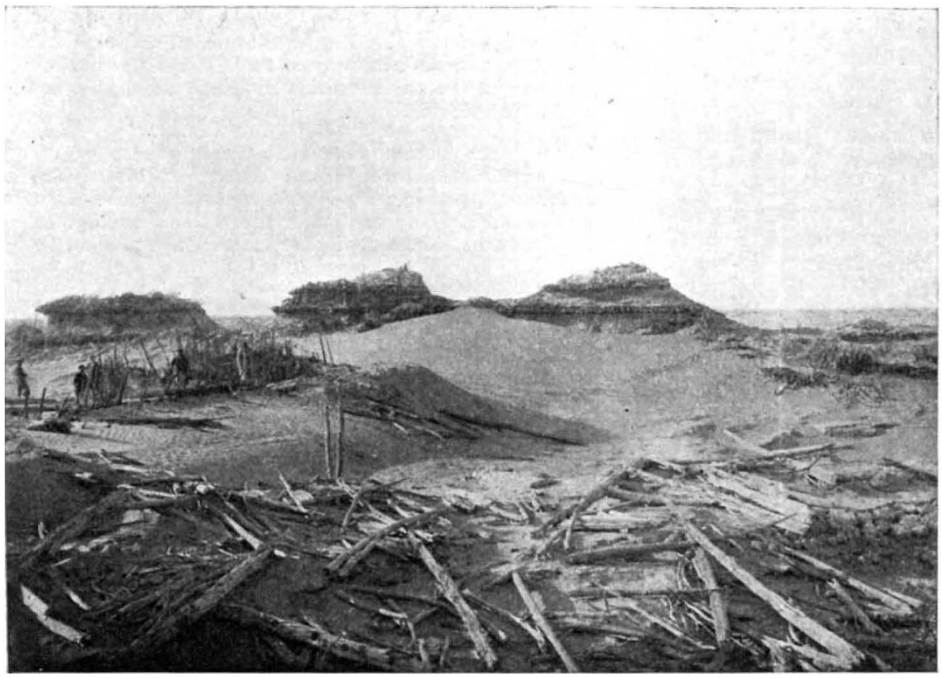

FIG. 2.—Interior of Ancient Fort with wind-breached portion o. Rampart, south-west of Lou-Lan site. From the *Geographical Journal.*

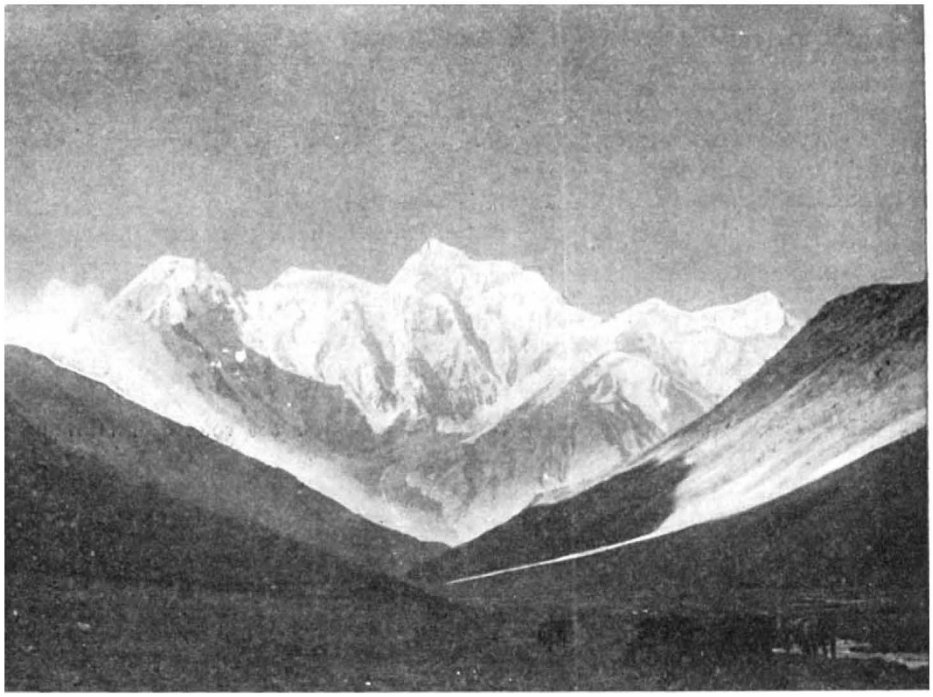

FIG. 3.—Glacier peaks of "Muz-tagh" above Muk-su, seen from watershed (about 11,000 ft.) on Tars-agar Pass. From the *Geographical Journal.*

Delhi to report the result of his journey to Lord Hardinge.

We cannot discuss the many interesting results of this remarkable journey. In the Pei-shan Sir Aurel Stein remarks that inscribed slips of wood, thrown out of ancient office-rooms, were often found in refuse-heaps, covered only by a few inches of gravel or *débris*, their preservation in such condition presupposing a remarkable dryness of climate during the last two thousand years. On the other hand, he points out that the final abandonment of the Khara-Khoto settlement was brought about by difficulties of irrigation, and "it was not possible to determine by conclusive evidence whether this failure of irrigation had been the result of desiccation in the Etsin-gol delta, or had been caused by some change in the river-course at canal-head, with which the settlement for some reason was unable to cope. But there seemed to me good reason to believe that the water-supply now reaching the delta during a few summer months would no longer suffice to assure adequate irrigation for the once cultivated area." Obviously the problem of the changes of climate during the historical period will need much further investigation before it can be finally solved, and in the present fragmentary state of our information the question should not be treated in a spirit of confident dogmatism.

It has been arranged that the Indian Government, which liberally contributed to the expenses of the journey, shall receive a considerable portion of the finds, which will be deposited in the new Museum of Indian Art and Ethnography which has been planned at Delhi. We are now so accustomed to the periodical reports of Sir Aurel Stein's explorations that we may fail to appreciate the remarkable courage, tenacity, and executive ability which he has shown in opening up a new region and in reconstructing a hitherto unknown chapter in the history of man.

NOTES.

MR. RUNCIMAN announced in the House of Commons on Tuesday that he had decided to combine the existing Commercial Intelligence Branch of the Board of Trade and the Exhibitions Branch into a new and enlarged Commercial Intelligence Department. The reorganisation of the department is now proceeding.

A ROYAL Commission has been appointed "to inquire into the supply of wheat and flour in the United Kingdom; to purchase, sell, and control the delivery of wheat and flour on behalf of his Majesty's Government; and generally to take such steps as may seem desirable for maintaining the supply." The names of the members of the Commission are:—The Earl of Crawford (chairman), Alan Garratt Anderson (vice-chairman), Sir Henry Rew, K.C.B., Sir George Saltmarsh, H. W. Patrick, Hugh Rathbone, Oswald Robinson, J. F. Beale, and T. B. Royden. Communications intended for the Commission should be addressed to the secretary at Trafalgar House, W.C.

THE Harveian oration of the Royal College of Physicians of London will be delivered on Wednesday, October 18, by Sir Thomas Barlow.

THE Thomas Hawksley lecture of the Institution of Mechanical Engineers will be delivered by Mr. H. E. Jones on Friday, November 3, upon the subject of "The Gas Engineer of the Last Century."

WE learn from the *Times* that Prof. W. von Waldeyer, professor of anatomy in the University of Berlin, has been raised to hereditary nobility on the occasion of his sixtieth birthday.

THE death is announced, at seventy-seven years of age, of Mr. Herbert Jones, known by his work in archæology, particularly with reference to the Roman occupation of Britain, and investigations relating to it at Silchester, Carlisle, Roxeter, and Greenwich.

DR. LE ROY C. COOLEY has died at his home at Poughkeepsie, N.Y., at the age of eighty-three. He was professor of physical science at the N.Y. State Normal College from 1860 to 1874. In the latter year he became professor of physics and chemistry at Vassar College. He held that post until 1894, when he was appointed to the chair of physics in the same institution. He retired in 1907. He was the author of several text-books of physics and chemistry. In 1899 he was elected president of the N.Y. State Science Teachers' Association.

THE death is announced, in his fifty-seventh year, of Dr. C. S. Prosser, head of the department of geology in the Ohio State University, with which he had been connected since 1899. He had previously occupied the chair of natural history at Washburn College, Topeka, Kansas, and of geology at Union College, N.Y. He was an assistant-geologist of the U.S. Geological Survey, and of the State Geological Surveys of Kansas, New York, Ohio, and Maryland. In addition to many official reports, he had published works on the stratigraphic geology and palæontology of Pennsylvania, New York, Kansas, Nebraska, Maryland, and Ohio, the Devonian of New York, Pennsylvania, and Maryland, and the Permian of Nebraska, Kansas, and Oklahoma.

WE regret to note in *Engineering* for October 6 the death, on October 1, in his seventy-sixth year, of Sir W. Theodore Doxford, at his residence, Grindon Hall, Sunderland. As a shipbuilder Sir Theodore greatly assisted in the development and improvement of cargo-carrying steamers. In 1895 the output of the works on the Wear with which his name is associated exceeded that of any other shipbuilding establishment in the country. Sir Theodore became a member of the council of the Institution of Naval Architects in 1896, and was president of the North-East Coast Institution of Engineers and Shipbuilders in 1886-87. He took an active part in the public life of the district in which his works were located, and was a Deputy-Lieutenant of the county of Durham.

MR. J. ACKWORTH PLOMMER has presented to the Geological Department of the British Museum an unusually fine portion of a Hippurite from the Chalk of Boughton-under-Blean, near Faversham, Kent. The specimen is part of the conical valve of the shell, which must have measured from 2 to 3 ft. in length, with a maximum diameter of about 8 in. The shell-substance is more than 2 in. in thickness, and of the usual open texture. The fossil seems to belong to a species, *Radiolites mortoni*, which is already known by fragments from the English Chalk, and by finer specimens from the Cambridge Greensand. The rarity of Hippurites in the Chalk is curious considering their immense abundance in the limestones of corresponding age in central and southern Europe, and in certain