

the Medical Research Council was administering both these services on behalf of the Ministry of Health, he worked during 1939-41 at the Council's head office, developing both services and engaging himself in a host of other war problems with which the Council was concerned. In addition, he was available to all and every scientific worker who, in the stress of war, questioned whether his services were properly employed, or required moral support for carrying on. Even in the midst of all this work, he gave the Croonian Lecture before the Royal Society in 1941, entitled "The Biology of Epidemics". Those who heard him may have felt that this was the swan song of his research experience, but none thought that it was the last time they would hear him, in public, develop a story in his clear, logical and arresting manner.

In 1941 the Agricultural Research Council asked Topley to become its secretary. Few would have considered such a change or such an exacting post unless prepared to sever their old scientific life completely, but Topley could never view it in this light. He believed that if he but drove himself harder, he could master his new duties and keep his old interests and friendships alive. How well he mastered his new work in the two years allotted to him it is not yet possible to judge, but it is clear that revolutionary changes in veterinary research were impending. How anxious he was not to lose his old interests is shown by the very active interest he took in the part that he considered the University of Cambridge should play in the medical, veterinary and bacteriological sciences.

As a man in science, Topley was outstanding. The mainspring of all his activity was devotion to science. Disregarding, save for a caustic remark, those whose scientific integrity was in doubt, he gave without stint his sympathy, understanding and help to all other workers. No matter what it cost him, nothing was too much trouble if his help would increase a worker's efficiency and devotion. He was probably happiest when the young men of science sought his aid, for he knew that the future of science was in their hands and that the young were slightly scared of him. He did not understand why, and nor did they, when after a short time they always spoke of him as "Bill". A talk with him was not easily forgotten, for the ideas bubbled out of his bold and original mind, and he left a sense of exhilaration and enthusiasm which lessened difficulties and made the goal so much more worth the effort. He had that rare quality of brain which, though severely critical, was essentially constructive. He stimulated the hesitant, and spurred on the keen. His honesty of purpose and loyalty continually drew new friends to him, and he excelled in bringing groups of workers together. Frequently responsible for the inception and planning of a research, and for the guidance of the worker throughout, his generous nature allowed no recognition of the fact in the published work.

No one would have used so profitably (or enjoyed more) the period of reconstruction after the War, to further his wide scientific interests and the welfare of scientific workers and their technical assistants. This has been denied him, but his influence lives in so many that much that he desired must come to pass.

As a man, Topley was at times delightfully simple, and at others curiously complex. He had a strong sense of loyalty; nothing gave him more pleasure than his election to an honorary fellowship of his old College, and no man was more staunch to his friends.

Yet he feared such loyalties lest they should hinder his service to science. He enjoyed recognition and praise for his election to the Royal Society, and the award of the Royal Medal of the Royal Society delighted him, yet he shunned these delights lest an undue taste for them should chance to warp his judgment. Severely critical as he was of others, he was much more critical of himself. No one was less in need of self-criticism, but this may have been responsible for the curious complexity which he sometimes exhibited.

Those of us who visited him in his home believe we hold the happiest memories. Topley was still the wise man of science, arguing and discussing; but he allowed more latitude to his exuberance, to his puckishness of mind, and he fitted so well into the delightful home background which his wife so unselfishly created for him.

Topley died suddenly at work in his office chair on January 21. Thus passed away, in a manner which he himself would have chosen, an outstanding man of his generation. A. N. DRURY.

Sir Aurel Stein, K.C.I.E., F.B.A.

SELDOM can there have been an instance of a task pursued so constantly, so indefatigably and with such zest through so long a life as by Sir Aurel Stein, who died on October 26, aged eighty. Oriental research, he acknowledged, had claimed him from his student days. More than that, the campaigns of Alexander the Great had fascinated him from first to last, so that he found a special satisfaction in following in his tracks, and, in some of his latest writings published since the beginning of the War in the *Geographical Journal*, turned again to the unravelling of his campaigns.

This pursuit of Oriental research and this fascination felt for the most dramatic incident in the intercourse of East with West, personal though they were, corresponded to a general urge in a period which has probably reached its close, so that, while from one point of view it is possible to regard his career as the fruit of his early self-preparation by work in the study and of persistent concentration on his aims, from another it was one of the main fruits of the impetus given to archaeological studies by the viceroyalty of Lord Curzon and the reform of the Archaeological Survey of India under Sir John Marshall. Though Stein was born in Budapest and educated in Vienna and Germany before first coming to England, his field-work was made possible by the Government of India.

It was under the Punjab Education Department that Stein first entered Indian Government Service, and while at Lahore he gave his spare time to the translation from the Sanskrit of Kalhana's "Chronicle of Kashmir" (*Rājatarāngini*). Meanwhile, the vast regions of Central Asia were attracting explorers from many lands. The journey that claimed most attention at the time was that of the Swede, Sven Hedin, during the years 1893-97. This was undertaken mainly as geographical exploration, but he also carried out some archaeological investigations in eastern Turkestan and on the Keriya River east of Khotan. It was, however, the linguistic interest of some birch-bark manuscripts brought back from Khotan in 1893 by Dutreuil de Rhins, to which Bühler directed Stein's attention, that led Stein in 1897 to plan his first journey to Central Asia. He found that antiquities were being brought in to Sir

George Macartney, then Consul-General at Kashgar, for transmission to Calcutta at the instance of Hoernle, who greatly encouraged Stein in his design of investigating their source. It was therefore from the first an archaeological rather than a geographical exploration on which Stein started. His first expedition to Central Asia was delayed until 1900, when he set out via Gilgit and Kashgar for a year in the region of the Taklamakan Desert.

It is impossible even to sketch here the course or routes of Stein's three Central Asian journeys. They have been fully reported from several points of view by Stein himself, in narrative volumes, in full-length reports and also in two excellent and compendious sketches, a paper given before the Royal Geographical Society with the title "Innermost Asia: its Geography as a Factor in History", and published in the *Geographical Journal* of May and June 1925, and the section on his own archaeological work in Central Asia which he contributed to an account of the work of the Archaeological Survey of India published by the India Society in 1939 under the title "Revealing India's Past". Here we can only attempt a general estimate of his method and its fruits. His research was historical and directed especially to the solution of one historical problem—the elucidation of the relations between China and the West, the capacity of the trade routes, the nature of the cultural influences passing along them, the periods which saw these routes most used and the causes which led to the abandonment of them and of the settlements along their course. A striking fact is that whereas he started out with the idea above all of tracing the eastward expansion of the cultural influences of the Hellenistic West, and of India, he came more and more to be impressed by the purpose, organizing power and tenacity of the Chinese who opened these routes and so long maintained them. Hellenistic influence was found to end in the early years of the fourth century A.D., but Indian influence was long continued by the passage of Chinese pilgrims to the Buddhist shrines in India. For the early period his most important discovery was of the elaborate organization of a Chinese *limes* in the Han period, protecting the route through the Tunhuang Oasis and beyond from the incursions of the nomads of the steppe to the north; and of the route, across the bed of the dried-up inland Sea of Lop, connecting this region with Kucha without passing through the relatively exposed Turfan region.

For the history of art Stein's most important finds were the textiles of the Astāna cemetery and the cache of paintings and manuscripts in the walled-up chamber at the Caves of the Thousand Buddhas, near Tun-huang. These with the wall paintings, transported from the sites of Bazaklik, Murtuk, Miran and elsewhere to the new Central Asian Antiquities Museum at New Delhi, have added so much to the material for the study of Buddhist painting in China in the T'ang period as to revolutionize it. Unfortunately, the wall paintings, though listed by Dr. Andrews in his Catalogue of 1933, have not yet been published, and are therefore not yet fully available to students. The Tun-huang paintings, on the other hand, have been fully catalogued by Mr. Arthur Waley, and the whole series was mounted at the British Museum and a great part exhibited there in 1914 on the occasion of the opening of the King Edward Building. The collection was afterwards divided between the British Museum and the Government of India for the Museum at New Delhi, but in

1921 the two Museums brought out jointly a portfolio of reproductions in colour of selected examples from both collections, with an introduction by Laurence Binyon and descriptions by Stein himself. Their importance has therefore been fully realized, though much work remains to be done on them from the stylistic and iconographical sides.

Stein went no more to Central Asia, except for a brief and abortive journey. But, though prevented from following up one line of research, he started on the archaeological survey of another great region. He had already traversed Sistan on his return from the third Central Asian expedition, and he now began a series of journeys which eventually covered the whole of that great bridge between the civilizations of East and West which leads from Mesopotamia, over the Iranian plateau, through Afghanistan, and so down into the Indus Valley; or across the Oxus into Turkestan. During all this period of more than twenty years he had two bases, his camp in the Kashmir highlands, and Corpus Christi College at Oxford, where the late president, Dr. P. S. Allen, the Erasmus scholar, always welcomed his friend on his visits to England. Of these journeys, the most important were the tours of the chalcolithic sites of Baluchistan in 1926–27 and 1927–28, and, since 1930, in south-western Persia. His accounts of the first were published by the Archaeological Survey of India in its series of Memoirs; the later journeys undertaken after his retirement from its service were chronicled in two large volumes. He also made expeditions to the Upper Indus region and followed the Roman frontier *limes* in Mesopotamia.

In all this wide area, Stein followed the course of ancient trade routes with his trained eye and indefatigable zeal. His pertinacity and complete absence of fear carried him over the wildest and most forbidding country. Indeed he was most truly himself when, with his surveying staff and train of porters alone, he viewed from some almost inaccessible spot ancient tracks and, as it were, a whole panorama of past history. Where written texts could illumine the records which he found on the ground, all the evidence which he found fell into a pattern. But in a region of such a long and complex history as he was now exploring, it was not to be expected that Stein should have been able to reach conclusions as definitive as in Central Asia. His explorations have mapped the sites which need to be studied: they call for the methods of the trained excavator and much comparative study before they can yield all their evidence.

Aurel Stein loved solitude. He was happy in a study, but happier in the wide open spaces. When he appeared in the lecture room, as he did in the United States at the Fogg Museum and elsewhere, and in London especially in the Royal Geographical Society's rooms, it was the nervous force of his small compact body and his piercing eye which impressed one with his indomitable spirit even more than the substance of what was said. At over eighty he was hoping to embark on a fresh field of exploration from Kabul, where death claimed him. It was his wish that his body should rest amid the beautiful scenery of Kashmir.

BASIL GRAY.

Dr. M. Radford

THE passing of Dr. Maitland Radford, medical officer of health of St. Pancras, at the age of fifty-nine, is of more than local or professional significance. He was a rationalist, reared in a progressive if not