

publication would commence and that soon he might be able to say *nunc dimittis*; but the volume appeared only at the end of 1948, some months after his death. It is a monumental work of 380 pages dealing only with metabolism, and it represents a most comprehensive and cautiously critical summary of the literature. Unfortunately, the difficulties of keeping up with the current foreign literature were such that, by 1945, only papers published up to 1941 could be included. Nevertheless, the book is unique in its scope and execution, and we can only hope that the subsequent volumes will also see the light of day; according to Kusnezov's plan, there should be two more volumes, dealing with sense physiology, locomotion, humoral and nervous regulation and integration, as well as the physiological evolution of insects.

Kusnezov's competent translations of such outstanding foreign books as Lampert's "Atlas of Micro-lepidoptera", Wigglesworth's "Introduction to Insect Physiology" and D. Sharp's volume on "Insects" in the Cambridge Natural History Series were important contributions to the development of Russian entomology. Sharp's "Insects" was supplemented by many new data, so that the Russian edition, published in 1910, is actually more complete and better illustrated than the original.

Throughout his long career at the University and the Academy, Kusnezov was a stimulating teacher, wise counsellor and an exacting, but never unfair, critic of more than one generation of Russian entomologists. Budding entomologists, of whom the present writer was one, used to go to Nikolai Jakovlevich with all their problems of general interest, and many of us learned from him the need for a broader approach to entomology than was usual at the time.

Kusnezov had many foreign connexions by correspondence, and he also visited Germany, England and North America in 1907. In recent years, he felt deeply the isolation from Western colleagues; in his last letter to me he said how much he would have liked once more to see England and the British Museum, where he worked forty years ago.

B. P. UVAROV

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Mr. A. D. Combe

By the sudden and unexpected death of A. D. Combe on May 23, at the age of fifty-five, African geology has lost one of its most striking and colourful personalities, and a career of brilliant achievement in Uganda and the adjoining territories has been unhappily cut short.

Born in Adelaide in 1893, Combe was educated in Sydney, to which city his family had moved during his early years. While yet a boy he developed the keen interest in mineralogy which determined his choice of profession. Possessed of a high degree of independence, he first sought practical experience in mines and assay offices. During this period he worked in several of the most celebrated mines of Australia, afterwards returning to Sydney to study mining and geology at the Sydney Technical School. In later years it was a matter of keen regret to him that he had not pursued a full university course. Nevertheless, his reputation was such that in 1921 he was appointed to the Geological Survey of Uganda as a field geologist. He became senior geologist in 1936 and assistant director in 1949. Combe was a bachelor

whose life was passionately devoted to geological discovery. His other interests, closely related to the first, were photography and camping technique, in both of which he was an acknowledged adept. Dinner with Combe in the wilds was a social occasion that became a treasured memory.

Most of Combe's earlier years in Uganda, as well as parts of the later ones, were spent in mapping the tin- and gold-bearing areas of the south-west of the Protectorate. Although the primary object of this work was necessarily economic, Combe soon revealed his outstanding abilities and varied interests by making what are now recognized as classic investigations of the Pre-Cambrian Karagwe-Ankolean System and of the comparatively recent volcanic field of Bufumbira. His name will always be associated with these highlights of Central African geology because of the magnificent memoirs for which he was mainly responsible: "The Geology of South-west Ankole" (1932), with its authoritative account of the Karagwe-Ankolean sediments, their tectonics and metamorphism and the associated granites and ore-deposits; and "The Volcanic Field of Bufumbira, Part 1", with its detailed map and descriptions of dozens of volcanoes and scores of lava flows.

It was in connexion with the potash-rich lavas of the Western Rift Valley that began, in 1929, my long collaboration with Combe. Since then, thousands of specimens collected by Combe from Bufumbira and Birunga, and from Ruwenzori and its peripheral volcanic fields, which he surveyed in detail in later years, have been sent for petrological and geochemical investigation. The Bufumbira results have already been published in Part 2 (1937) of the above-mentioned memoir, and it is expected that the unique rocks of the vents around Ruwenzori will eventually be described in a joint memoir which will be a lasting monument to Combe's insight as a volcanologist. Most of Combe's latest work was concerned with the many problems of Pre-Cambrian correlation in East and Central Africa. No one was better equipped for this difficult task, for not only had he a background of unrivalled experience in the Karagwe-Ankolean and Toro Systems in Uganda, but also he had travelled widely in all the adjoining territories, and even far beyond, to study at first hand the critical exposures of a long series of 'key' areas. It is to be hoped that his numerous unpublished reports may yet be gathered together in the projected memoir on which he had been working shortly before his untimely death.

Dr. K. A. Davies, director of the Geological Survey of Uganda, to whom I am indebted for some of the details of Combe's life, adds the following tribute to his old colleague: "His encyclopædic memory, his wealth of geological experience and his flair for the recognition of minerals became proverbial throughout East and Central Africa. As a surveyor and collector, few could emulate his care and completeness. During periods of leave he visited mines and studied geology in many parts of the globe, and everywhere he made friendships that endured. Africa in particular will grievously miss this huge-statured and good-natured geologist, who impressed everyone with his forthright manner and who had abundantly earned an enviable reputation for being always right." In the history of African geology, Combe will always be given an honoured place for his solid contributions to Pre-Cambrian and economic geology, and to the vulcanology of the Western Rift.

ARTHUR HOLMES