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CHARLES MORLEY WENYON

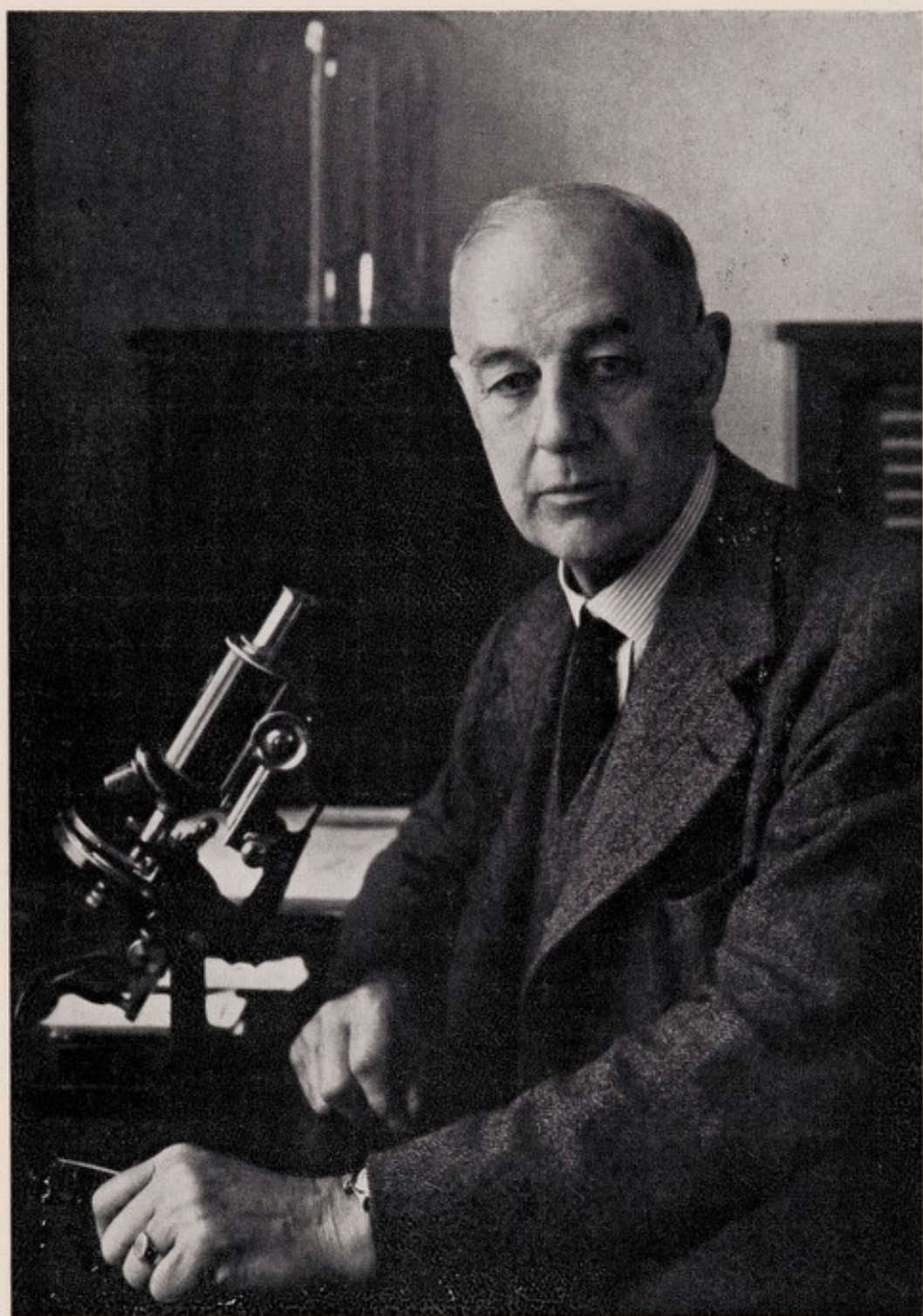
1878—1948





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C. M. Wenyon

CHARLES MORLEY WENYON

1878-1948

THE death of CHARLES MORLEY WENYON on 24 October 1948, removed from the field of tropical medicine and protozoology one of its foremost exponents—a man whose work and personality have been familiar to fellow-workers throughout the world for nearly half a century.

Wenyon was born at Liverpool on 24 March 1878. He was the eldest son of Charles Wenyon, M.D., and his wife Eliza Morley *née* Gittins, in a family of three sons and two daughters. His father came from Wednesbury, Staffordshire, and his mother—from whom he derived the name Morley—from Wrexham, Denbighshire. The medical profession was represented in the family also by a maternal great uncle, Dr George Morley Harrison, and a paternal uncle, Dr Edwin J. Wenyon.

In early infancy (1880) he was taken with the rest of the family to China, where his father was a pioneer medical missionary in charge of a hospital which he established at Fatshan, near Canton. Till the age of fourteen Charles and the other children were educated by their father at home. Frequent visits to the hospital probably first turned his mind to medicine; and his father did much to stimulate interest in scientific pursuits by giving the elder children lessons in elementary biology, chemistry and astronomy, and by encouraging them to keep numerous animal pets.

In 1892 the three elder children were sent home to England for their further education. Charles and one of his brothers went to Kingswood School, Bath, where he distinguished himself in sports and games, and was in the First XI at cricket and the First XV at Rugby. On leaving school he obtained a Yorkshire County Scholarship in arts, with which he entered Yorkshire College, Leeds—at that time a constituent college of Victoria University, Manchester. Here he studied zoology under Professor L. C. Miall and physiology under Professor De Burgh Birch, and was awarded the University Prize in biology. After a year at Leeds he transferred to London (1899), where he continued his studies at University College. He again took zoology and physiology as his special subjects, under Professors E. A. Minchin and E. H. Starling respectively, and attended lectures in chemistry given by Professor William Pope at Goldsmiths' College. He graduated B.Sc., with first-class honours in zoology and physiology, in 1901, and was awarded medals in both these subjects and a scholarship which enabled him to enter Guy's Hospital Medical School, where he completed his medical training. He won the Golding Bird Gold Medal in Bacteriology, and qualified M.B., B.Sc., with honours in physiology and

anatomy, in 1904. Shortly afterwards he bought a general practice in Camberwell, London, for the princely sum of £15. However, his career as general practitioner lasted only a few months, for his true interest lay in a different direction. At that time it had just been decided to start a Protozoological Department at the London School of Tropical Medicine; so Wenyon immediately made application and was appointed as head in May 1905.

The School of Tropical Medicine, then situated at the Royal Albert Dock, had been founded only six years previously by Patrick Manson. Before 1905 the teaching of medical zoology was conducted by the Superintendent: but as the work proved to be too much for one man it was decided to establish separate departments of helminthology, protozoology and—a little later—entomology. Wenyon was thus the first holder of the post of Protozoologist and Lecturer in charge of one of the new departments. The Superintendent of the School at that period was Dr G. Carmichael Low, with whom Wenyon became closely associated for many years—first at the School and subsequently in the Royal Society of Tropical Medicine and Hygiene. His dual training in zoology and medicine provided the right background for his new duties, though as yet he had no practical experience of protozoology; for Minchin, under whom he studied zoology at University College, did not himself finally specialize in this subject till 1906, when he was appointed the first—and unfortunately the last—holder of a London University Professorship of Protozoology tenable at the Lister Institute. Sir Patrick Manson, who spent so many years of his working life abroad, considered that Wenyon, whom he had singled out as one of his lieutenants, should have opportunities—by study in continental laboratories and by actual field work in tropical countries—of making himself master of his subject before taking a more active part in teaching. Wenyon availed himself fully of these opportunities and travelled widely during the nine years of his service at the School; in fact, in the aggregate, about half of this period was spent in researches abroad. The experience thus gained proved invaluable, and the scientific material which he collected formed the subject-matter of many important publications.

Part of the year 1906 was spent by Wenyon at the Institut Pasteur in Paris, where he studied protozoology under Félix Mesnil and investigated the action of drugs on trypanosomes. He also then discovered in the blood of mice what appeared to be a new spirochaete—a parasite which he named *Spirochaeta muris* but which later proved to be identical with *Spirillum minus* of rat-bite fever. During the rest of 1906 and at the beginning of 1907 Wenyon worked under Richard Hertwig at the Zoological Institute in Munich. Here he carried out researches on the intestinal protozoa of mice and gave the first detailed description of *Entamoeba muris*, though his account of its life-cycle was unfortunately influenced by Schaudinn's famous misinterpretations of the cystic development of *E. coli*.

With the protozoological training received in Paris and Munich Wenyon was now well equipped to undertake independent field investigations in the tropics. In 1907 he went out to the Sudan, having been seconded for service as

Travelling Pathologist and Protozoologist to the Wellcome Research Laboratories at the Gordon Memorial College in Khartoum, which was then under the directorship of Dr (later Sir) Andrew Balfour. He spent a year in the Sudan, travelling in a floating laboratory on the upper reaches of the Nile and making observations on the parasites of man and animals. This expedition provided him with unrivalled opportunities of which he made the fullest use. Moreover, the meeting with Balfour was the beginning of a friendly association which profoundly influenced his subsequent career.

Returning to England in 1908, Wenyon resumed his duties at the School and studied the material collected in the Sudan. Interesting observations were recorded on trypanosomiasis of domestic animals, and on herpetomonad flagellates in biting flies; while numerous blood parasites, including new forms from various vertebrate animals, were described. The results of these investigations were published in a beautifully illustrated memoir in 1909 (3rd *Report of the Wellcome Research Laboratories*). The next two years, spent in London, were devoted chiefly to studies of the human intestinal protozoa. Under the new name *Macrostoma mesnili* he described (1910) a human flagellate, now known as *Chilomastix mesnili*, which had previously been reported by other workers under different names. Much of his subsequent work in the years preceding the First World War was concerned with various aspects of leishmaniasis, especially the transmission of oriental sore and kala-azar, regarding which there was then much confusion. These problems were investigated by him in Bagdad (1910), in Syria (1911) and in Malta (1913), which he visited on missions from the School. He carried out numerous experiments with a view to determining the insect vectors of oriental sore. Patton had previously demonstrated that *Leishmania donovani* developed in bed-bugs fed on cases of kala-azar, and he regarded this insect as the intermediate host. Although Wenyon found that *L. tropica* was capable of developing not only in the bed-bug but also in some mosquitoes, he rightly concluded that there was no evidence to incriminate these insects as the natural transmitters of leishmaniasis. From the outset he was convinced, on epidemiological grounds, that sandflies (*Phlebotomus*) were the intermediate hosts of oriental sore. He carried out numerous experiments on the transmission of this disease, feeding these insects on sores and later allowing them to bite his own arm. However, the results were always negative, for various circumstances beyond his control unfortunately prevented him from carrying out such observations on a larger scale. While in Aleppo he actually discovered that a certain percentage of wild sandflies harboured leptomonad flagellates, which might actually have been the developmental stages of *Leishmania*.

Though the credit of proving the transmission of leishmaniasis by sandflies belongs to others, Wenyon's pioneer researches and critical reviews of the existing data did much to clear the path for his successors in this field. He made a careful comparison of the Indian and Mediterranean types of kala-azar, and concluded that there was no essential difference between them—a view now accepted by most authorities. He also drew attention to the identity of the

human and canine forms of kala-azar in the Mediterranean area, and came to the conclusion that *L. donovani* was responsible for all forms of visceral leishmaniasis in man and dog. The contemporary state of knowledge concerning the leishmaniasis was fully analyzed in the *Kala-Azar Bulletin* (1911-1912), a publication for the writing and editing of which he was wholly responsible. In subsequent years (1922, 1928, 1932) he wrote a number of important critical reviews devoted to the same subject. But while at the School his time was divided between expeditions abroad and conducting classes in London; and as he was an excellent teacher he became very popular both with his students and with his colleagues, who still speak of him with affection and respect.

In 1914 Wenyon resigned from the School of Tropical Medicine to take up an appointment as Director of Research in the Tropics at the Wellcome Bureau of Scientific Research, London, under the directorship of his old friend Andrew Balfour of Khartoum fame. Wenyon's association with the Wellcome Foundation lasted to the end of his days. His decision to give up an academic career and accept a post with a commercial firm requires some explanation. Mr (later Sir) Henry S. Wellcome, the head of the well-known chemical manufacturing firm of Burroughs Wellcome & Co., was one of those 'inspired millionaires' who, in his own words, 'chose to spend his wealth in supporting research as another man might choose to spend his on a racing-stable'. In 1913 he founded the Wellcome Bureau of Scientific Research, which was to be a scientific institution devoted to fundamental research in problems connected with tropical medicine and allied subjects, including all branches of parasitology. Its other function was to serve as an information centre for anyone interested in these subjects, as well as to provide instruction and research facilities to individual workers. Affiliated with the Bureau was a Museum of Medical Science. Though its funds were derived from the commercial activities of the firm, the Bureau was otherwise independent and had a separate administration. The research work carried out in its laboratories was not subordinated to trading interests, and was not intended to contribute to the revenue of the firm—except in the case of discoveries which might be capable of commercial development. In accordance with this policy, the scientific staff were at liberty to follow their own lines of research and, like their academic colleagues, they were free to publish the results of their investigations. The Bureau was thus a privately endowed scientific institute with a status similar to that of the Lister Institute in this country and the Institut Pasteur in Paris. Consequently Wenyon's transfer to the Bureau did not adversely affect the scope and character of his scientific work. On the contrary, the absence of teaching duties left more time for research; and as the School of Tropical Medicine and the Bureau had similar interests, there was always a close personal contact between the scientific staffs of the two institutions.

Shortly after his appointment the First World War broke out, and the Wellcome Bureau was placed at the disposal of the War Office. In 1915, under a scheme initiated by the Medical Research Committee and the Royal Society, he organized classes for training protozoologists in the diagnosis of intestinal

protozoal infections; but these classes were taken over by Clifford Dobell in 1916, when Wenyon became a member of the Medical Advisory Committee in the Near East with the rank of Lieutenant-Colonel, R.A.M.C. In 1916 and 1917 this Committee, presided over by Lieutenant-Colonel Andrew Balfour and popularly known in medical circles as 'Balfour's travelling circus', visited Egypt, India and Mesopotamia, investigating and advising on tropical diseases. Its findings were published in the *Reports to the Medical Advisory Committee*.

To this period belong some of Wenyon's most important contributions to our knowledge of human intestinal protozoa. During the earlier phases of the war most cases of dysentery occurring among the troops invalided from Gallipoli were regarded as amoebic, not bacillary. However, investigations on the incidence of amoebic infection which he carried out in England (1915) and later (1916), with F. W. O'Connor, in Egypt, exposed the fallacy of this view. They drew attention to the prevalence among the troops and native inhabitants of symptomless carriers, thus confirming that the mere finding of cysts of *Entamoeba histolytica* does not justify a diagnosis of 'amoebic dysentery'. With O'Connor he was the first to indicate the existence in *E. histolytica* of races differing in the size of their cysts. He also demonstrated experimentally the viability of the cysts of this amoeba after passage through the gut of the house-fly—which accounts for the fly-borne method of dissemination of amoebiasis. Before the war our knowledge of the protozoal fauna of the human intestine was very incomplete, for it was generally believed that man harboured only two species of amoebae, *E. histolytica* and *E. coli*. Wenyon, with O'Connor, was the first to describe the non-pathogenic form *Endolimax nana* (under the name *Entamoeba nana*). He also gave the first account of the so-called 'iodine cysts', which Dobell later recognized as belonging to *Iodamoeba bütschlii*. Some of the gaps in our knowledge of the intestinal flagellates were also filled by these observers, who discovered *Embadomonas intestinalis*, placing it originally in a new genus *Waskia*, and described *Tricercomonas intestinalis*, now generally known as *Enteromonas hominis*. Wenyon was also the first to give a careful account of the oocysts of the human coccidium which he later named *Isospora belli*, believing it to be distinct from *I. hominis*. In a number of papers appearing between 1914 and 1918 he also threw much light on the morphology, life-histories and host-parasite relations of other human intestinal protozoa, and thus provided a sound basis for their differential diagnosis. Some of the most important investigations of that period were brought together in 1918 in a book (with O'Connor) on *Human intestinal Protozoa in the Near East*. He also took part in the compilation of the protozoological sections in the first edition (1917)—and in the revision of subsequent editions—of the War Office *Memoranda on medical diseases in tropical and subtropical areas*, a book which proved a valuable guide to medical officers in the two world wars.

From 1917 to 1919 Wenyon was in Macedonia with the British Salonika Force, acting as Adviser in Malaria and O.C. Malaria Inquiry Laboratory, situated in Salonika. Here he carried out important investigations on the epidemiology, transmission and treatment of malaria, introducing quinine

prophylaxis and organizing an anti-mosquito campaign. His experimental studies on the development of malaria parasites in mosquitoes at low temperatures helped to elucidate the behaviour of the parasite in the hibernating vector and to account for the occurrence of outbreaks of benign tertian malaria in the spring. This was shown to be due to the fact that the development of the oocysts was arrested during the cold season and was resumed when the temperature rose again. In 1919 Wenyon—now with the rank of Colonel—left Macedonia and, as Consulting Bacteriologist and Pathologist to the Army of the Black Sea, proceeded to the Caucasus, where he continued his investigations on malaria, returning to England in 1920. For his distinguished war service he was awarded the C.M.G. and C.B.E.

The termination of the war was also the end of the first period of Wenyon's career, much of which was spent abroad. We now find him again at the Wellcome Bureau of Scientific Research, this time settled in London for good. In 1920 and 1921 he held the Plimmer Fellowship in Pathology. In 1924, on the resignation of Sir Andrew Balfour, he succeeded him as Director-in-Chief of the Wellcome Bureau. When in 1932 the Bureau, together with the Chemical Research Laboratories, the Museum of Medical Science and the Historical Medical Museum, became a constituent part of the Wellcome Research Institution, representing the scientific section of the Wellcome Foundation, Wenyon became Director-in-Chief of the Institution and Director of Research to the Foundation.

On his return to England Wenyon had conceived the idea of writing a comprehensive treatise on protozoology. For some years this formidable work occupied most of his time, but he also found opportunities to carry out a number of original investigations, among which his revision of the coccidia of cats and dogs, and their bearing upon the status of the human *Isospora*, should be noted. He separated, under the name *I. belli*, the parasite described by him in 1915 from the one known as *I. hominis*, and suggested that the latter might be a canine coccidium (*I. bigemina*) accidentally infecting man or passing unchanged through the alimentary canal.

Wenyon's well-known *Protozoology*, a monumental treatise in two volumes, profusely illustrated, was published in 1926. This was his outstanding work—his *opus magnum*. This manual, giving an account of all the protozoa of medical, veterinary and general parasitological importance, was the best and most comprehensive treatise on the subject ever published in any language. In reviewing it, Clifford Dobell wrote: 'It is . . . safe to prophesy that no future worker . . . will be able to conduct his researches without frequent reference to these two volumes. In compiling them the author has laid all students of the parasitic protozoa under a deep obligation; and no working protozoologist can afford to be without it.' And indeed, since its publication and up to the present, Wenyon's *Protozoology*—though now in places out of date—has been an indispensable reference book for all students of this subject, who regard it not only as a valuable guide but also as a source of inspiration in their researches. In the following year (1927) Wenyon was elected to the Fellowship of the Royal Society.

The increase of administrative duties connected with the direction of all the research activities of the Wellcome Foundation, service on various scientific committees, and his interest in the Royal Society of Tropical Medicine and Hygiene, soon left little time for original research work. However, Wenyon's vast experience continued to be fully at the disposal of others. He showed a keen interest in the work of his associates and was always ready to help the numerous visitors from all over the world who sought his advice and were frequently provided with accommodation to pursue their studies in the laboratories of the Bureau. Though he did not create a 'school', many workers in different countries are indebted to him for guidance. The present writer is perhaps his only real pupil, having been intimately associated with him for many years. He can vividly recall the many stimulating discussions from which he learnt more than he could ever have acquired from books. Moreover, to Wenyon largely belongs the credit of raising the status of the Wellcome Bureau of Scientific Research (now merged in the Wellcome Laboratories of Tropical Medicine) from a modest information centre to a scientific institute of international standing which took its place alongside the London and Liverpool Schools of Tropical Medicine as one of the most important centres of tropical medical and parasitological research in the world. The unique position of the Bureau, as an autonomous research institute within the framework of an industrial concern, was jealously guarded by Wenyon, who was firmly opposed to any encroachment of business interests on its scientific activities.

In 1944 Wenyon retired from his directorship but maintained his connexion with the Wellcome Foundation as consultant in tropical medicine, with a laboratory placed at his disposal. He was now free from administrative duties and able to devote more time to his microscope and his life's interest in protozoology. It was also hoped that he would take this opportunity to prepare a new edition of his *Protozoology*, but—as he later confessed to the writer—he felt that the strain would be too great in his failing health. Since 1932, when he had his first serious heart attack, he bore with fortitude and patience the effects of this disability which ultimately led to his death.

Among numerous other activities should be specially mentioned his prominent share in the development of the Royal Society of Tropical Medicine and Hygiene, which, in the words of a past President, Sir Philip Manson-Bahr, will 'long continue to flourish as a monument to the genius of Charles Morley Wenyon'. He joined the Society in 1908, a year after its foundation, and remained an active fellow for the next forty years. In 1920 he was elected joint honorary secretary, an office which he held for a quarter of a century: and it may be stated without exaggeration that the Society owes its present position in the medical world and its flourishing condition to the devotion and enthusiasm with which he performed his duties. Throughout this period presidents came and went, but Wenyon remained at the helm as the guiding spirit of the Society, taking a leading part in the organization of the meetings, in the selection of papers and in its other activities. It was largely through his energy and perseverance that the Society was able to acquire a permanent home. Wenyon

completely reorganized the *Transactions* of the Society, which thus became an important medical journal of international standing. In 1945 he was elected President of the Society, a post which he held till 1947. In the induction address, his predecessor, Sir Harold Scott, rightly remarked: 'This is a belated election: Dr Wenyon should have been President a dozen years ago; but time after time he has refused it for altruistic reasons, saying that he felt he could be of more use to the Society by staying as its Honorary Secretary and piloting others along the way in which they should go. At long last he has been prevailed upon to take his rightful place.' Wenyon took a prominent part in the meetings of the Society, contributing many original observations to the discussions which followed the reading of papers (see accompanying bibliography). During his tenure of office he received loyal assistance from his sister, Miss Mildred Wenyon, then secretary of the Society, who shares with her brother the credit for its success and for the high standard attained by its journal.

As editor of the *Kala-Azar Bulletin* and subsequently sectional editor of the *Tropical Diseases Bulletin*, during thirty-six years Wenyon contributed authoritative critical reviews of the world literature on leishmaniasis and other protozoal diseases.

Wenyon was essentially realistic and practical—an attitude which was reflected in his approach to scientific problems, to his administrative duties, and to other activities. By nature he was cheerful and humorous, modest and unaffected, and his tastes were simple. He was an enthusiastic worker himself, and therefore took a keen interest in the work of his associates: and as he was fond of polemics he would often provoke his opponent with some favourite paradox, though always showing tolerance and understanding. Sir William Mac Arthur writes: 'His abounding vitality served to fire his own enthusiasm, and, overflowing in some magic fashion, transferred its influence to all with whom he came into contact. . . . Free himself from any thought of self-aggrandizement, he was untiringly generous in helping the deserving who turned to him for aid—but he did not suffer fools gladly and the pretentious poseur he could not endure.' As a director of a scientific institute he was unequalled, for he created an atmosphere of happy comradeship in which he was *primus inter pares*. He was entirely lacking in intellectual snobbery, and everybody, whatever their station in life or in the hierarchy, felt at ease with 'C. M. W.'. Among his friends he was also noted as a raconteur of a particularly individual style.

During his long career Wenyon served with distinction on numerous committees. He was at various times a member of the Scientific Advisory Committee to the Metropolitan Asylums Board of the London County Council; of the Colonial Medical Research Committee, Colonial Office; of the Physiology and Tropical Diseases Committees, Royal Society; of the Council of the Royal Society of Medicine; of the East Africa Sub-committee of the Tsetse Fly Committee of the Economic Advisory Council; of the Research Defence Society; and of the Tropical Medical Research Committee of the Medical Research Council.

Wenyon's work was recognized by many awards and honours at home and abroad. In 1927 he was awarded the Makdougall-Brisbane Prize of the Royal Society of Edinburgh for scientific merit; in 1929 the Mary Kingsley Medal of the Liverpool School of Tropical Medicine; in 1933 he was appointed Officier de la Légion d'Honneur; in 1934 he was elected Honorary Member of the Société Belge de Médecine Tropicale; in 1945 Honorary Life Member of the New York Academy of Sciences; in 1946 he was awarded the Theobald Smith Gold Medal of the American Academy of Tropical Medicine, of which he had been an Honorary Member since its foundation in 1934; in 1947 he was elected Honorary Fellow of the Royal Society of Medicine and Honorary Member of the Société de Pathologie Exotique, and was awarded the Manson Medal of the Royal Society of Tropical Medicine and Hygiene.

Wenyon died at his home in London on Sunday 24 October 1948, of heart failure, following a short attack of broncho-pneumonia. He was married twice, and had three children—a son and two daughters.

During his life appreciative notices of Wenyon appeared in *Trans. R. Soc. Trop. Med. Hyg.* (1945), **39**, 93 (induction as President); *ibid.* **39**, 349 (bestowal of Theobald Smith Medal); *ibid.* (1947), **41**, 182 (bestowal of Manson Medal); in [*Wellcome*] *Foundation News* (1947), **2**, (2), 4 (by C. J. Hackett—with portrait); and in *Proc. Roy. Soc.* (1948), *A*, **193**, 435 (by C. H. Kellaway). Under the title 'Les auteurs qui travaillent sur les leishmanioses', there appears a contemporary portrait of Wenyon in *Rapport sur les Travaux de la Mission Scientifique pour les Recherches des Maladies tropicales humaines et animales du Turkestan en 1913*, Vol. I: Leishmanioses [Pl. 5, fig. 48] (by W. L. Yakimoff), Petrograd, 1915 [in Russian]. A later portrait was printed in *Ann. Trop. Med. Parasit.* (1943), **37** (Frontispiece). Since Wenyon's death noteworthy obituaries and tributes have been published in *The Times* (28/10/48: by [W. J. Bishop]); in *Brit. Med. J.* (1948), **2**, 408 (by G. M. F[indlay]); in *Lancet* (1948), **2**, 750 (by C. A. H[oare])—with portrait and brief notes by others; in *Nature* (1948), **162**, 840 (by C. A. Hoare); in *Trans. R. Soc. Trop. Med. Hyg.* (1948), **42**, 303 (by [Sir W. P. Mac Arthur])—with portrait; *ibid.* p. 309 (by Sir P. Manson-Bahr); in *Bull. Soc. Path. Exot.* (1949), **42**, 5 (by E. Roubaud); in *Ann. Soc. Belge Méd. Trop.* (1949), **28**, 385 (by J. Rodhain); in *J. Parasit.* (1949), **35**, 322 (by W. H. Taliaferro—with portrait).

The writer gratefully acknowledges the valuable help received in the preparation of Wenyon's biography and bibliography from the following: Miss Isabel Bellis, Mr W. J. Bishop, Dr Clifford Dobell, F.R.S., Dr G. Carmichael Low, Sir Philip Manson-Bahr, Mr F. N. L. Poynter and Miss Mildred Wenyon.

CECIL A. HOARE

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