John Alexander Sinton, 1884-1956

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JOHN ALEXANDER SINTON
1884-1956

Few can have had so varied experiences in life and at the same time contributed so greatly to knowledge in a field of science as Sinton. Educated and taking his medical qualifications in Northern Ireland, and first in every examination he took in school or university, entering the Indian Medical Service, again the first on his batch, Sinton was to see active service in both world wars. In the first, as medical officer to an Indian cavalry regiment on active service in the Mesopotamian Expeditionary Force, he received the award of the Victoria Cross for conspicuous bravery and devotion to duty during an action at Sheik Sa’ad in 1916, thus having the unique distinction of being the only bearer of this honour to be also a Fellow of the Royal Society. Later in the Medical Research Department of the Indian Medical Service he was appointed the first Director of the Malaria Survey of India (now the Malaria Institute of India) an institution that under Sinton’s direction and that of those following him was to become one of the chief centres of malaria research in the world. Then after retirement, but being still on the reserve of officers of the Service, he was in the second world war again recalled to military service and as Consultant Malariologist in several campaigns again saw active service in many countries, travelling extensively in India, the Middle East and Africa and later, as Adviser on Malaria to the War Office, again to travel and advise on measures against malaria, visiting Australia, New Guinea, the Solomon Islands and other areas. Finally retiring to his native Ulster at the age of 60 he took an active part in academic and public affairs and besides other activities was Pro-Chancellor of his University and in 1953 High Sheriff of Co. Tyrone.

It was to research, however, that Sinton’s inclinations impelled him and throughout his career he never ceased to make contributions to medical science, publishing some 200 scientific papers, most of them dealing with malaria, but including a series of some 40 papers on the systematics and structure of sandflies, a subject that seemed to have a fascination for Sinton from the time of his early studies when he worked with Professor Newstead at Liverpool on these flies, later shown to be vectors of oriental sore and kala azar. Only a few days before his death Sinton learnt that he had been awarded the Manson Medal, the highest honour given by the Royal Society of Tropical Medicine and Hygiene awarded triennially to the living author of such original work in tropical medicine or tropical hygiene as the Society thought worthy of the honour.
John Alexander Sinton was born on 2 December 1884 at Victoria, British Columbia, the third of seven children of Walker Lyon Sinton and Isabella Mary Sinton (née Pringle), the sequence of births being a son, a daughter, a son and four daughters.

His father's people, the Sintons, were of original lowland Scottish origin, settled in Co. Armagh, North Ireland, for more than 250 years, during which time most of them belonged to the Society of Friends. They were mainly engaged in the linen industry and agriculture, but many emigrated to the United States. A cousin of Sinton’s grandfather married Charles Taft, a brother of President Taft. Sinton’s paternal grandmother (Hemmington) came from Chatteris, Cambridgeshire, and also belonged to the Society of Friends.

The Pringles were also of lowland Scottish origin settled in Co. Tyrone, Monaghan, for about 250 years. They were mainly of professional and agricultural occupation. Two of Sinton’s uncles on his mother’s side were doctors and his mother’s cousins included: (1) the late Professor H. Pringle of Trinity College, Dublin; (2) James Pringle, K.C., formerly M.P. for Tyrone and Fermanagh; (3) Robert Pringle, barrister, Dublin; (4) Seton Pringle, formerly President of the Royal College of Surgeons of Ireland; (5) J. C. Parke, solicitor and Davis Cup tennis player, International rugby player and International golf player; (6) several solicitors. Sinton’s maternal grandmother (Mackie) came from Nairn, Scotland, of a family mainly of professional and agricultural occupation. Both the Pringles and the Mackies were Presbyterians. Sinton’s brother, the eldest of the family, was Director of James Mackie and Sons, Belfast, manufacturers of textile machinery, when he died aged 38.

The family came to Ulster in 1890, when Sinton would be about six years old. They were never in affluent circumstances and it was to his mother’s influence, her hard work and unspiring devotion to educate and bring up her children in their proper sphere of life that Sinton ascribed any success her children may have had. She was widely read and a great lover of poetry.

Sinton’s primary schooling was at the Nicholson Memorial School, Lisburn, Co. Antrim, where he was from the age of nine to fifteen. His secondary schooling was at the Royal Belfast Academical Institution (1899-1902) from which he matriculated in the Royal College of Ireland and entered the Medical School of Queen’s College. Here success followed success in prizes and honours in almost every subject or examination he undertook. He was prize-man in botany, physics, zoology and chemistry, with a special prize in the
scholarship examination and took First Class Honours in Botany and Physics with 2nd Class Exhibition at the First Professional Examination. In his second year he was prizeman in a number of subjects, passing his Second Professional examination with Upper Pass and recommendation to proceed to honours. In his third year he was again prizeman in anatomy, physiology, materia medica and other subjects, passing his Third Professional with Upper Pass and recommendation to proceed to honours. In 1907 as fifth year scholar he was prizeman in surgery and midwifery and Gold Medallist in children’s diseases. When graduating M.B., B.Ch., B.A.O. of the Royal University of Ireland, he took First Class Honours in Medicine, Second Class Honours (first place) with Exhibition in Surgery and First Class Honours with Exhibition in Midwifery and Gynaecology. After graduation he was House Surgeon and House Physician at the Royal Victoria Hospital, Belfast, and afterwards Riddell Demonstrator in Pathology at Queen’s University. At this time he was also Hon. Pathologist to the Benn Ulster Eye, Throat and Ear Hospital and Clinical Pathologist to the Mater Infirmorum Hospital, Belfast.

Whilst at Queen’s University Sinton took the D.P.H., Belfast (1910) (first place and special prize) and the D.P.H. Cambridge (1910). After a course in tropical medicine at Liverpool he took the D.T.M., Liverpool (1911), again taking first place. From February to August 1912, Sinton was Research Scholar, under a post-graduate exhibition of Queen’s University, at the Liverpool School of Tropical Medicine, where he became acquainted with Sir Ronald Ross and Professor J. W. W. Stephens. In August 1911 Sinton joined the Indian Medical Service (taking first place in the entrance examination), but before proceeding to India was seconded for a year as research exhibitioner under a post-graduate exhibition of Queen’s University, during which he studied protozoology at the Liverpool School of Tropical Medicine.

The Indian Medical Service

The Indian Medical Service offered many attractions to those young medicals just passed through the schools and desiring an active life abroad, since, besides suitable salary and pension, there was a wide field of choice in different Government appointments, such as civil surgeoncies, specialist appointments with private practice, professorships in colleges or institutions, research appointments and other openings. The Service was, however, primarily a military one and on joining, an officer, until seconded to ‘Civil’, served in some military capacity, very commonly as Medical Officer to an Indian Regiment. Usually this period of military service lasted for a few years only, unless as some preferred to do they elected to remain in ‘Military’. It was the experience of most young officers to spend these few years under peace conditions, living more or less the usual life of the European in India. This, however, was not to be Sinton’s experience, for before the expiry of his period
of military service there occurred the first world war so that he had many
years of active service and it was not until the end of the war, actually 1921,
that Sinton left 'Military' for 'Civil'.

Military Service

Sinton's first appointment was as regimental medical officer to the 31st
Duke of Connaught's Own Lancers stationed at Kohat in the North West
Frontier Province. He was also in charge of the Brigade Laboratory and at
this time published several papers. One recorded the results of a study of
Roger's method of treatment of cholera by hypertonic saline as seen in the
treatment of 69 cases under his care. He also, in collaboration with his
assistant, contributed a paper on eosinophilia in helminthiasis, giving a
careful record of results in 150 cases including infections with Ankylostoma
duodenale, Ascaris lumbricoides, Trichuris trichiura and Oxyuris vermicularia. On
the outbreak of the Great War 1914-18 and after being R.M.O. and S.M.O.
Moveable Column, Kurram Valley, in the N.W. Frontier, with the rank of
Captain, he was posted to the Indian Expeditionary Force D (Mesopotamia)
as R.M.O. 37th Dogras and other units. It was in an engagement at Sheik
Sa'ad at the time of the attempt to relieve Kut in 1916 that Sinton gained
the great honour and distinction of being awarded the Victoria Cross.

The citation records that although shot through both arms and through
the side he refused to go to hospital and remained as long as daylight lasted,
attending to his duties under very heavy fire. The citation also notes that in
three previous actions he had displayed great bravery. In the same campaign
he was mentioned in dispatches on four occasions and received, from the
Russians, the Russian Order of St George.

On return to duty Sinton, still in 'Military', was on active service in a
number of theatres of war until 1920. He was for a time Sanitary Officer with
the rank of acting Major in the Mahsud Operations on the N.W. Frontier,
later in the East African F Force (Tanganyika) and then with the East
Persian Cordon Field Force commanding a Cavalry Field Ambulance and
Agency Surgeon, Khorassan. From August 1918 to April 1919 he was in the
Turkestan Military Mission as S.M.O. and commanding a Cavalry Field Am­
bulance with rank of Lieut.-Colonel. In 1919 for a year he was D.A.D.M.S.
(San.) successively in the Afghanistan Campaign 1919, the Mahsud
Campaign 1919-20 and the Waziristan Campaign 1920. Many times Sinton
was mentioned in dispatches and received many awards and medals. He was
also awarded the O.B.E.

Mention has been made that the Indian Medical Service was primarily
a military service and even though an officer had been seconded to 'Civil'
he was still liable to recall in case of war. On the outbreak of the second
world war Sinton, being still on the reserve of Officers, though then retired,
was recalled to duty, but in April 1940, having reached the age limit was
placed on the retired list and returned home, joining the Home Guard as a
private. From June to November 1940 he was, however, re-engaged by the Royal Army Medical Corps as Consultant Malariologist to the East African Force and from April 1941 to April 1943 was employed by the Government as Consulting Malariologist to the Middle East Force, travelling in this capacity in many countries in the Middle East as well as in 1942 being on a tour to report on health conditions on the projected air routes for troops across Africa, visiting Soudan, French Equatorial Africa, Nigeria, the Gold Coast, the French Camerons and the Belgian Congo. From March to July 1945 Sinton was on an inspecting and advisory tour for the Army to see malaria conditions in Assam, Burmah and Ceylon and on to Australia, New Guinea, the Solomon Islands and the Moluccas. When he finally retired at the age of 60 Sinton had served over 30 years, of which more than a third was spent on active service.

To return, however, to the termination of the first world war and Sinton’s subsequent life in India whilst in civil employ. After a period of leave home, during which he worked under Professor Newstead studying sandflies of the genus *Phlebotomus* and under Professor J. G. Thomson on protozoological studies, Sinton returned in 1921 to India and was taken on the cadre of the Medical Research Department. For some years he was in charge of the Quinine and Malaria Enquiry under the Indian Research Fund Association and then in 1927 appointed the first Director of the Malaria Survey of India, in which appointment he remained until his retirement in 1936.

At this stage it seems desirable to explain briefly the nature of the appointments referred to and to give a brief description of the organization for research upon and control of malaria in India during Sinton’s time, an organization in the growth of which Sinton played an outstanding part. This can best be done by giving a short account of the Malaria Survey of India and the steps that led to its coming into being.

**The Malaria Survey of India**

The Medical Research Department of the Indian Medical Service was constituted under the administration of Col. J. T. W. Leslie I.M.S., Public Health Commissioner with the Government of India in 1904. It consisted of a sanctioned cadre of officers filling appointments in the Central and Provincial Government Laboratories and other Government sanctioned permanent posts. As time went on, increasing demand for additional researches and enquiries resulted in special grants for these being made by the Government. This eventually became the function of the Indian Research Fund Association, a body established in 1910 which received a special grant from the Government but was largely independent, in this much resembling (and ante-dating) the Medical Research Council in Great Britain. This Association financed such enquiries and other activities as were approved and sanctioned by its Governing Body. A further important development was the institution some years later of the Indian Medical Research Workers
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Conference, which was held annually at Calcutta, Delhi or other such location as might be decided upon and was attended by delegates from all parts of India. At such meetings, as a result of discussion, proposals for researches or enquiries were made that were usually accepted by the Indian Research Fund Governing Body and implemented. At the Meeting of 1925 sanction was obtained, as a result of proposals put forward, for a malaria organization for India to be known as the Malaria Survey of India, the functions of which were briefly to be as follows:

(1) To be fully informed on all malaria problems. To advise the Government on all issues relative to malaria in India.

(2) To initiate enquiries and investigations on malaria.

(3) To undertake systematic research in due course into basic facts underlying malaria transmission, prevalence and prevention.

(4) To carry out epidemiological surveys and mapping.

(5) To advise upon and assist in carrying out antimalarial measures; to study these scientifically and to judge of and elucidate the results.

(6) To undertake clinical work on malaria including treatment.

(7) To assist affiliated researches.

(8) To teach and train officers and others in practical malaria work.

(9) To publish scientific, results, useful guides and bulletins.

Such an organization did not start entirely de novo. As early as 1916 an organization for India had been put forward and implemented following the Imperial Malaria Conference held at Simla in that year. Under this there was formed a Central Malaria Committee and a Provincial Malaria Committee for each of the eight Provinces of India. Under the Central Committee there was established a Central Malaria Bureau at Kasauni where collections were started, a reference library begun and a malaria journal, *Paludism*, instituted. Under the Central Committee were also held classes of instruction in malaria field work and survey. Under the Provincial organizations malaria units under the direction of senior malaria officers were set up. As a result of this organization for the first time knowledge was gained regarding the local conditions relating to malaria throughout the greater part of India. The Malaria Map of India (1926) published under the names of the present writer and Sinton was almost wholly based on such work. The recall of almost all officers connected with the organization during the first world war led, however, to the virtual closing down of all such activities.

At the time of Sinton's return to India following the war the Central Malaria Bureau had been re-established at Kasauni and there were a certain number of enquiries and researches in progress. One of these was the Quinine and Malaria Enquiry financed by the Indian Research Fund under Sinton. There was also an important enquiry known as the Malaria in Sind Enquiry in which the conditions present in a new large irrigation project were being closely watched with a view to such measures being undertaken as would
prevent the usual increased malarial incidence that followed upon such large-scale irrigation. There were other investigations in progress about this time, including one into the reason for a high malaria incidence at Karnal and measures to control this.

Under Sinton’s direction these various activities were brought together under the new organization. The headquarters of the organization was fixed at Kasauli, incorporating the Central Malaria Bureau and its activities. A permanent field station and laboratory was established on the plains within easy access from Kasauli at Karnal, where a building, a large unoccupied hospital belonging to a Mission, was acquired, admirably adapted for the purpose with museum, lecture hall and ample accommodation for laboratory work. Here and at Saharanpur the malaria field classes were re-started and held annually. Besides temporary workers engaged in special enquiries a considerable staff was on the permanent cadre including an entomologist, a chemist and an engineer, with the necessary laboratory assistants, collectors and other personnel.

In December 1937 at the Research Workers’ Meeting at Delhi the Government of India decided to take over the Survey as regards its public health and advisory functions and the whole organization, now named the Malaria Institute of India, was transferred to its present site at Delhi, by now the Imperial Capital of India. This, however, was after Sinton’s time. But the paper ‘Man-made malaria’ made a deep impression on the Conference and undoubtedly had a considerable effect in the decision of Government to afford to the organization the status it now holds.

As Director of the Malaria Survey of India Sinton was ex officio a member of the Scientific Advisory Board of the Indian Research Fund Association under which the scheme was then financed and later a member of the Governing Body. He was also a member of the Malaria Commission of the League of Nations and Co-ordinating Officer for India in this body. In 1929 the Malaria Survey issued the first number of its journal, The Records of the Malaria Survey of India, now the Indian Journal of Malariology. During Sinton’s time as Director there were published in the Records 195 papers, including 61 giving the results of malaria surveys or local enquiries into malaria, 75 relating to systematic and bionomical studies on Anopheles, including control measures, and 46 on treatment, parasitology or other studies on malaria. Other papers were published in the Indian Journal of Medical Research or in other journals. During the same period there were published two volumes of the Fauna of British India dealing respectively with the anopheline and culicine mosquitoes of India.

Life and work in India

Sinton published some 200 scientific papers, some in collaboration with others, but mainly in his own name. For the greater part these deal with various aspects of malaria: clinical studies; studies of the malaria parasites;
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researches on treatment and the evaluation of the new antimalarial drugs; immunology of malaria, especially as studied experimentally in monkey malaria; laboratory techniques; and other studies in relation to this disease. A certain number of these communications, however, relate to other subjects among which Sinton's contributions to the systematics and structure of sandflies of the genus *Phlebotomus* are particularly outstanding.

Some of this large volume of work was carried out in India, some when on leave or after retirement at home. Much of Sinton's earlier work on treatment was done at Kasauli where a Treatment Centre had been established at the Cantonment Hospital for the treatment of cases of malaria among British troops from all parts of India.

Kasauli is a hill station on the first ridge of the Himalaya foothills at which is situated the Government of India Central Research Institute and the Pasteur Institute of India for the treatment and study of rabies. It was a station from which there was easy access to Simla, then the summer headquarters of the Government, as also to Delhi, the winter headquarters, and indeed to the Punjab and India generally. It was here that Sinton for many years had his headquarters and where much of his work was done and where he had many facilities and opportunities of collaboration with his colleagues working at the above laboratories and hospital.

It was at Kasauli that Sinton met and married on 19 September 1923 Eadith Seymour Steuart Martin, daughter of Edwin Steuart Martin and Ada May Martin (née Martin), and where their daughter Eleanor Isabel Mary Sinton was born on 9 December 1924.

Later as Director of the Malaria Survey Sinton spent much time in the Field Station laboratories at Karnal and in visiting other places in India. When first appointed Director he made a three months' tour, visiting all centres where records of work on malaria in India were likely to have been kept in preparation of his "Bibliography of malaria in India", published in the first number of the *Records*. It was as a result of this three months' tour that Sinton re-published in the following number of the *Records* the classical paper by Dempster (1847) on an enquiry into malaria in a canal area north of Delhi in which for the first time use was made of the spleen rate in mapping and measuring the intensity of malaria.

Many of Sinton's later observations, especially those on *Plasmodium ovale* and the newer antimalarial compounds were, however, made in England working as Manson Fellow of the London School of Hygiene and Tropical Medicine and at the Ministry of Health Malaria Laboratory at Horton, where unique conditions for such researches existed.

*Researches on the malaria parasite*

Sinton's work was notable for the many contributions he made to different techniques connected with the study of the malaria parasite, improved methods of preparing and using thick films and interpreting appearances seen
in these and especially in the enumeration of parasites and their identification. He was one of the first to repeat Bass's method of culturing the parasite and his technique for the fowl-blood method of enumerating parasites has been widely employed in studying the course of infections and in determining the parasite values in endemic malaria. In collaboration with Ghosh (1934) Sinton made important observations on malarial pigment, investigating the action of solvents and of oxidizing and reducing agents upon its optical properties and crystallization. He was especially interested in the changes produced by different parasites on the red cell and only a few months before his death he contributed a paper to the Jubilee number of the Indian Journal of Malariology discussing points that were still unsettled in our knowledge of the malaria parasite. In collaboration with Hutton and Shute he published a series of papers on Plasmodium ovale making a very thorough study of this parasite. His paper in collaboration with the present writer (1928) on the correct name of the malignant tertian parasite by pointing out the confusion that existed in the nomenclature was largely responsible for the taking up of this subject by Mr Francis Hemming, Secretary of the International Commission on Zoological Nomenclature, and the subsequent establishment of the names now in common use through an official opinion by that body, thus ending the confusion that had resulted from unsatisfactory attempts to use names which different authors thought to be correct.

Researches on malarial treatment

In his earlier work on treatment of malaria quinine was still almost the only drug available for this purpose and Sinton added much to the knowledge of how it should best be used. In particular he pointed out the value of using this drug in combination with alkali with a view to increasing the alkalinity of the blood. He determined by controlled experiment the effect of different dosage and duration of treatment upon the relapse rate and gave many practical points to help those responsible for its use, including a simple method of testing the amount of quinine in medicinal solutions. As other potentially effective compounds became available Sinton early undertook controlled research on their role in treatment and was the first to point out the importance of plasmoquine (since called pamaquin) in reducing the relapse rate, a feature which in this and other drugs was later to become a very important field of research. In collaboration with Hutton and Shute Sinton added greatly to knowledge of the newer anti-malarial compounds in the treatment of infections with the different parasites and in particularly in the search for drugs bringing about true causal prophylaxis, i.e., so acting that infection was prevented even when the parasite is inoculated by bite or otherwise. Among drugs so tested were stovarsol, pericrina 303, sodium stovarsol, quinine troposan, parosan dimeplasmine, atebrin, plasmoquine, certuna, proseptasine, and paludrine. There were many issues involved in such work. There was the question of effectiveness against the different
parasites. There was the question of cure, i.e., complete elimination of infection, as against treatment of the attack, which however effective did not necessarily eliminate infection and so prevent relapses, one of the chief objectives in malaria treatment and one which quinine, though very effective against the attack, largely fails to do. There was also the question of the effectiveness of different drugs in prophylaxis and the degree to which a drug might be capable of true causal prophylaxis. In all these cases there was the question of dosage in treatment and in prophylaxis and many other issues to be determined. As a result of Sinton’s and his collaborators’ researches much valuable information regarding the treatment of malaria was obtained.

Researches on the malaria parasites of monkeys

During 1932-35 Sinton, largely in collaboration with Harbhagwan and with Mulligan, carried out intensive researches on the plasmodial infections of monkeys, being among the first to undertake such studies and through them to be able to utilize experimental methods in the investigation of treatment and in other directions. In a series of papers the authors gave detailed descriptions of the parasites and their identification together with a critical review of the literature. By these studies they were able to learn much about the mechanism of immunity in malaria, the implications of multiple infections and super-infections and to estimate the effect of treatment upon the development of immunity. They were also able to demonstrate an intradermal reaction in such infections. As a result of this and later work Sinton published in the Journal of the Institute of India (1939) a paper entitled ‘A summary of our present knowledge of the mechanism of immunity in malaria’.

Researches on the systematics and structure of sandflies of the genus Phlebotomus

Sinton’s work on sandflies of the genus Phlebotomus began with his association with Professor Newstead at Liverpool in collaboration with whom he published in 1921 a paper entitled ‘On a collection of Papataci flies (Phlebotomus) from India’. In 1923 Sinton published the first of a series of 36 papers dealing with Indian species of this genus the last of the series being in 1933. He also published descriptions of some species from other countries than India. In all some 27 species were described (24 from India and Ceylon) including 16 that were new to science. These descriptions were very thorough, running as a rule from 5 to 8 pages of print and dealing, not only with external characters, but with internal structure. It was in this last respect that Sinton’s work was more especially notable and some of the important characters used in identification and recognition of species were structural features such as the pharyngeal armature, and in the female, characters of the spermathecae. Without this intensive study and the use of such characters identification and affinities of species would scarcely have been possible.

It was incidentally Sinton’s work on the pharyngeal armature in Phle-
botomus which led to the description by Sinton and Covell of the buccal cavity and pharyngeal armature in Anopheles, and by Sinton and Barraud of these structures in the Culicini. Especially in Anopheles the pharyngeal armature has been a particularly important character in identification and classification.

Other researches

Sinton has made other contributions to science than those so far mentioned. He was one of the first (1917) to describe and give the stages of development of the parasitic trematode Agamodistomum in Anopheles, previously recorded only from A. maculipennis in Europe and now described by Sinton in the larva and adult of three species of this genus on the North West Frontier of India. He also early described other helminthic infections in this genus. Sinton in collaboration with Little (1925) was also one of the earliest to note the occurrence of the midge Culicoides as an ectoparasite of Anopheles.

Besides describing oriental sore in Russian Turkestan, Sinton, in collaboration with Shortt, was the first to record cutaneous leishmaniasis in a dog in India, canine leishmaniasis having been previously described only from the Mediterranean area. Later Sinton, in collaboration with Shortt and Swaminath (1935) obtained transmission of leishmaniasis to humans by the sandfly P. argentipes fed on oriental sore in a monkey and also successfully obtained transmission of cutaneous leishmaniasis by inoculation of humans from a natural lesion in a dog in India.

Though the study of endemicity in malaria has not been a special feature of Sinton’s work he has nevertheless contributed papers dealing with surveys carried out in India and his recommendations to the Malaria Committee of the League of Nations on malaria conditions in the delta of the Ebro in Spain is an important contribution to knowledge of European malaria. Sinton was also joint author with the present writer of the ‘Malaria map of India’, published in the Indian Journal of Medical Research, giving the distribution of endemic and epidemic malaria in contours of intensity, a map that is almost, if not quite, unique for any tropical country.

Nor would mention of Sinton’s contributions to malariology be complete without referring to the many helpful bulletins issued from the Malaria Bureau and the infusion of keenness and interest which Sinton aroused among those with whom he was associated. Here too should be mentioned the contributions that Sinton made in some of his papers regarding economic aspects of malaria. ‘What malaria costs India’ is deservedly famous and a remarkable summary of the economic effects of malaria, which the writer of an obituary has noted might appropriately be called ‘What malaria costs the world’ so extensive is its scope and documentation (Covell, Brit. Med. J., 7 April 1956). To this might be added another remarkable paper entitled ‘Man-made malaria’, which Sinton read at the 13th All-India Congress of Medical Research Workers held at Calcutta in 1935 and which has probably never been equalled as a description of certain epidemiological features of
malaria not often described or their importance realized. Another contribution has been 'Malaria in war', the Robert Campbell Memorial Oration read at the Ulster Medical Society in 1946. Sinton’s appreciation in Current Science (1946) of the work of Sir Ronald Ross should also be mentioned, as also Sinton’s bibliography of 2200 titles of papers and reports on malaria in India since Ross’s discovery of the mosquito cycle, a work including many unpublished records of useful work which alone is an outstanding contribution to malariology.

During 1944-45, when in England before retiring, Sinton made many contributions that were published as helpful reports or circulars by the Army, as also by the Ministry of Health and by the Ministry of Transport giving information and instructions regarding precautions against malaria and its treatment. Some of these were for merchant seamen and ships’ doctors. Some were translated for use in France. As in all Sinton’s work and in whatever task he undertook there is evidenced in these reports and circulars a meticulous care and thoroughness that is very characteristic.

Life in retirement and public honours

Sinton in 1945 retired with the courtesy title of Brigadier, to private life on his estate at Cookstown, Co. Tyrone, Northern Ireland, with the intention to take up fishing and ornithology, pursuits for which he had always had a great liking. During his life in India Sinton must have had many opportunities when time and leave permitted to enjoy these hobbies, if so they might be called, to watch the eagles at Kasauli circling the crags and perhaps to fish in some swiftly flowing Himalayan stream or to enjoy one or other of the many happy relaxations that India offers.

But soon Sinton was to enter wholeheartedly into local affairs. Interested in his old University, he became a member of the Senate in 1948, was Pro-Chancellor in 1952 and President of Queen’s University Association 1953-54. He was Governor of the Royal Academical Institute, Belfast, 1946-50; President of the Co. Tyrone Branch of the Forces Help Society (formerly the Sailors’, Soldiers’ and Airmen’s Help Society) 1946-52, and Vice-President of the North Ireland Branch of this Society from 1952. He was President of the Cookstown Branch of the British Legion 1946-53, member of the Council of the North Ireland Branch 1949-52, and represented North Ireland at the 11th Conference of the British Empire Service League at London in 1951. In 1946 he was made Hon. Member of the Royal Society of St George. He was President of the Queen’s University Service Club from 1946; Vice-President 1946-52 and President 1952-3 of the Old Instonians Association. He was Magistrate (J.P.) for Co. Tyrone from 1947; High Sheriff for that County in 1953; and Deputy Lieutenant on 1954.

In the course of his service and in retirement Sinton received many honours and distinctions. Besides the Victoria Cross, the many Mentions in Dispatches and Medals for war service in the many campaigns in which he
took part and the award of O.B.E. during his military service, he received many civil awards and distinctions. He received the Hon. Degree of M.D. of the Queen’s University in 1917 and in the same year the Arnott Memorial Medal of the Irish Schools and Graduates Association. He was made Hon. Member of the Ulster Medical Society in 1920. He was awarded the Chalmers Medal of the Royal Society of Tropical Medicine and Hygiene in 1929 and was made Hon. Member of the National Malaria Society, U.S.A., in 1930. From 1943-46 he was a Member of the Malaria Commission of the Medical Research Council and in 1944 was awarded the Bissett-Hawkins Medal of the Royal College of Physicians. He was a Vice-President of the Royal Society of Tropical Medicine and Hygiene 1945-47 and President of the Malaria Commission of the League of Nations 1937-46. In 1946 he was elected a Fellow of the Royal Society. In the same year he was Robert Campbell Orator and Medallist of the Ulster Medical Society. In 1949 Sinton received the Mary Kingsley Medal of the Liverpool School of Tropical Medicine. From the Egyptian Government he was awarded the Anti-Gambia Memorial Medal in appreciation of his services in the malaria epidemic of 1950. In 1953 he was made Hon. Fellow of the newly formed National Society of India for Malaria and Other Mosquito-borne Diseases.

As regards Sinton’s personal qualities one has the impression of an acute and active mind, almost tireless in its many activities. He was greatly liked by his colleagues and socially he had a charm that with his natural kindness, generosity and reliability gained him many friends and admirers. He had an extremely high sense of duty and once he had made up his mind on a course of action he believed to be right he was not easily deviated from it, a characteristic that at times gave him a little of the proverbial Irishman’s love of a fight. This did not prevent him, however, being popular with his colleagues and with those in authority. He was a great lover of children and animals and was essentially kind and gentle, a characteristic noted by the writer of one of his obituary notices and one regarding which the present writer is in agreement.

Sinton died on Sunday night, 25 March 1956 at his house in Cookstown, Co. Tyrone, at the age of 71, and was buried with full military honours among the mountains near his home. He leaves a widow and a married daughter.

Rickard Christophers
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