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DOTS on the spot: lessons for access to HIV care

Bertie Squire, Felix Salaniponi & Julia Kemp

People with HIV/AIDS in developing countries become stigmatised and impoverished by their disease. How can health systems deliver effective care to the most vulnerable people? TB is another impoverishing disease requiring complex long-term care. What can we learn from a well-functioning DOTS programme for TB (*see box on page 4*)?

The TB Equity Project (developed by the Malawi National TB Programme and the Liverpool School of Tropical Medicine) investigates whether TB treatment is accessible to poor and vulnerable Malawians. The research includes focus groups, semi-structured and in-depth interviews, a patient survey, operational research and mapping of health facility usage, and TB cases, against indicators of poverty. The work has been carried out by a local team of researchers who have submitted their work towards obtaining Masters level qualifications in Sociology and Community Health. In this way the work has included significant local research capacity development. The project identifies significant barriers to access to TB care and suggests ways to tackle these problems (*see graphic on page 4*). It also shows that:

* The poor have the highest burden of illness and the least access to TB services.

* People with TB seek care from various sources, including shops and private and traditional practitioners.

* Diagnostic procedures have developed around specific tests for infectious cases rather than patients' needs. Patients have to visit the hospital multiple times for diagnosis (consultation, laboratory tests, X-rays) and supervision of treatment.

The research has implications for each component of a comprehensive care package for HIV/AIDS:

Care for opportunistic infections (inclusive of TB) - train community-based health workers in the syndromic management of HIV-related illnesses.

Continued on page 4..

Towards a better understanding of schistosomiasis transmission in Cameroon

Jennifer Gow

In Africa the detrimental impact of schistosomiasis upon human health, despite control intervention(s), is daunting. Even today effective control of schistosomiasis is hindered by gaps in our knowledge concerning transmission of this snail borne disease. Schistosome worms have an indirect life cycle involving two hosts, freshwater snails and humans.

As a consequence, schistosome transmission is subject to many interacting factors. These include the distribution and dynamics of snail, as well as human populations. As part of a research collaboration between the University of Aberdeen and the Natural History Museum inthe UK, as well as the Centre of Schistosomiasis & Parasitology in Yaounde, Cameroon, we have been studying the processes underlying snail population structure.

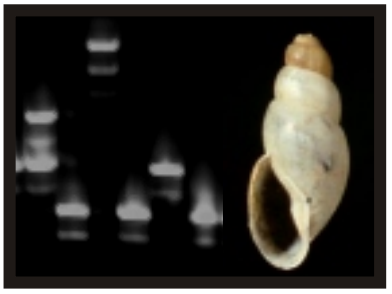
Not all freshwater snails transmit schistosomes and these parasites are, in fact, dependenton only a small number of snail genera. It is the specificity of this snail-schistosome interaction that is primarily responsible for the geographical range of schistosomiasis. The relationship is an intricate one, with particular species of snail susceptible to infection only by certain species or strains of schistosome.

Schistosome transmission occurs in water

Furthermore, at the population level, snails susceptible to infection at some localities contrast with those that are resistantto infection at others. For example, while *Bulinus forskalii* inhabits a wide range of habitat types and climatic zones throughout sub-Saharan Africa, it is host to *Schistosoma intercalatum*, an agent of human intestinal schistosomiasis, at only restricted foci within the rainforest belt of Central andWestAfrica.

Uncovering the population genetic structure of *B. forskalii* can shed light upon both population distribution patterns and temporal dynamics. Recent fieldwork sampled twenty snail populations from Cameroon, including both known transmission foci and sites where schistosomiasis was absent. Analysis with DNAmicrosatellite markers [*these are stretches of short repetitive sequences widely distributed throughout the genome*] can quantify variation within and between thesepopulations, from which inferences about the level of gene flow occurring can be made.

Taking advantage ofthe genetic markers allows us to explore the evolutionary interactions of snail-schistosome systems. For example, why are only certain populations of snail susceptible to schistosome infection and can we predictwhere such populations might occur? If the transfer of genetic material between populations is limited and populations are stable and isolated, local resistance adaptation by snails to the parasite would be expected. Alternatively, if extensive gene flow is occurring, a more regional scale ofadaptation would be predicted, as gene flowwould enable the spread of the resistance adaptationbetween populations.



Visualisation of a shell of B. forskalii *and microsatellite genotypes for six individuals*

Our studies do, in fact, suggest a high level of gene flow is occurring between populations. However, a temporal dimension to this study has detected demographic instability within these populations. Such highly dynamic populations are unlikely to be able to support the regional spread of resistance adaptations by snails to the parasite and suggest that local adaptation will be favoured. By untangling the web of factors influencing the distribution and dynamics of snail intermediate host populations, key forces determining parasite transmission are being revealed; an essential goal to understanding the epidemiology of schistosomiasis.

Jennifer Gow *(e-mail: nhi896@abdn.ac.uk) has recently completed her doctoral studies, which included the work described herein, at the Department of Zoology, University of Aberdeen under the supervision of Les Noble, Cathy Jones and David Rollinson.*

e-TALC: using CD-ROMs to share health information

Teaching-aids **A**t **L**ow **C**ost (**TALC**) is a UK-based charity that specialises in providing low-cost health information to developing countries. It was founded in 1965 by its president, Professor David Morley CBE, MD, FRCP. TALC has distributed more than ten million health information books and accessories to the developing world. Yet, although TALC's books are cheaper than those in the commercial sector, they are often beyond the means of many who could benefit, since the cost of postage alone means that organisations can often only order a limited number.

Advances in information technology mean that health information can now be distributed more cheaply and quickly than circulating printed materials. Although access to computers in developing countries is more limited than in developed countries, it is definitely increasing. The potential of the Internet, which is one way of using this technology, is enormous. However, access to the Internet is limited in countries where telephone services are often unreliable, and where line charges remain high.

CD-ROMs are another way of using technology as a means of communicating health information. The advantages of CD-ROMs are that they are cheap to produce compared to books, and cost little to distribute because they are lightweight. Unlike the Internet, CD-ROMs can be used without a computer being connected to a telephone line. They can also hold a great deal of information which can be selected, adapted and tailored by users to meet their local needs and develop their own libraries of materials at low cost. The information can be made interactive for training purposes, and for those with access to laptop computers, it can also be used in the field. Since CD-ROMs can only be used by people with access to computers, they cannot wholly replace hardcopy information such as books and newsletters. They are however an important way of increasing the availability of health information. Recognising this, TALC launched a DfID-supported project in June 2001 to distribute free, regular, up-to-date health information on CD-ROMs to organisations in developing countries.

One unique feature of the project is that TALC will encourage non-governmental organisations (NGOs) and health workers in developing countries to supply information for the CD-ROM, which they wish to distribute to others. This will provide a vehicle for exchanges of information between all countries, therefore reducing the dependence of developing countries on the developed world for health information. The e-TALC Project is based in Oxford, receiving support from the TALC office in St Albans. The first e-TALC CD-ROM was distributed in July 2002. It contains information for health workers on Anaesthetics, Eye Health, Aids / HIV, Trauma, Maternal Health and Disability, as well as a number of newsletters covering a wider range of health topics. The first CD-ROMs will be sent to health workers on TALC's database who are known to have computer access, as well as e-TALC's own mailing list. The CD-ROMs are being designed to be easy to use and will include a search engine allowing users to quickly identify the information they need. A questionnaire will be used with the first CD-ROM to gather feedback from users, so e-TALC can develop further CD-ROMS to suit users' needs.

Some computer users benefiting from e-TALC

For more information about the e-TALC CD-ROM project, please contact the Project Co-ordinator Pip Elphick at: e-TALC, Unit 13, Standingford House, Cave St, Oxford, OX4 1BA. Tel: + 44 (01865) 791624; Fax:+ 44 (01865) 202530; E-mail: info@e-talc.org

See also www.e-talc.org

NOTE: Professor Morley recently received the Dawson Williams Memorial Prize in recognition of his outstanding contributions to tropical paediatrics and child health in developing countries.

In Praise of '*Savioli- type*' Control

Lorenzo Savioli

Dr Lorenzo Savioli's contribution to the control of tropical diseases originated from experiences gained in the field while working as physician in the hospital of Chake Chake, Pemba Island, Tanzania.

With over a decade of involvement with CUAMM (an Italian non-governmental organization) from 1979, Lorenzo later led the Schistosomiasis Control Programme (SCP) in collaboration with the Ministry of Health of Zanzibar. Under his guidance, the SCP grew from 5 health officers to a group of more than 20 professional staff. Conditions for development, implementation and, more importantly, sustainability of large-scale periodic mass chemotherapy were determined. This then laid the foundation of a strategy that was later expanded for more general control of intestinal helminths. During this time Lorenzo was awarded an MSc in Medical Parasitology in 1989 after study at the London School of Hygiene and Tropical Medicine.

In 1991 Lorenzo was made responsible for the Programme on Intestinal Parasitic Infections of the Division of Communicable Diseases within the World Health Organization (WHO). Lorenzo's vision of public health and pragmatic integration of disease control was infectious. He managed to develop a highly professional group of WHO internal and external collaborators that later contributed to his work as Chief of the Schistosomiasis and Intestinal Parasites Unit. Most recently he became Co-ordinator of Parasitic Diseases and Vector Control within the Communicable Disease Cluster in WHO and Lorenzo's creative energy was strongly felt with publication of WHO Bench Aids for the Diagnosis of Intestinal Parasites, a text considered to be essential reading. His vision of public health and control of parasitic diseases in the tropics has now been endorsed by the World Health Assembly in May 2001. The resolution for control of morbidity due to schistosomiasis and intestinal nematodes infection is a political commitment of member states within the WHO Executive Board.

Lorenzo is always available when patients ask his advice during home leave on Pemba. He has also voluntarily assisted the Ivo de Carneri Foundation in the construction, equipping and staffing and of the Public Health Laboratory-Ivo de Carneri (PHL-IdC) on Pemba that often interrupts his main hobby, the maintenance and repair of classic Land Rovers. His present involvement with the PHL-IdC is a natural evolution of the small team Lorenzo initiated at the start of his career. As collaborating colleagues on a series of operational research and control projects, we find his enthusiasm, support and commitment inspirational. There are some 50 countries implementing '*Savioli-type'* control programmes, notwithstanding the new Schistosomiasis Control Initiative funded by the Gates Foundation, and over 80 scientific publications bearing his name. We, who are privileged to know Lorenzo Savioli well and are part of the PHL-IdC, are duly proud of his achievements and his commitment always to have in mind the problems of the affected communities.

Marco Albonico and staff of the PHL-IdC
Pemba Public Health Laboratory, Tanzania

World Federation of Parasitologists (WFP) News - November 2002

The tenth International Congress of Parasitology (ICOPA X) was held from 4 -9 August, 2002 at the Vancouver Convention and Exhibition Centre, with around 987 papers and posters presented. The World Federation of Parasitologists (WFP) Board and Council Meetings were held at the same time, it was decided that the next Congress (ICOPA XI) would be held at Glasgow in 2006. WFP also elected and approved a new executive committee and board members for 2002-2006: President R.A. Khan (Canada), Past-president M. Suzuki (Japan), Vice-President D. Rollinson (United Kingdom), P. Dubinsky (Slovak Republic), A.M. Johnson (Australia), Treasurer J. Andreassen (Denmark), Secretary N. Arizono (Japan), Members-at-large: H. Mehlhorn (Germany), M.Z. Alkan (Turkey), M.M. Hassan (Egypt), Y. Wattanagoon (Thailand), Soon-Hyung Lee (Korea), B.M. Christensen (USA), M. Guadalupe Ortega-Pierres (Mexico).

In the next 4 years, the WFP board will provide news of relevance on a timely basis. The WFP board is also considering possible amendments of the Constitution and By-Laws of WFP, which you can find on the WFP home page (http://www.para-sitologists.org/). Any comments or suggestions are most welcome. Contact: N.Arizono: arizonon@basic.kpu-m.ac.jp

The Presidential Address

Our world is currently facing a major catastrophe in the expansion and spread of diseases. People living in developing countries, especially Africa, Asia and Latin America, face increasing poverty, inadequate nutrition, poor sanitation and unsafe drinking water. Climatic change in some regions has reduced land available for cultivation and livestock production. Over exploitation of commercial fishstocks has led to their depletion and biodiversity, forests and coral reefs are declining rapidly. Vector-borne diseases, such as malaria and lymphatic filariasis, are increasing and water and food-borne infections, for example, giardiasis and cryptosporidiasis, are now recognized as world-wide pathogens.

The World Federation of Parasitologists (WFP), through its website www.parasitologists.org, will provide information on current events relating to parasites which affect man and food production. It will also include news, views, dates of upcoming meetings and agencies to contact for information. The WFP hopes to encourage non-member countries to join the Federation and also to use its website for information transfer. We plan to establish stronger links with the World Health Organization (WHO), Food and Agriculture Organization (FAO) and other divisions of the United Nations primarily for dissemination of information relevant to parasitic diseases.

Another priority of the WFP will be to raise funding to support attendance of young scientists at meetings of ICOPA in order to become acquainted with the most recent advances in research and also to enable them to establish contacts with specialists in their respective fields. Some of these objectives can be achieved not only with the assistance of the members of the Board but also of all member countries. We invite all members and non-member organizations to express their views, participate in developing and fostering our website and, ultimately the WFP.

ICOPA XI

The British Society for Parasitology (BSP) was delighted to receive the backing of the World Federation of Parasitologists to host ICOPA XI (2006). The BSP, Glasgow and Strathclyde Universities and the City of Glasgow are honoured to invite Parasitologists from around the world to join us in Glasgow, Scotland UK from Sunday 6th August to Friday 11th August 2006.

We are committed to ensuring that this will be a Congress to be remembered. First and foremost will be the science. ICOPA must be a truly global meeting and we hope to promote the attendance of young scientists and colleagues from the developing world. The Scottish Exhibition and Conference Centre on the banks of the River Clyde is a purpose built modern conference centre and a perfect venue for the meeting. The Centre is next to the city centre with hotel and student accommodation nearby. Reaching Glasgow could not be easier, the international airport is served by many different airlines. An exciting social programme is being planned and there will be plenty of options for pre- and post-Congress tours to discover the many delights of Scotland.

ICOPA is for Parasitologists around the world and we would welcome your ideas and suggestions via Professor Mike Doenhoff (m.doenhoff@bangor.ac.uk) or Professor Paul Hagan (p.hagan@bio.gla.ac.uk). The ICOPA XI website is being constructed but in the meantime please visit www.abdn.ac.uk/bsp. We very much look forward to meeting with you in Glasgow in 2006 and ask for your participation in making this "The Best ICOPA Ever".

Rasul A. Khan
President of the World Federation of Parasitologists

David Rollinson
President of the British Society for Parasitology

Russ Stothard & Asanteli Makundi in Bagamoyo

Changing the *Bulletin:* a new editor and going electronic

The *Bulletin* has always played an important role within the *Society,* its previous success owes to the expertise of former editors, in particular that of John Baker and Tom Williams. Following the decision for the *Bulletin* to go electronic, this edition is a small adventure into the unknown and perhaps signals the start of a different relationship the electronic *Bulletin* will have with the *Society.* It will be difficult to predict precisely what will happens but I expect that it might mirror somewhat the changed relationship I had with my best friend, and erstwhile best man, after my wedding several years ago. Following the joke at the start of his speech, and for reasons of good taste sadly cannot be reported here, the guests either split their sides laughing or sat oddly mute pretending nothing untoward had happened. For the electronic *Bulletin*, some will like it others will not but regardless of one's opinion, scientific publishing is changing at a fast pace and the hardcopy no longer has the monopoly. I do hope that having the *Bulletin* in PDF gives us the best of both worlds; you can read it from your computer screen or print it out, where ever you are, to read and distribute to friends and colleagues. The next edition will be scheduled for September 2003 so get ready!

From page 1 - *DOTS on the spot: lessons for access to HIV care*

Voluntary counselling and testing - provide resources for services which are close to communities, backed up by laboratory quality assurance.

Care and support within the community - involve private practitioners from the formal and traditional sectors.

Anti-retroviral drugs (ARVs) - engage patients and communities in the design, implementation and monitoring of services.

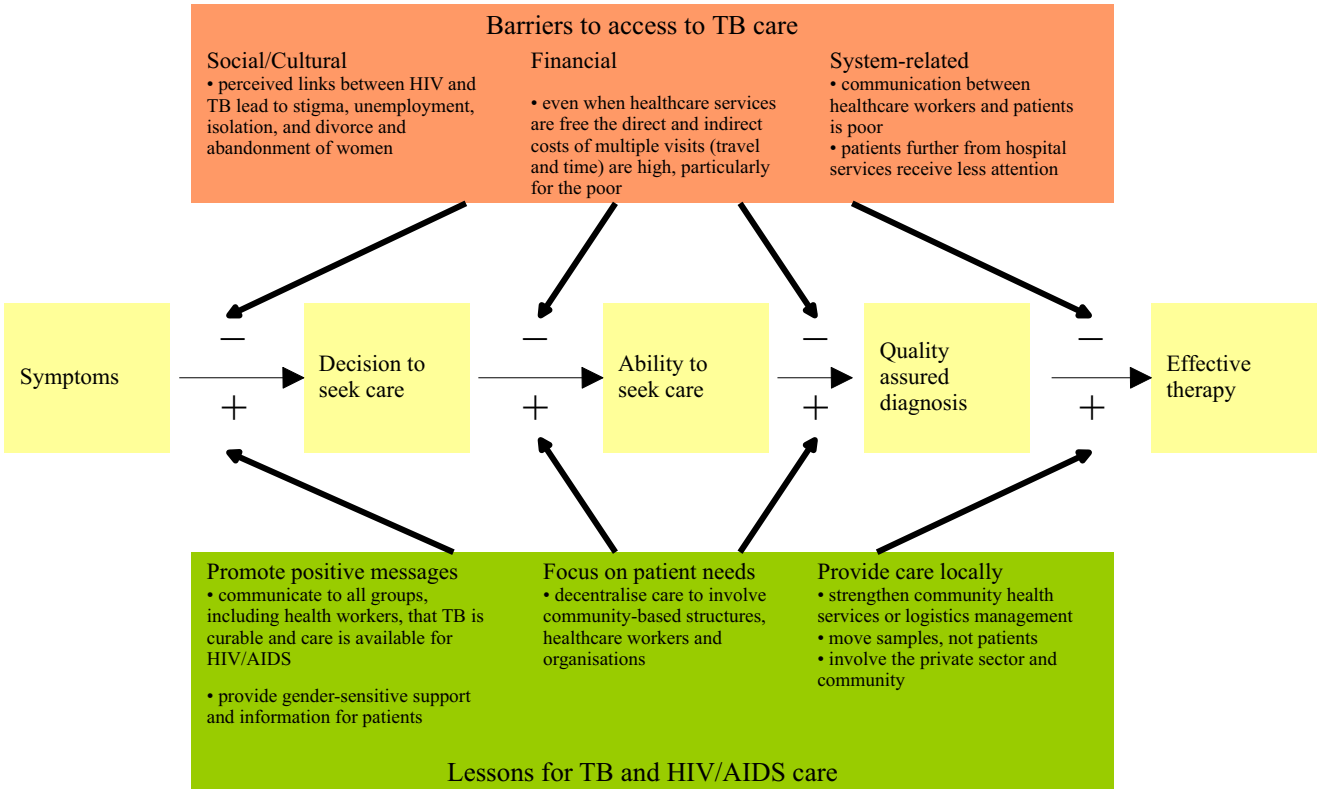
Even within a well-functioning DOTS programme such as this one, poor and vulnerable TB patients can be lost or missed altogether. To ensure equity in access, TB services must be patient-centred. The same principles will apply to the provision of care for HIV/AIDS.

Box **What is DOTS?**

In Malawi, the directly-observed treatment, short-course (DOTS) strategy for TB treatment has been implemented for two decades and consists of:

- diagnosis and follow-up through sputum microscopy.
- standardised short-course drug treatment (min. eight months).
- regular uninterrupted drug supplies.
- accurate record keeping and programme evaluation.
- direct observation of treatment primarily at health facilities but increasingly also, in the home.

The barriers to and lessons for TB/HIV care



Bertie Squire & Julia Kemp are at the Liverpool School of Tropical Medicine, Liverpool while Felix Salaniponi is at the National TB Programme, Lilongwe, Malawi. Contact details: S.B.Squire@liverpool.ac.uk

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Some dates for your diary

May 7-11, 2003, New York, USA
8th Conference of the International Society of Travel Medicine
Internet: www.istm.org

May 10-13, 2003, Glasgow, UK
European Congress of Clinical Microbiology and Infectious Diseases
Internet: info@akm.ch

Nov 4-8, 2003, Bethesda, USA
Annual meeting of the American Society of Human Genetics
Internet: mryan@genetics.faseb.org

Nov 9-12, 2003, Malta
4th Congress of the International Federation of Infectious Control
Internet:infection.control@gov.mt

July 19-23, 2003, Valencia, Spain
European Multicolloquium of Parasitology
Internet: emop.9@uv.es

Are you holding a meeting and would you like other *Fellows* of the *Society* to know? If so contact the Editor (JRS) by e-mail at *mail@rstmh.org*.

Professor DAVID FRANCIS CLYDE

1925 - 2002

David Clyde who was a Fellow of the Royal Society of Hygiene and Tropical Medicine for nearly 50 years and the Manson Medallist for 1989, died on 12th November 2002. Born in India, he received his medical education at McGill University, graduating in 1948. His first assignment to the tropics was in 1949 as a medical officer in Tanganyika (Tanzania). He returned to London to study for the DTM&H which he obtained in 1952 along with the Duncan Medal. David then returned to Tanganyika where he specialised in the control of malaria and pioneered field studies on the epidemiological aspects of the resistance of *Plasmodium falciparum* to drugs [*East African Medical Journal* (1954), 34, 647-649]. He was awarded a PhD by London University in 1963 for his outstanding work on this problem. From 1964 to 1966 he was the Deputy Chief Medical Officer in the post-independence, Tanzanian Ministry of Health. During this period he wrote two key books on medicine and malaria in Tanganyika/Tanzania [*History of the medical services of Tanganyika* (1962) Dar es Salaam, Government Printer & *Malaria in Tanzania* (1967) London, Oxford University Press], taking advantage of is deep interest in medical history.

From 1966 until his formal retirement in 1991, David Clyde's career was focussed in the United States. There he joined the University of Maryland where he remained as associate, then full Professor in the International School of Medicine until 1975. During that period he became deeply involved in the rapidly extending problem of antimalarial drug resistance. In collaboration with WHO and the Walter Reed Army Institute of Research, he also helped in the development of novel compounds with which to combat chloroquine-resistant strains of *P. falciparum* which have since emerged as a major and global obstacle to the management of malaria.

While in Maryland, David also turned his attention to a study of the possibility of vaccinating against malaria. In 1973 with colleagues from New York University he carried out a seminal experiment to examine the immunising potential in man of live, but irradiated sporozoites of *P. falciparum* [*American Journal of the Medical Sciences (1973), 266, 169-177*], including himself as one of the volunteer guinea-pigs! In 1976 he was a joint author with L. H. Miller of a key paper defining, for the first time, the role of Duffy factor in the insusceptibility of black subjects to infection with *P. vivax* [*New England Journal of Medicine* (1976), 295, 302-304].

From 1975 to 1979 David headed the Department of Tropical Medicine and Medical Pathology at Lousiana State University, then moved to New Delhi where he worked with WHO until 1985 in public health administration and malaria. For his many years of service to WHO in its fight against malaria he received the prestigious Darling Medal in 1985. He then returned to the University of Maryland where he was appointed Research Professor as well as a Senior Associate of Johns Hopkins University. In the latter centre he directed the malaria studies in the Centre for Vaccine Development until his retirement. An inspiring teacher, David continued to enrich the studies of students in Baltimore with the benefit of his lifetime of practical experience in tropical medicine and especially malaria.

David's distinguished career during which he served on numerous WHO and other committees on malaria, was marked by a prolific production of publications, especially on malaria chemotherapy, and by two further books on medical history [*Two centuries of health care in Dominica* (1980), New Delhi, S.Gopal & *Health in Grenada* (1985) London, Vade-Mecum Press]. His numerous other awards included the LePrince Medal of the American Society of Tropical Medicine and Hygiene and the dedication to him of the Malaria Research Laboratories of the Centre for Vaccine Research of the University of Maryland in April 2002.

David is survived by his wife, Kathleen, whom he married 53 years ago, their two daughters and a granddaughter.

Appreciation by Professor Wallace Peters

MARJORIE ETHEL MARYON 1914-2002

Marjorie Maryon, known to her friends as Mary and to virtually everybody else as Miss Maryon, died on August 14th 2002. She had been a Fellow of the Society since 1949.

Without any formal qualifications, Marjorie joined the Ministry of Health Malaria Laboratory at Horton Hospital in Epsom, Surrey, in 1936 as an assistant to P. G. Shute and worked with him until her retirement in 1969. The Malaria Laboratory was at that time mainly concerned with the now controversial use of induced malaria, or malariatherapy, to treat general paralysis caused by syphilis. Between 1926 and 1960, 13 000 patients were infected with malaria and over 100 000 mosquitoes used. This work involved the breeding, maintenance and infection of mosquitoes and painstaking estimations of the numbers of parasites to be inoculated and detailed follow-ups of the resulting parasitaemias in the patients.

The data collected from these patients led to important observations on the course of malaria in non-immune subjects, the latent periods between infection with sporozoites and the appearance of parasites in the blood and the phenomenon of late relapses. These studies were subsequently of great significance in the discovery of the pre-erythrocytic stages and hypnozoites of the malaria parasites.

With the decline in interest in malariatherapy, Marjorie was able to devote more time to the collection and verification of malaria cases imported into the United Kingdom and to the effects of various antimalarial treatments. Her meticulous notes on induced malaria and on imported malaria have been carefully preserved and have been of immense value to malariologists and are still being used in ongoing research projects.

Marjorie Maryon's expertise was mainly in the technical aspects of the subject and the Horton laboratory pioneered staining techniques for blood films, liver stages and mosquitoes and set standards that have never been surpassed. Slides from the laboratory were distributed all over the world for teaching and reference purposes.

An expert at dissecting mosquitoes and collecting and enumerating sporozoites from the salivary glands, Marjorie trained many technicians from all over the world, many of whom were supported by the World Health Organization. With P. G. Shute, Marjorie Maryon also trained many generations of DTM&H and DAP&E students at the London School of Hygiene and Tropical Medicine; her patience and kindness was legendary as I can testify from personal experience. One lasting reminder of her expertise is the invaluable *Laboratory Technique for the Study of Malaria* which she co-edited with P. G. Shute.

Invariably in the company of P. G. Shute, Marjorie was a regular contributor to the, sadly now defunct, Royal Society of Tropical and Hygiene laboratory meetings. She also took her expertise abroad and travelled widely including Russia, Romania, Nigeria, The Gambia (*then 21 hours by air!*) and Iran, long before such travel became commonplace. After her retirement she took the opportunity to develop her other interests including improving her Italian and German, gardening, driving her BMW and walking her retrievers.

Marjorie Maryon will be remembered with affection not only by her friends but by all who had the good fortune to work with or be taught by her.

Appreciation by Professor Frank Cox