The London and Liverpool Schools of Tropical Medicine 1898–1998

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In June 1866, Patrick Manson (1844–1922), newly qualified in medicine at Aberdeen University, arrived in Formosa (Taiwan) to begin a career in the service of the Chinese Imperial Maritime customs. His five years there, and subsequently at Amoy on the Chinese mainland, set in train a sequence of events that has been called 'the birth of the science of tropical medicine'. For it was there that Manson began his solitary painstaking studies of the filarial larvae of elephantiasis, and of mosquitoes transmitting filarial infections. It was there that he first realised and acknowledged his own shortcomings in diagnosing and treating the 'tropical diseases' affecting his Chinese patients. These shortcomings were shared by many British colleagues, sent to outposts of the Empire, with no formal knowledge of diseases of hot climates, which did not then form part of the curriculum in British medical schools.

On leave in London in 1875, Manson acquired a microscope in order to further his studies and, in 1877 and 1878, he published seminal papers on the microfilariae of elephantiasis and their metamorphosis in the mosquito. Manson's work was eventually to provide the basis for Ronald Ross's (1857–1932) elucidation of malaria transmission by Anopheles mosquitoes.

In the 1880s, by then in practice in Hong Kong, Manson played a leading role in establishing a medical college there, to fill a perceived need for local educational facilities; and in the 1890s, back in Britain, his interest in education and research into tropical diseases were further stimulated when he became physician to the Seamen's Hospital Society's Branch Hospital at London's Albert Dock. Here, in the Port of London, were laid the foundations for the country's two pioneer tropical schools in an initiative and collaboration between Manson and Joseph Chamberlain, Colonial Secretary from 1895, aided by Chamberlain's able Private Secretary Herbert Read (1863–1949), and with the full support of the Seamen's Hospital Society.

On October 1st 1897 Manson, by then medical adviser to the Colonial Office, began his annual course of lectures to students at St George's
Hospital with a lecture *On the necessity for special education in tropical medicine*, which was to have wide-ranging consequences. The Colonial Office responded with a Memorandum on the need outlined by Manson, followed by a Circular to Colonial Governors from Chamberlain in May 1898. From then on, discussions and plans for a London School and its location progressed through a mass of bureaucratic arguments; whereas the then strong Liverpool business community, with vested interests in tropical areas, reacted to the Circular with offers of financial contributions towards a Liverpool based school as early as November 1898. As a result of such very different initial foundations, the Liverpool School of Tropical Medicine could open its doors to students and staff in April 1899, and the London School six months later, in October of the same year.

From the outset, the London School owed its strength to the vision of Manson, and to his developing working relationship with Chamberlain at the Colonial Office. Manson’s encouragement of Ross’s studies of malaria transmission was part of a growing recognition, shared by Chamberlain, of the threat posed by malaria in particular, to native labourers and their families, as well as colonial officials of all nationalities throughout Africa, India, and the Far East, and hence to plans for colonial development. The first Royal Society Commission on malaria was established in late 1898, before the opening of the schools, but including members who were to join one or other of the schools as teachers and research workers.

If the two schools had their origins and overall intent in common in the Manson-Chamberlain initiative, their foundations were different in geographical, financial, and administrative background and approach. In London, Manson shaped the structure of his school with deference to the concerns and politics of the Empire, formulated by Joseph Chamberlain since his arrival at the Colonial Office in 1895, never forgetting his own ideas on the teaching of tropical medicine within developing medical science, as a tool for reducing health risks in hot climates.

In Liverpool on the other hand, the vested interests of a thriving business community, focused in particular on trade connections in the Caribbean, West Africa and Latin America, supported the School’s development financially at a time when Rubert Boyce (1863–1911) was working to develop the existing Liverpool University College into a full university. To Boyce’s flair for fund-raising was added the generosity of Liverpool’s merchants, led by Alfred L. Jones (1845–1909). Clinical facilities were initially provided at the Royal Southern Hospital through the intervention of William Carter (1836–1912). When, in 1914, the School acquired new premises next door to the Liverpool Royal Infirmary, a new Tropical Ward there became a more practical option for the School’s clinical teaching.
Between the opening of the London School in 1899 and the outbreak of World War I in 1914, further developments reflected Manson's approach to involvement, in teaching and in research in his school, of progress in medical science. For the initial five years at the Albert Dock, the teaching staff were the physicians of the adjoining hospital where clinical teaching took place. There were laboratory sessions in a newly completed and equipped wing, which contained the School laboratory with its microscopes for students, and a small but growing library and museum. Students following the courses included medical officers with postings abroad, and a number of 'Lady Graduates', mostly bound for medical missionary work in Asia and Africa. The position of the Seamen's Hospital in the London Docks had, since the appearance of the Society's hospital ships early in the century, been necessary to reassure patients who, on a foreign shore, feared being too far distanced from the ships they considered home.

By 1905, Manson was ready to introduce specialised teaching in the School's laboratories. He recruited two young doctors, medically qualified, but with additional strong backgrounds in other biological subjects: Robert T. Leiper (1881–1969) as helminthologist, and Charles Morley Wenyon (1878–1948) as protozoologist. In 1907, they were joined by A.W. Alcock (1859–1933) as medical entomologist.

In other ways, too, the year 1905 was one of change in structure and direction for the London School, and in its relations with the University of London, which in January granted an application for the School to be included as a branch of its MD examination in addition to its five existing ones of medicine, pathology, mental diseases, midwifery and diseases of women, and state medicine. This was shortly followed by a similar application from the Liverpool School, granted in October of the same year.

During the years until 1914 and the outbreak of World War I, research at both schools centred on a number of expeditions abroad. The Liverpool School, then enjoying the participation of Ronald Ross at the height of his promotion of a policy of active prevention of malaria by mosquito control, mounted a number of expeditions, supported by the Liverpool merchants, to countries and colonies associated with the city's shipping trade. The London School also received grants for such activities from private charities. In addition, there were joint projects, rivalries notwithstanding, notably the Royal Society Sleeping Sickness Commission in the early years of the century, which yielded a number of discoveries made by staff members from both schools. In Liverpool, results from expeditions abroad were linked to work in the Thompson Yates basic science laboratories at University College until 1903, when better accommodation became available in the Johnston Laboratories. The following year, additional facilities for animal experiments, new instruments, etc., were obtained when the Runcorn Research Laboratories
were established in a converted row of cottages in September 1904. The Runcorn Laboratories then emerged as the Liverpool equivalent to the London School’s on-site laboratories at the Albert Dock. In their early days, the two schools pioneered the mixture of clinical and laboratory research not otherwise common in medical specialities at that time.

R.T. Leiper, the younger fellow Scot picked by Manson to lead the new helminthology department and develop the School’s interest in his own favourite subject, was a fortunate choice. Somewhat aloof and not always on the best of terms with colleagues in other departments, he was well liked by his own students and staff. When Manson retired in 1912, Leiper stepped easily into a commanding rôle in shaping the School’s future development. By chance, his interest in helminths led to early contacts with the Rockefeller Foundation, then involved in its intensive anti-hookworm campaign in the southern US\textsuperscript{11}. Leiper and Fleming Mant Sandwith (1853–1918), also a staff member, made a considerable impression on Wickliffe Rose (1862–1931) during his first visit to London as Director of the Rockefeller’s International Health Board in 1913\textsuperscript{12}.

From then on, Leiper made the most of the Rockefeller connection. His bold plans for Rockefeller involvement in improvements for the tropical departments were eventually to lead to a rather different, but more extensive development: the transformation of Manson’s Tropical School into the London School of Hygiene and Tropical Medicine. The new school would emerge in the 1920s as the country’s first postgraduate school of national and international health, and as a European counterpart to the Johns Hopkins School of Hygiene and Public Health in Baltimore\textsuperscript{13}. The Rockefeller intentions were for these two schools to form centres for the development of their public health policies around the globe.

The war years from 1914 to 1918 saw staff and students from both schools in the forces, in the RAMC, and in diagnostic laboratories in all war zones. In 1914, the Liverpool School’s own laboratories had moved into a new building on the edge of the University Campus. At the outbreak of war, the building was offered to the War Office as a temporary hospital where the School carried out wartime work of importance, on dysentery and on malaria chemotherapy.

From the London School, Leiper with E.L. Atkinson (1882–1928), a survivor of Scott’s fatal expedition to the South Pole in 1912, set out for Japan, on the eve of war in 1914, to confirm Japanese results on the life-cycle of schistosomes. In spite of personal differences – Leiper’s spiky Scottish temperament did not sit well with Atkinson’s disciplined public school manners – they completed their task by July 1914. At the outbreak of war, Leiper was the natural choice to head the RAMC’s Bilharzia Mission in Egypt\textsuperscript{14}. Malaria was another major problem during the war years. Malaria field laboratories were staffed by members of both schools.
After the war, 'malaria therapy' came into prominence at a time when rising numbers of cases of syphilis, and of its tertiary stage of GPI (general paralysis of the insane), gave cause for concern. Wagner von Jauregg in Vienna had postulated the benefits of febrile illness upon psychoses since 1887; by 1917 he began to inoculate parietic soldiers with benign tertiary malaria (*Plasmodium vivax*). His 'malaria therapy' soon received a great deal of attention. Warrington Yorke (1883–1943) pioneered its use at Liverpool, and Sidney James (1870–1946) and others took it up at the Horton Laboratories at Epsom. For 50 years, from 1925 to 1975, the Horton Malaria Laboratory served as Britain's Malaria Reference Laboratory. Following World War II, it became a WHO Malaria Reference Centre, eventually situated at the London School, with other WHO Reference Centres, after 1973.

When Warrington Yorke succeeded J.W.W. Stephens (1865–1946) as Professor of Tropical Medicine at Liverpool in 1928, he inherited responsibility for the management of the School's research station at Freetown, Sierra Leone, which he had helped to plan when after World War I it was established with a legacy from the will of Alfred Jones. There, D.B. Blacklock (1879–1955), the laboratory's first Director, had identified the blackfly *Simulium damnosum* as the vector of onchocerciasis (river blindness) in 1926. The upkeep of the laboratory was increasingly becoming a drain on home resources. Help came from an unexpected source: the MRC's interest in supporting broadly based research on chemotherapy at the tropical schools and elsewhere.

The MRC's Chemotherapy Committee was established in 1925 in recognition of the importance of 'discovery or production of chemical substances having specific lethal action upon the causative parasitic organisms of infective disease, without lasting toxic effect on the body itself'. Interest in this country was possibly spurred on by intense activity in this field in German laboratories following the war. The first MRC committee was chaired by H.C. Dale (1875–1968), and members initially included Andrew Balfour, Director of the London School, C.H. Browning at Glasgow who was already collaborating with J.B. Cohen at Leeds, and the Oxford chemist Robert Robinson (1886–1975). In its second year Cohen, R.T. Leiper from the London School and Warrington Yorke from Liverpool joined the committee. From then on, with continuing MRC support, the two schools continued their research on chemical compounds to combat, in particular, trypanosomiasis and malaria.

In London, potentially anti-malarial compounds, some prepared in chemistry laboratories elsewhere, were tested in animal models, usually canaries, in the early days. Since World War II and the recognition of the development of resistance to antimalarials, the search for new active synthetic compounds has intensified everywhere. At Liverpool, Warrington Yorke, with a number of collaborators, studied compounds
potentially active against malaria, and also took a particular interest in the action of drugs on trypanosomes, and the development of drug resistance. Much of Yorke's later work was carried out with A.R.D. Adams (1901–1992), and some with F. Murgatroyd (1902–1951), who moved to the London School in 1937. After a period of failing health and taxing wartime work, Warrington Yorke died in 1943, less than two weeks after his 60th birthday. He was mourned as one of the outstanding figures at the Liverpool School, and within tropical medicine in general. Unfinished war work on biological testing on ICI's newly developed antimalarial prodrug (Paludrine) was completed by A.R.D. Adams.

The death of Yorke left the Liverpool School without a senior professor of tropical medicine. The post remained vacant until 1944 when the selection committee appointed an Australian physiologist, turned malariologist during the war, to lead the School into the new era of post-war, post-colonial, international health concerns. Brian Maegraith (1907–1989) arrived in Liverpool in 1945. He was to stay there for the rest of his working life, as Alfred Jones and Warrington Yorke Professor of Tropical Medicine 1944–1972, and Dean of the School 1946–1975. Maegraith's approach to research was different from Yorke's, and reflected his physiological training. He created a research school based on studies of the pathophysiology of malaria, staffed with overseas post-graduate doctors who came to the School in increasing numbers in the post-war years. With the end of the Colonial Medical Service in sight, there was a reduction in numbers of diploma students at home and, although doctors from tropical countries soon replaced them, Maegraith felt a need to move beyond the School's colonial ties. After the end of World War II, commercial support for the School dwindled, and University Grants (UGC) funding came to account for between half and two-thirds of recurrent expenditure.

Faced with such facts, Maegraith defined his own philosophy for the future of the Liverpool School: 'our impact on the tropics must be in the tropics'. True to this dictum, he became personally involved, and in turn involved the School, in a series of projects aimed at conveying its essential aspects to centres in the developing world. In 1958, H.M. Gilles, who 20 years later succeeded Wallace Peters as Dean of the School, became 'Lecturer-at-Large', seconded to the medical faculty of the University of Ibadan. Before returning to Liverpool 5 years later, Gilles taught the value of social and preventive medicine in the community to local medical undergraduates, and also established a research centre in the village of Afuko. Other spheres of influence abroad for Maegraith and the Liverpool School at this time included the Faculty of Tropical Medicine in Thailand, with Maegraith's first PhD student Chamlong Harinasuta as its Dean, and a post-graduate Institute...
of Endemic Diseases in Ghana aimed, at the request of Nkrumah himself, at ‘re-orientation’ of local doctors who, educated abroad, ‘lacked understanding of the diseases and social problems in their own country’, particularly in rural areas.

Meanwhile at the London School, the 1920s had been characterised by radical changes to its structure. At the end of the Great War, the Red Cross, finding itself with surplus funds, generously made it possible for the School and its adjoining Hospital for Tropical Diseases to move from the Albert Dock to a central London site at Endsleigh Gardens, within the general area of University College. Soon afterwards, ambitious plans for expansion, both structurally and academically, were set in motion, as a result of the pre-war ‘hookworm connection’ established by Leiper with the Rockefeller’s Wickliffe Rose. In the event, Leiper’s hopes of special help for the tropical departments were side-tracked by the Rockefeller Foundation, and in particular by Wickliffe Rose’s vision of Rockefeller funded improvements to public health on a world-wide scale. The initial Rockefeller donation of $2 million provided a site and building expenses for a new school in Keppel Street; the Hospital for Tropical Diseases remained in Endsleigh Gardens for the time being. With the additional support of the Report of the Athlone Committee on ‘further education in medicine in London’¹⁹, plus (eventual and rather grudging) Government promises of future maintenance support, plans for the construction of the London School of Hygiene and Tropical Medicine (LSHTM) went ahead from 1923 until completion in the summer of 1929.

In October 1923, Andrew Balfour (1873–1931) was, with Rockefeller approval, appointed Director, the only one in the School’s history; all other heads, before and since, have been styled ‘Dean’. As early as 1927, two new Chairs were created and filled: one, in Epidemiology and Vital Statistics, for Major Greenwood (1880–1949); and another, in Bacteriology and Immunology, for W.W.C. Topley (1886–1944). The two men had by then been collaborating for some years in the field of experimental epidemiology, established by Topley in the wake of his experiences in the Great War, with MRC support; a field in which Greenwood’s statistical input formed an essential part of measurements designed to determine mechanisms of spread of epidemics, by experiments in which infected mice were introduced into controlled populations of laboratory mice. The collaboration between Topley and Greenwood in this field continued throughout the inter-war period, as did both departments’ links with the MRC²⁰.

Over the years, close relations with the MRC were to reinforce other departments as well. When B.S. Platt (1903–1969) was appointed to the Chair in Human Nutrition at the LSHTM in 1946, he took with him the concerns of the MRC’s Human Nutrition Unit, and from 1947 its new out-station in The Gambia. J.N. Morris’s Social Medicine Unit came as a
whole to the School with his appointment to the Chair of Public Health in 1967. J.S. Weiner’s Environmental Physiology Unit came with him from Oxford to the School in 1963, remaining until his retirement in 1980. From 1968 onwards, it established important working relations with the TUC Institute (see below). The work of Greenwood and Topley in experimental epidemiology came to form an essential constituent in the framework of ideas on preventive medicine and public health that expanded the School’s concerns for national and international public health.

The departments of the tropical Division continued to work in Endsleigh Gardens until the move in 1929, when they joined the newly created Divisions: Topley’s Bacteriology and Immunology; Greenwood’s Epidemiology and Vital Statistics; Harold Raistrick’s (1890–1971) Chemistry and Biochemistry; and Public Health under Wilson Jameson (1882–1962). Balfour’s health broke down and he died in January 1931. It was a tragic end to a distinguished career, from his work in the Wellcome Laboratories in Khartoum and in London, to his organisational skills during the years of transition at the LSHTM, never an easy responsibility. The combination of the ‘old’ professors of the tropical school, and the incoming and enthusiastic ‘new’ professors filling the posts in public health related subjects, was an explosive one. There were many strong characters. Balfour, athletic Scot though he was, had been prone to nervous exhaustion even in the early years in the Sudan. In the late 1920s, the frictions between what Sidney Chave called the ‘prima-donnas’ among the heads of old and new departments proved too much to handle.

The appointment of Wilson Jameson as Balfour’s successor defined the new direction of the restructured School; from the medical concerns of a fading Empire to a national and international school of public health, moving towards integration of domestic and global health concerns. The process appropriately began at home under the aegis of Jameson, described by his biographer as ‘architect of national health’.

The 1930s were years of advance, both in teaching patterns, benefiting from increased availability of textbooks, and in research activities in laboratories at home, and on expeditions abroad. In epidemiology, the subject with which the LSHTM has so closely identified itself, pioneering studies in medical statistics, initiated by Greenwood, were carried to new heights by Austin Bradford Hill (1897–1991). The first edition of his classic textbook, *Principles of Medical Statistics*, was published in 1937. It has been a mainstay of teaching since, and medical statistics has become an invaluable, if sometimes controversial, research tool in clinical investigations, initiated by Hill and Richard Doll, and in medical science in the second half of the twentieth century. Evolution of the science of epidemiology resulted in stronger emphasis on prevention in public health.
Tropical departments also continued to flourish. In the reorganisation in the 1920s, ‘Entomology’ became an independent department under P.A. Buxton (1892–1955) who defined his plans for the future in a letter to Nature, and also persuaded the Board of Management that the School’s contribution to progress in medical entomology must now focus on producing ‘a science of insect physiology’\textsuperscript{24}. With this in mind, he wisely chose the young V.B. Wigglesworth (1899–1994) as his assistant. Between them, they shaped the department’s teaching and research around developing insect physiology, searching for ‘lasting’ chemical insecticides long before the advent of DDT. Hence, from the early days of the LSHTM, tropical and temperate public health came together in medical entomology as much as in epidemiology. Although Yellow fever, malaria, and sleeping sickness – even the physiology of digestion in the tsetse fly – formed part of Wigglesworth’s studies in Africa, insect research within the School in Keppel Street was better known among its staff and students for Buxton’s insistence on breeding lice, destined for research on their rôle in the transmission of typhus, in small containers inside their socks.

When, in the early 1920s, it had become clear that Rockefeller support would be directed at the general public health option rather than a less broad expansion of the tropical division, Robert Leiper had been to some extent compensated in a different way. At the end of the war, with its many problems of maintenance of healthy stock and crops to feed a nation at war, the Ministry of Agriculture agreed to fund a study of parasites of farm animals and plants. With a grant from the Development Commission’s Fund, Leiper was able to establish an Institute of Agricultural Parasitology at Winches Farm, near St Albans, where he could pursue his interests in comparative parasitology. After his retirement, it became the LSHTM’s Field Station, with Gerald Webbe as Sub-Dean. From then on, work there included aspects of immunology, pathogenesis, vaccine production, and chemotherapy, of a number of tropical diseases\textsuperscript{25}.

In the second half of the century, both schools have continued to develop both teaching and research; and although actual co-operation has been rare in general terms, joint projects have been undertaken in recent years with Government funding, notably through the ODA. In Liverpool, the export of its teaching models to Ibadan, Thailand and Ghana, was followed in the 1960s and 1970s by new initiatives within the changing post-war, post-colonial perspectives in both politics and in the biomedical sciences, the latter increasingly adopting molecular approaches. A new department of Tropical Paediatrics and Child Health was established under Ralph Hendrickse, with courses available for doctors of all nationalities seeking specialist instruction in child health and paediatric care in tropical environments. The department’s aims and policies underlined new attitudes to the perceived divide between erstwhile
‘tropical medicine’ and a newer version of ‘medicine in the tropics’, while attempting to merge rather than divide the two concepts. Other departments also mirrored developments in London and elsewhere. Within parasitology and entomology, there was new emphasis on applied biology of vectors and on host–parasite relationships.

The appearance of drug resistant malaria parasites and vectors underlined everywhere the urgency of new research. The Liverpool School co-operated with the MRC and later with the WHO in a unit created in 1968 under Wallace Peters, who after 3 years as Dean at Liverpool moved to the London School as Professor of Protozoology in 1979 until retirement 10 years later. Equally in line with child health initiatives and developments in London was the establishment of a Department of Tropical Community Health (later of International Community Health) which in 1970 replaced Liverpool’s Department of Tropical Hygiene. The changing titles again bring to mind changing priorities within Public Health and Epidemiology in London, where ‘Tropical Hygiene’ still survives in the erstwhile Ross Institute. On the other hand, it may be significant that, in Liverpool, community health is seen essentially as tropical, whereas in London tropical and temperate community health and medicine exist in separate units.

In London after the end of World War II, George Macdonald (1903–1967) had succeeded Malcolm Watson as Director of the Ross Institute, part of the school since 1934. A Chair was created for Macdonald in Tropical Hygiene, and the Institute became the School’s Department of Tropical Hygiene. His tropical credentials were impeccable, and he had links with both tropical schools. He had qualified in medicine at Liverpool, and had spent 4 years in research at the Liverpool School’s Freetown laboratories.

At the LSHTM, Macdonald developed his mathematical modelling as a tool in the analysis of malaria epidemiology, and in potential control. His approach brought him into conflict with P.C.C. Garnham in the Parasitology department, focused at the time on pre-erythrocytic and exo-erythrocytic stages in the malaria cycle. It was a classic conflict between the approach of ‘biological’ epidemiology, concerned with the complex cycle of development of the parasite in vector and host, and that of ‘mathematical’ epidemiology, depending on modelling for analysis26. No attempts were made to pool intellectual resources. Garnham and Macdonald each achieved remarkable and highly regarded results within his own scientific sphere; of potentially fruitful collaboration there was none.

The decade of the 1970s saw changes, in structure and direction, throughout the London School, when C.E. Gordon Smith (1924–1991) began a period of nearly 20 years as its Dean. A former Reader in Virology at the School, he presided as Dean over a programme of major restructuring, both at the beginning of the 1970s, and again towards the
end of his tenure in the late 1980s, when the Reid Committee’s recommenda-
tions were being put into effect under himself and his successor as
Dean, from 1989 to 1995, Richard Feachem.

Radical changes began in the Department of Public Health, which had
gone through a difficult period in the 1960s, when in 1967 J.N. Morris was
appointed to the Chair of Public Health. At the same time, the department’s
erstwhile ‘Sub-Unit’ of Occupational Health, which had become a full
department under Richard Schilling (1911–1997) in 1960, acquired an
affiliated TUC Institute of Occupational Health, initially supported by the
TUC to mark its centenary in 1968. In the wake of the Reid Report and the
resulting restructuring, the Institute closed in 1989, and the following year
‘Occupational Health’ disappeared altogether from the LSHTM Annual
Report. It was to some extent replaced by a new ‘Environmental Health’
Unit in what is now the Department of Public Health and Policy.

J.N. Morris’s appointment signalled a complete overhaul of the
department’s teaching programme, as well as changes in its pattern of
research and the definition of its subject matter. Morris had been, and
remained, Director of the MRC’s Social Medicine Unit, and ‘Public
Health’ became ‘Social Medicine’ and eventually ‘Community Medicine’,
at the same time as the Liverpool School established its Department of
Tropical Community Health. The tropical element in Community Health
and Medicine was present in the department during Patrick Hamilton’s
(1934–1988) all too brief period as Chairman of a new Division of
Community Health from 1982 to his death in 1988.

As the two schools approach their centenaries, the Liverpool School has
built up its experience in medicine in the tropics, and the London School
has in a sense come full circle, with tropical medicine and hygiene
proceeding hand in hand with public health. With the impact of rapidly
accelerating mass tourism and air travel since World War II, and the
consequent renewed threat of exotic diseases – as well as emerging viruses
– imported into temperate climates, and unsolved problems in indigenous
communities, tropical schools and institutes with global medical concerns
everywhere must look to their futures as well as their pasts. In a changing
world, even the two ‘old rivals’, the Liverpool and London Schools, have
come closer together in co-operation within the ODA funded Malaria
Consortium, a joint project to oversee operational malaria control
programmes, and designed to bridge transition from laboratory research
to control in the field.

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