Dr Neville Martin Bailey MD, MSc, DPH

1930-2017

by

Sheila Bailey FRSA, FIoD

Dr Neville M Bailey 1930-2017

Qualifications

MB ChB University of Manchester July 1954
MD University of Manchester December 1967
DPH University of London - School of Hygiene & Tropical Medicine 1964
BSc Hons University of London 1958
MSc in Zoology University of London July 1967
CBiol MRSB - Chartered Biologist
MRCGP - Member of the Royal College of General Practitioners 1963
MFCM - Member of the Faculty of Community Medicine 1972

Health Service Management Courses

Manchester Business School 1972 & 1973
King's Fund London 1972

Societies

Member of the Welsh Council of the British Medical Association 1976-85
Member of the Royal Society of Biology
Fellow of the Royal Society of Tropical Medicine & Hygiene
Fellow of the Royal Entomological Society of London

Appointments

Chief Medical Officer
Isle of Man Government 1985 - 1990

Chief Administrative Medical Officer
Powys Area Health Authority 1974-85

Hon Lecturer in Community Medicine,
Welsh National School of Medicine

Member of the Welsh Council of the British Medical Association 1976-85

Deputy County Medical Officer,
Hampshire County Council 1971-74

Deputy County Medical Officer
Worcestershire County Council 1969-71

Senior Medical Officer,
Hampshire County Council 1967-69

Senior Medical Research Officer,
East African Trypanosomiasis Research Organisation

Principal in General Practice,
Peterborough, Northants 1959-1964

Senior Medical Officer,
RAF Odiham, Hampshire 1956-1959

House Obstetrician, **St Mary's Hospital, Manchester 1955-56**

House Surgeon: **Withington Hospital, Manchester 1955**

Neville qualified in Manchester in 1954 and first served as House Surgeon at Withington Hospital and then as House Obstetrician at St Mary's Hospital Manchester.

National Service was still obligatory so he joined the Royal Air Force on a 3-year Short Service Commission and served in Fighter Command as Senior Medical Officer at RAF Odiham from January 1956 to December 1958. During this time the station was testing new aircraft, often flying round the clock, and he had to be available on call for very long periods. He decided to use the time to study for a London University external degree in zoology. He travelled to the University of Reading on an occasional free Saturday where the Professor of Zoology allowed him to use the laboratory and kept back specimens for his practical work. In 1958 he was awarded a BSc (Hons) from the University of London.

At this time he was invited to join the Royal Air Force on a permanent commission. As his wife I was approached by his Commanding Officer to try to persuade him. But progression would inevitably have meant working in London and he was a countryman who disliked city life.

By that time we had three children and with a fourth due imminently, we discussed the possibilities and Neville decided to become a general practitioner - ideally in a country practice. He had started to look at advertisements for assistant GP's. But a single-handed retirement practice vacancy came up in Peterborough, then a fairly rapidly

growing town. He decided to apply, and was offered the appointment in mid-December 1958, but only on the condition that he could provide premises and a commitment to offer a service to the existing patients of the practice - 24 hours a day, seven days a week - from January 1st 1959. His Royal Air Force commission came to an end on 31st December.

The RAF had provided a gratuity of £600 and Neville's father (who was by no means wealthy) generously lent us a deposit from his savings to enable us to buy a house (for £3,000). In fact the house we bought in such a hurry soon proved to be in the wrong place, most importantly with no access to a bus service.

It also soon became obvious why there had been little competition to take on the commitment of running the practice. Local GP's had been providing a locum service on the basis that they would take on the patients if, as expected, no new doctor was appointed. And indeed some three-quarters of the patients, fearing that no doctor would take over the practice, had already transferred by the time Neville arrived.

There was, thus, a commitment to provide premises and staffing for a 24 hour a day service, seven days a week, 365 days a year, in return for an annual fee of £1 a year per patient. The practice had shrunk to some 600 patients, providing a gross income of £600 pa. And since this was also a 'Dispensing Practice' there was a further commitment to provide basic medicines to patients in the rural areas who had no access to a chemist. £1 a head per annum was payable for these patients to 'cover' the cost of providing them with basic

medicines for a year - everything except the (then very few) antibiotics.

However the few patients on his list were totally appreciative and he decided that since the town was growing he should stay and aim to grow the practice by offering the best possible service, from a better location on a main road. We made the move to a larger Edwardian family house soon after our fourth child was born and found that patients appreciated a real 'family' doctor.

The practice had previously included the provision of a branch surgery in a nearby village but this was ill-attended and in the wrong place. Neville identified that a rapidly growing village, Werrington, some four miles away, would be a better place to locate a satellite surgery - not least because there were a lot of new houses and incoming families with children. He needed to find suitable premises to rent so I plucked up courage one day to knock on the door of a larger, detached cottage to ask if the owner might have any suggestions. It was a fortunate approach - Miss Wills was a retired teacher who had that very day decided she must give up her home because she couldn't afford to keep it. So the rent we offered was a real god-send to her and she loved the company of people chatting as they waited in her sitting room.

As the numbers grew so that patients were having to queue outside, Neville came to an agreement to buy the house (giving Miss Wills a life tenancy) and build dedicated surgery premises in her garden. It was difficult getting materials and labour and he did a lot of the building work, particularly the carpentry, himself on Sundays - his one day without any surgeries. One memorable Monday morning I got a phone call

at 8am to say that a load of cement had just been dumped in the road. No builders were available to move it, so Neville had to go out there and barrow the concrete into the building, whilst I apologised to the waiting patients in the main surgery.

He tried to introduce an appointment system, especially after he was able to appoint a wonderful secretary to replace a lot of my time, but the patients simply refused and he couldn't impose it. Although it was hard work having surgery in our home, patients loved it and liked the occasional glimpse of a child rushing to get upstairs 'before a patient saw me'. The young mothers from the new housing estate would often ring me to discuss their child's symptoms and check if one of our four had something similar. Neville took on some extra tasks, such as the membership of Employment Boards to assess whether people in receipt of sick-pay could return to work. He also became an Honorary Clinical Assistant to the Consultant in Obstetrics and Gynaecology, which enabled him to continue the care of the patients referred by him for hospital confinement.

The kindness and gratitude of his patients went a long way to compensate for the shortage of money and the gruelling pressure of work. Every day we received gifts: flowers, sweets for the children, crates of vegetables from our farming patients and bottles of home made wine. On one memorable occasion the wine was left in the porch in a small decorative bottle with the patient's name on it and I made the wrong assumption and gave it to Neville for testing as a urine sample. He was really distressed at the levels of sugar - wondering how he could have missed such an obvious case of diabetes - and wondering how to tell his patient. Fortunately she phoned me to ask if we had enjoyed her wine.

After six hard years the practice had grown to afford an assistant (who became a partner and eventually took over the practice) and I hoped for a slightly easier life for Neville. But he really loved his patients and found it hard to sit back and leave their care to some one else. They were virtually our extended family. And the poorest and most outcast received even more of his concern than his wealthier patients.

Gypsies were seen out of surgery hours and treated most courteously. Tramps received even more of his loving care and he did all he could to find them a place to stay in the official shelter. With a letter from a doctor they could sometimes be allowed to stay for 48 hours rather than the usual 24 hours before moving on to the next shelter - which could mean a walk of perhaps 30 miles. Neville would always do his best to help them whilst they were in his care with treatment for their many problems.

Other groups had special needs. He had a lot of patients from the Polish community - many of them suffering from psychiatric illnesses - the results of their imprisonment in the Nazi camps and deaths of family members, and he sorrowed for them and with them.

When there was an influx of Pakistani patients, as they came to get work in the rapidly expanding town, they too had special needs. They lived in tightly packed accommodation - with three times as many men as there were beds for them, so that they slept in shifts, and diseases such as scabies were rife. There were never any women with them to cook so they lived on a grossly inadequate diet. Yet I recall how they would

often bring with them sweets for our children and speak sadly of their own children back home.

Neville felt totally frustrated that there was so little he could do for his patients as he had no diagnostic access to the hospital or testing facilities of any kind and few useful medicines. He eventually decided that he could no longer, in conscience, carry on simply providing the 'sticking plaster' but had to do something more positive. He felt that the future must lie in a real emphasis on preventive health and community medicine and if he was to become more effective he needed to take a year out to study for a Post Graduate Diploma in Public Health. I had hoped that he would start to take life a little more easily, as he could now afford more help, but I understood his frustration. He enrolled in the DPH course at the London School of Tropical Medicine and Hygiene in September 1963. I managed to find living accommodation for him - a room in an apartment of an elderly lady in a mansion block in Gower Street close to the School - though he would still, when needed, catch the train home and take evening surgery. And he always took the Friday evening and Saturday morning surgery and week-end on call. But once the unrelenting pressure of feeling that he was always on call was lifted, the change in him was wonderful to see.

He loved the intellectual challenge of the course and opportunity to see the advances in public health in London and some of the more forward-looking parts of the country - compared to the local situation in Peterborough and the the Fenland area. He could suddenly see how much patients' lives could be improved by co-operation between all the carers.

His Dissertation for the Diploma in Public Health: “Co-operation in Family Care” carried, on its first page, his favourite quotation, *“To keep well is better than to be cured by the best doctor on earth”* and this was always his aim for ‘his’ patients - even when his ‘practice’ became all the population of a large county.

“Co-operation in Family Care” was based on his belief that ‘*an individual can never be considered in isolation from the community of which he is a member’* and ‘*the relationship within the framework of the family is the closest and most permanent, affecting as it does the individual from the moment of conception to that of death’.*

He noted that .. “*It has been recently calculated that apart from doctors and nurses, as many as thirty-three different classes of people can now enter the home and advise on social matters.” “This advice is largely uncoordinated, tending at best to confuse, and at worst to be ignored or even lead to frank antagonisms” “Any degree of co-operation between those concerned with family care cannot fail to be of benefit, not only in avoiding duplication of effort, but also in bringing to the family the advantages of modern medicine and social progress”*

He instanced examples of some groups of professional family care workers where cooperation had proved to be of particular value, including family doctors, home nurses, home midwives, health visitors, social workers, home helps and night watchers and medical officers of health.

He also reviewed the various Official Reports and Acts of Parliament, starting with the “Dawson of Penn Report” in 1920

(which anticipated by over two decades much of what was included in the National Service Act of 1946)

He reviewed the Report of the Medical Planning Commission of 1942 which recommended that a health service should "*a) Provide a system of medical service directed towards the achievement of positive health, of the prevention of disease and the relief of sickness and b) Render available to every individual all necessary medical services, both general and specialist, and both domiciliary and institutional."*…

"Each family or individual should be under the care of a medical practitioner who shall be concerned not only with diagnosis and treatment but also with the prevention of disease"….

"It involves integration of of the preventive and personal health services. It also involves radical changes to the country's administrative machinery and in the training of medical students. It assumes that fusion of public health and other forms of practice will result in practitioners in every field working in close contact".

He also quoted an important Report, "*The Field of Work of the Family Doctor*" which was published in 1963 by a committee under the chairmanship of Dr Annis Gillie, which had been set up to "*advise on the field of work which it would be reasonable to expect the family doctor to undertake in the foreseeable future, having regard to the probable developments during the next ten to fifteen years both in general practice itself, including its organisation, and in the supporting facilities provided by the hospital and specialist and local authority services."*

In considering the relationships between the family doctor and the public health service, the Report considers that "*In all departures from health, social and environmental issues impinge on the medical problems. Co-ordination of the findings and advice of social workers with those of the doctor is essential if work in caring for the community is to be fully effective and not conflict or overlap. The statement that the family doctor should be the leader of the domiciliary team has become a platitude, but he has rarely been the leader, and the reason for this needs to be investigated. He must have direct access to those who are dealing with his patients, and be able to consult with them and share in the control of their activities.*

Full co-operation can be secured best by the attachment of field workers (for example, the nurse, midwife and health visitor) to individual practices. This is already occurring in some areas and must become general. With determination to make the best use of scarce resources we believe difficulties can be overcome even in sparsely populated areas. The family doctor can extend the range of his professional activities by developing the capacity for consulting with various welfare agencies about his patients' particular problems. He may be the only professional person who is aware of some vulnerable families. The changing pattern of disease and of the population structure call for the joint activity which makes a continuing demand on the family doctor's leadership. This secures a two-way flow of valuable information. The needs of the very young and the very old, the handicapped and those with chronic disease and problems of mental health, can then be met by the joint actions of family doctor, local authority and other staff"

Written in 1964 there is still so much in Neville's DPH dissertation that is even more relevant to today and I have transcribed it and will gladly email a copy to any person who may be interested. My email address is sheilaiom@me.com

During his year-long course Neville carried out a great deal of research into best practice in the public health sector but his public health career was put on hold when, whilst at the School of Hygiene and Tropical Medicine he was 'head-hunted' by the Ministry of Overseas Development. He had taken a London external BSc in Zoology earlier and he was now invited to go to the East African Trypanosomiasis Research Organisation in Uganda, where they needed his specialist knowledge, for a three year posting. So in December 1963 our family embarked on SS Braemar Castle for a totally new stage in our lives.

Thus began Neville's next career which is documented in part in his MD thesis "*Observations on the use of Berenil in the Treatment and Prophylaxis of Human African Trypanosomiasis"* and in his MSc thesis "*The Transmission of Mammalian Trypanosomes"*

Trypanosomiasis is a parasitic disease of both humans and animals which can take many different forms. Bringing to the team his clinical experience, his skills as an epidemiologist, and his lifelong interest in entomology and zoology, Neville was able to take a fresh approach. A scientist to his finger-tips, the quotation he placed at the front of his MSc Dissertation sums up his own approach: *"And particularly the avoidance of dogmatising and the espousal of any hypothesis not sufficiently grounded and confirmed by experiments" (Robert Hooke 1635-1703)*

He was conscious of being ‘the new boy” and was at all times respectful and appreciative of other views and contributions. Every time he spoke of their research to me he mentioned individual contributions from other scientists, vets and lab technicians and of how they ‘brainstormed’ to find answers to practical problems. Looking now, on-line, at the Reports of the East African Trypanosomiasis Research Organisation recalls many of those breakthroughs. In the early days a major problem was that of testing local populations in remote rural areas when the only test available required taking blood, injecting it into a mouse, and hoping to keep the mouse alive for the several days rough journey back to the laboratory. Their solution to the problem, by putting finger-tip blood on a piece of filter-paper which could be taken (or sent) back to the lab and checked there for immunoglobulins (IgM) and immunofluorescence (IF) levels, led to a testing method that became standard for many other immunising diseases. The need to find a base-line population who had not been exposed to trypanosomiasis led to expeditions (in our second-hand VW Camper) into the remote parts of Northern Kenya where the population were largely nomadic and there were constant skirmishes - all these stories are behind the EATRO reports now on-line.

There had been an assumption that the disease, which had killed over a million people in one outbreak at the turn of the century, could not spread by direct transmission between people but needed a period in an intermediate host. Neville felt instinctively that was incorrect and after reviewing all the literature he devised an experiment which demonstrated that direct transmission was certainly not only possible but very likely to be a major cause of recurrent epidemics.

He later wrote up his findings and submitted them to the University of London and was awarded the post-graduate degree of MSc. His examiners felt that his work should be published as a text book - but he had too little available time. I intend to transcribe this so that it could be available on-line.

EATRO's main area of research was into the effect of the disease in cattle, and a fairly effective drug for this, Berenil, was available by injection. Neville felt that it must have some additional possibilities for dealing with the human disease. His particular concern was for the patients in the EATRO hospital who were in the most virulent stages of the disease and who were reacting very badly to injections of Berenil. He reasoned that if they could receive a smaller dose orally, then this might avoid the reaction which came from killing off the infection too quickly - the Herxheimer reaction. So he determined the likely dosage to be taken orally and felt he should try it on himself first. When he suffered no ill effects I suggested that I should try it - as women could react differently. He eventually agreed and since I suffered no bad reaction either he then went on to use it to treat very seriously ill patients in the latter stages of the disease to ameliorate their symptoms. He later found that it was a very effective oral prophylactic.

He sent a copy of his findings to the makers of the drug, Hoechst, and arranged to visit them on our way home at the end of his three-year tour of duty. The chairman of the company, even though he was badly crippled, very courteously came to the airport to greet us and arranged a full day for Neville with his team of scientists. They had all assumed that the drug was not effective orally and found it

hard to believe that they had been so mistaken. At the end of the visit the chairman of Hoechst invited us both to dinner. He agreed with Neville that the evidence for the use of oral Berenil in humans was incontrovertible but since there was 'no market' for the drug (ie no customers with money to pay for it) they were not going to take it any further. It was a crushing blow, and very hard to accept. But, sadly, it is the economic reality of life in the Third World.

Neville was therefore delighted to see recently a featured report with colour photographs "*Waking up to Sleeping Sickness"* in the Financial Times Week-end Supplement by Andrew Jack - (the FT's former pharmaceuticals correspondent). He was particularly pleased to read that the company which made the original drugs he tested for oral use is at last going to provide the active ingredient in a pill form - some 50 years after they said that there was no market for it! The work of Medicines Sans Frontiers and the Drugs for Neglected Diseases Initiative with some support from the World Health Organisation is vitally important. But there is still the long-term problem of funding the development of pharmacological treatment for diseases which cannot show a market return. Populations weakened by disease and poverty are as vulnerable to virulent epidemics as ever, and one must question whether the 'sticking plaster' of relying on sporadic emergency efforts of under-funded charitable organisations to pay for life-saving medicines can be morally justified.

As Neville's 3-year tour of duty came to an end, the uprising in Uganda against the country's hereditary ruler, The Kabaka, turned into tribal blood baths and our family, sadly leaving many local good friends, returned to England.

Neville was then offered an appointment as Assistant County Medical Officer to Hampshire County Council (where he had spent some time as a DPH student and which was then, as now, in the forefront of developments). He subsequently became Deputy County Medical Officer in Hampshire and spent some very happy years there working with teams of professionals (and particularly local GP's) to improve the content and delivery of community care.

But in 1974 there was a complete re-organisation of the UK's Health Service and all the medical officers had to re-apply for their own jobs. He was 'short-listed' for some interesting places but was delighted to be invited to become Chief Administrative Medical Officer to the Powys Area Health Authority. The new county of Powys subsumed the former counties of Breconshire, Radnorshire and Montgomeryshire covering about one-third of Wales.

It was a very happy time and he felt honoured to be appointed an Honorary Lecturer in Community Medicine to the Welsh National School of Medicine and a Member of the Welsh Council of the British Medical Association.

We were both delighted when the opportunity arose to buy a Welsh hill farm overlooking the Wye Valley and I took on the responsibility for running the farm and enrolled in a 'Diploma in Farm Business Management Course' at our local college and later an innovative course run by Manchester Business School.

Neville was passionate about management of the countryside and he totally supported my proposals for management of the farm. With the help of a neighbour's son I installed a great

deal of fencing to enable our hedges to regenerate and also to create smaller pastures, enabling our sheep to be moved onto clean ground every few days and so avoiding the need for chemical treatment. I let our grazing for cattle to our neighbours and there was always fierce competition at our grass let auctions.

Neville was a Life Governor supporter of The Royal Welsh Agricultural Society until his death, and he was very proud to be invited to be President of our local village show. He was followed in his Presidency of Elwood Show by Sir John Maddox, then Editor of Nature. Other neighbours who had houses nearby included the former UK Ambassador to Washington and John Fforde, the Chief Cashier to the Bank of England and Tony Thomas, the Business Editor of The Economist. We had some interesting discussions at our Saturday evening suppers when our London neighbours were in residence and with the wonderful bookshops in Hay-on-Wye close by, we all felt very privileged.

Eventually there was another re-organisation of the Health Service and in 1984 Neville's appointment disappeared and he was offered early retirement. I had been awarded a Winston Churchill Fellowship to study the Creation of Small Business and Community Enterprise in the US and Canada, (following on from a charitable trust I had established, (with Neville's support) '*Powys Self Help'*, which had helped convert unused buildings into workshops enabling several hundred people to set up small businesses and community enterprises). Neville kindly volunteered to act as my chauffeur and ferry me to meetings in places as far apart as Washington, Boston, Pennsylvania, Nova Scotia and Toronto. This gave him the opportunity to make his personal pilgrimage

to Walden Pond, to see where Henry Thoreau had lived, for a time, a simple life in natural surroundings. Like Thoreau, Neville believed in the transcendent goodness of people and nature and he shared with Thoreau a love of simplicity. *"Beware of any enterprise that requires new clothes"* was quoted at me more than once.

He was still keen to get back into harness and when the appointment of Chief Medical Officer to the Isle of Man Government was advertised he was tempted to apply. We were sad to leave our farm but the wild beauty of the Isle of Man and its friendly people made up for it and Neville was very happy working in the Island, with a very supportive team of professionals, until he reached compulsory retirement age.

We had been able to buy an old mill set in a glen owned by the Manx National Trust with the Silverdale River running though our garden and he made this into our own 'Walden' for several years until we had to move to our present house when all the stairs became too much. He continued looking after our couple of acres of woodland garden and generously took over all the cooking and shopping to enable me to continue my own work. He was a lifelong supporter of many natural history charities. And he was planting more trees until his death.

Neville took great pleasure in the achievements of all our children and grandchildren and was particularly pleased when our eldest daughter became a GP and then more recently when one of our grand-daughters, Dr Angela Cheverton, gained a PhD working closely with the Regis Professor of Medicine at the Centre for Molecular Bacteriology and Infection in Imperial College to identify the mechanism which

enabled a bacterium to persist within mammalian cells and cause recurrent infections.

He was also very supportive of my own work in economic and community development in the Isle of Man and in London, where I developed projects with several universities and was given a brief by the DTI to design an innovative Wholesale Community Development Finance Institution (CDFI). I was also asked by the Cabinet Office to design a Tradable Investment Company for investing in early stage technologies though this latter ran into position from the investment company 3iii. I became a member of the Small Business Committee of the Bank of England and with Neville's support organised a number of university based economic development conferences.

More recently he urged me to use some of our savings to establish 'The Dardanus Foundation' (named after one of his favourite butterflies) and to create an innovative fund for some pilot projects in social medicine and medical technology - based on my earlier work in this field.

I will append Neville's own very brief description of his work in East Africa, which led to the award of an MSc from the University of London and an MD from the University of Manchester. Both were written and submitted in the period between arriving back from Africa and starting a new career in public health. As we did not know where we should be living, and whilst our three older children had a further term at their boarding schools, we bought a touring caravan and parked it in an orchard in Hampshire. There he wrote both his MD and MSc theses on the small portable Imperial typewriter that had been bought when he first went into General Practice in 1959.

It had served throughout his six years in general practice in Peterborough, for the writing of his Diploma in Public Health Dissertation and the writing of all the technical papers during his three years of medical research in East Africa.

He would have wanted me to end this brief story of his life and achievements with a list of his published papers and publications and whilst doing so I cannot help reflecting on how much easier life would have been had we had our modern Apple computers.

Although the memory of those years - seeing him bent over that sturdy little typewriter and our good-natured arguments over questions of spelling and grammar - is very precious.


EAST AFRICAN
TRYPANOSOMIASIS RESEARCH ORGANIZATION
THESE BUILDINGS WERE PROVIDED FOR TRYPANOSOMIASIS RESEARCH
AND SO FOR THE WELL-BEING OF MAN AND ANIMAL IN AFRICA.
BY THE GENEROSITY AND FARSIGHTEDNESS OF THE GOVERNMENTS OF
THE EAST AFRICAN TERRITORIES AND OF HER MAJESTY'S GOVERNMENT
IN THE UNITED KINGDOM. THE LANDS SURROUNDING THEM WERE
AN ADDITIONAL GIFT BY THE GOVERNMENT OF UGANDA.
THE BUILDINGS WERE DECLARED OPEN BY
HIS EXCELLENCY SIR ANDREW BENJAMIN COHEN, K.C.M.G., K.C.V.O.
GOVERNOR OF UGANDA ON THE 27th OCTOBER 1956


EAST AFRICAN
RESEARCH
ORGANIZATION


SLEEPING SICKNESS CONTROL
(S.S ORD. SEC. 22)
NO PERSON OR VEHICLE MAY PASS
THIS POINT WITHOUT A PERMIT.
PERMITS MAY BE OBTAINED AT
RESETTLEMENT OFFICE AFTER
MEDICAL EXAMINATION.
ABANTU ORA MOTOKA
TERAKUIZIIWA KUVITA WANO
RESETTLEMENET OFFICER
YAGABA OLUKUSA

Dr Neville M. Bailey MD, MSc, DPH 1930-2017

Precis of Research Work Carried Out in East Africa 1965-67

When I took up my appointment at the East African Trypanosomiasis Research Organisation in January 1965 I found that the existing knowledge on the transmission of the mammalian trypanosomes was widely disseminated throughout the literature. I therefore brought together the available information in the form of a dissertation which was later accepted for the Degree of MSc in the University of London. It was at that time held that human trypanosomiasis was transmitted exclusively by cyclically infected tsetse.

Early observations which I made on the epidemiology of the disease were more consistent with the view that under certain circumstances the disease might be transmitted directly between hosts. I therefore devised experiments to demonstrate whether it was possible for tsetse to transmit human trypanosomiasis directly between hosts, in the same way that tsetse and other blood-sucking flies are known to be able to transmit the trypanosomes of wild and domestic animals.

As a result of these experiments I showed that tsetse can be responsible for the effective transmission of human trypanosomiasis, thus explaining in part, the rapid spread of the disease which is a feature of some epidemics.

Further studies on the epidemiology of trypanosomiasis were hampered by the lack of reliable diagnostic techniques suitable for screening large populations at risk to the disease. Working with a veterinary colleague I developed and perfected tests which for the first time made possible the effective screening of large human and animal populations for the presence of trypanosomiasis. These tests are carried out, in the case of man, on finger-puncture blood samples

collected and dried on filter paper, and so overcome the obvious difficulties inherent in the collection of venous blood samples under field survey conditions. The tests detect the presence of fluorescent antibodies in the red blood samples and also the IgM immunoglobulin content of the dried blood using an agar gel single diffusion technique.

The principles used in these techniques have now been applied to the screening of populations for the presence of other immunising diseases, for example human and bovine brucellosis infections. It has also proved possible, by means of a modification of the agar gel single diffusion technique, to determine the species of host on which a tsetse or other blood-sucking insect has fed.

Whilst investigating the pharmacological activity of a number of trypanocidal drugs in laboratory rodents, I discovered that the drug Berenil is active against the pathogenic trypanosomes following oral administration. Both the prophylactic and the curative dose of oral Berenil were determined in a large number of experiments on laboratory animals, and these doses related to the corresponding doses by parental administration. These observations led to the use of oral Berenil in the treatment of human trypanosomiasis in patients under my care (having first tested it on myself).

Previous experience had shown that the pre-treatment of advanced cases of the disease with parental Berenil led to a reduction in the incidence of the severe Herxheimer-type reaction, a reactive encephalopathy, that may complicate the treatment of such patients. The alternative use of oral Berenil almost completely overcomes the development of the Herxheimer reaction, and so reduces significantly the number of deaths occurring during the treatment of this serious disease.

I informed the makers of Berenil, (Hoechst) of my findings and they invited me to visit them at their headquarters on my way home at the end of my three year tour. They had never

considered the possibility of giving Berenil orally as they had assumed it would be ineffective, but they declined to take it further because there was 'no market' for a human treatment. I had written up my findings in a thesis which was later accepted for the degree of MD in the University of Manchester and I gave the pharmaceutical firm of Hoechst a copy when I visited.

Post scripts: (1984)

1. Retrospective long-term study of ***Berenil*** *by follow-up of patients treated since 1965 Tropenmed. Paasit., 35, 148-150 Abaru et al., 1984*

Observations in humans: Ninety-nine patients who had been treated 12-109 months earlier with diminazene for early stage African trypanosomiasis were traced and subjected to a medical examination. Each patient had received 3 doses of 5mg/kg bw diminazene at one or two day intervals. Although diminazene is known to produce a number of side effects in humans, including pain in the soles of the feet, pyrexia, nausea, vomiting and paralysis, no adverse effects were noted in the group (ABARU, D.E., LIWO, D.A., ISAKINA, D & OKORI, E.E. (1984)

2. Only now, fifty years later, through the support of Medicines Sans Frontiers and the Drugs for Neglected Diseases Initiative is it possible "that a simple pill taken over 10 days could be used to treat human trypanosomiasis" (Andrew Jack Financial Times - April 30th 2016)

DR NEVILLE MARTIN BAILEY 1930-2017

Papers and Publications

Bailey, N. M. (1964) **"Co-operation in family care"** Dissertation accepted for the Academic Postgraduate Diploma in Public Health of the University of London.

Bailey, N. M. (1965) **"Some aspects of the epidemiology of Sleeping Sickness on the North Eastern shore of Lake Victoria"** Paper presented at the Biennial Seminar on Trypanosomiasis at the East African Trypanosomiasis Research Organisation, Tororo, November 1965.

Bailey, N. M. (1966) **"Salivation by *Glossina morsitans* onto glass slides after partial feeding on mice infected with *Trypanosoma brucei* subgroup trypanosomes"**. Rep. E. Afr. Tryp. Res. Org. 1965, 24.

Bailey, N. M. (1966) **"The mechanical transmission by *Glossina morsitans* of *Trypanosoma brucei* subgroup trypanosomes".** Ibid, 24-27.

Bailey, N. M. (1966) **"The mechanical transmission by *Glossina morsitans* of trypanosomes derived from cases of human trypanosomiasis"**. Ibid, 27-28.

Bailey, N. M. (1966) **"Some observations on the epidemiology of human trypanosomiasis on the North Eastern shore of Lake Victoria"**. Ibid

Bailey, N. M., Onyango, R. J. and Grange, E. B. (1966) **"The immunoglobulin (IgM) content of the human sera collected during the investigation of an epidemic of human trypanosomiasis"**. Ibid

De Raadt, P., van Hoeve, K., Bailey, N. M. and Kenyanjui, E. N. (1966) **"Observations on the use of berenil in the treatment of human trypanosomiasis"**. Ibid 60-61.

Bailey, N. M (1966) **"The trypanocidal activity of berenil following oral administration and its application in the prophylaxis of human trypanosomiasis".** Paper presented at the Eleventh meeting of the International Scientific Council for Trypanosomiasis Research, Nairobi, November 1966. Rep. Inter. Sci. Comm. Tryp. Res., 11th Meeting, Nairobi, 1966, 159-165.

Bailey, N. M. and Ineichen, B. (1966) **"The epidemiology of human trypanosomiasis in a fishing village on the Northern shore of Lake Victoria".** Ibid 151-157.

Bailey, N. M., Kimber, C. D. and Cunningham, M. P. (1966) **"The indirect fluorescent antibody technique applied to dried blood samples in the diagnosis of human trypanosomiasis"**. Ibid, 169-171.

Bailey, N. M., Cunningham, M. P. and Kimber, C. D. (1966) **"The results of the serodiagnostic techniques applied to dried blood samples in the screening of populations for human trypanosomiasis"**. Ibid, 177-181.

Cunningham, M. P., Bailey, N. M. and Kimber, C. D. (1966) **"The estimation of IgM immunoglobulin in dried blood samples for use as a screening test in the diagnosis of human trypanosomiasis"**. Ibid 165-167.

Cunningham, M. P., Kimber, C. D. and Bailey, N. M. (1966) **"Identification of the blood meals of blood-sucking insects"**. Ibid, 121-122.

Bailey, N. M. (1967) **"The Hospital".** Rep. E. Afr. Tryp. Res. Org. 1966.

Bailey, N. M. (1967) **"Pasteurization of defibrillated bovine blood for use in the artificial feeding tsetse".** Ibid.

Bailey, N. M. (1967) **"The antitrypanosomal activity of berenil following oral administration"**. Ibid

Bailey, N. M. (1967) **"The use of oral beneril in the treatment of human trypanosomiasis"**. Ibid

Bailey, N. M., Cunningham, M. P. and Kimber, C. D. (1967) **"The indirect fluorescent antibody technique applied to dried blood samples in the diagnosis of human trypanosomiasis"**. Ibid

Bailey, N. M, Cunningham, M. P. and Kimber, C. D. (1967) **"Population studies using dried blood samples"**. Ibid

Bailey, N. M., Cunningham, M. P. and Kimber, C. D. (1967) **"The use of dried blood samples in the serodiagnosis of brucellosis"**. Ibid

Bailey, N. M., De Raadt, P. (1967) **"Further observations on the use of parenteral berenil in the treatment of human trypanosomiasis".** Ibid
Bailey, N. M, De Raadt, P. and Krampitz, H. E. (1967) **"The investigation of an epidemic of human trypanosomiasis at Yimbo Location in Central Nyanza, Kenya".** Ibid

Cunningham, M. P., Bailey, N. M. and Kimber, C. D. (1967) **"The estimation of IgM immunoglobulin content of the dried blood samples"**. Ibid

Cunningham, MP., Kimber, C. D. and Bailey, N. M. (1967) **"Identification of the blood meals of blood-sucking insects".** Ibid

Bailey, N. M., Kimber, C. D. and Cunningham, M. P. (1967) **"The indirect fluorescent antibody technique applied to dried blood, for use as a screening test in the diagnosis**

of human trypanosomiasis". Paper presented at the seventh Seminar on Trypanosomiasis organised by the Trypanosomiasis Advisory Panel of the Ministry of Overseas Development, London, October 1966. Trans. R. Soc. Trop. Med. Hyg., 61, 143.

Cunningham, M. P., Bailey, N. M. and Kimber, C. D. (1967) **" The estimation of IgM immunoglobulin in dried blood, for use as a screening test in the diagnosis of human trypanosomiasis".** Ibid, 143.
Cunningham, M. P., Kimber, C. D., Bailey, N. M. and Harley, J. M. B. (1967) **"Identification of blood meals by blood-sucking insects, and their examination for trypanosomal antibodies".** Ibid, 146.

Bailey, N. M. (1967) **"Recent developments in the screening of populations for human trypanosomiasis and their possible applications in other immunising diseases".** Paper presented at the Uganda Medical Association Annual Scientific Conference, Kampala, March 1967. E. Afr. Med. J., 44, 451-457.

Bailey, N. M., Kimber, C. D. and Cunningham, M. P. (1967) **"The indirect fluorescent antibody technique applied to dried blood, for use as a screening test in the diagnosis of human trypanosomiasis in Africa".** Trans. R. Soc. Trop. Med. Hyg., 61, 696-700.

Cunningham, M. P., Bailey, N. M. and Kimber, C. D. (1967) **" The estimation of IgM immunoglobulin in dried blood, for use as a screening test in the diagnosis of human trypanosomiasis in Africa".** Ibid, 688-696.

Bailey, N. M. (1967) **"The transmission of mammalian trypoanosomes".** Dissertation accepted for the Degree of Masters of Science in the University of London.

Bailey, N. M. (1967) **"Observations on the use of berenil in the treatment and prophylaxis of human**

trypanosomiasis". Thesis accepted for the Doctor of Medicine in the University of Manchester.

Cunningham, M. P. and Bailey, N. M. (1968) **"Immunological techniques and their application in the epidemiology of trypanosomiasis".** Working paper presented at the joint FAO/WHO inter-regional seminar on African trypanosomiasis, Nairobi, October 1966, Rep. FAO/WHO Inter0reg. Sem. Afr. Tryp. 1966.

Bailey, N. M. (1968) **"Oral beneril in the treatment and prophylaxis of human trypanosomiasis".** Paper presented at the Eighth Seminar on Trypanosomiasis organised by the Trypanosomiasis Advisory Panel of the Ministry of Overseas Development, London, September, 1967. Trans. R. Soc. Trop. Med. Hyg.,62, 122.

Bailey, N. M. and Boreham, P. F. L. (1969) **"The number of Trypanosoma rhodesiense required to establish an infection in man".** Ann. Trop. Med. Parasit., 63, 201-205.

Bailey, N. M (1981) **"Hydatid Disease, a vicious cycle"** Nursing Mirror 152, No 20.

Palmer, S. R., Howells, C. H. L and Bailey, N. M. (1983) **"Protocol for a study of Hydatid Disease in Wales".**

Bailey, N. M. (1983) **"Hydatid Disease"**