An appreciation of
Paul Freeman
DSc, ARCS, Hon FRES
with a bibliography of his published entomological works

Paul Freeman, like so many biologists of his generation, was fascinated by natural history from early childhood. Paul’s first-hand knowledge of insects, gained in local hedgerows, ponds and woods, laid a solid foundation for the culmination of his scientific career, as Keeper of Entomology at London’s Natural History Museum.

Childhood and Education
Paul was born at Brentwood, Essex, on 26th May 1916, son of a London Post Office engineer. He attended Sir Anthony Browne’s School at Brentwood from 1921-1934. Following award of an Essex Education Committee open Exhibition and Board of Education studentship, Paul enrolled as an undergraduate at Imperial College of Science and Technology (University of London), at South Kensington. Three years later, in summer 1937, he graduated with First Class Honours in Biology (Entomology), became an Associate of the Royal College of Science, and was awarded the Marshall Prize as the best biology student in his year.
Paul’s first professional position (1937-1939) was as a Demonstrator at Imperial College, where he was also employed as a research assistant on African cotton pests. During this period he was elected to the Fellowship of the Royal Entomological Society of London, in 1938.

As WWII became inevitable, Paul volunteered for the Royal Artillery. Commissioned in 1940, he was initially posted to anti-aircraft duties, and spent two years as Brigade Intelligence Officer. In 1942 he was seconded to the Ministry of Supply’s Army Operational Research Group, based in Petersham, Surrey, where he spent the rest of the war, reaching the rank of Captain. In this role he spent several months in Belgium engaged on counter-measures against Nazi V2 rocket attacks.

As soon as the war ended in Europe, Paul returned to Imperial as a Lecturer in Entomology and resumed work on the taxonomy of Old World cotton insects – notably various Pentatomidae and Pyrrhocoridae. His publications soon earned him an MSc, awarded in 1946.

At the Natural History Museum
In 1947 Paul moved the few hundred yards separating Imperial from the Entomology Department of the British Museum (Natural History) (now Natural History Museum: NHM), to take up a Senior Scientific Officer post in the footsteps of the late Frederick W. Edwards, the Museum’s former specialist on lower Diptera – the so-called “Nematocera”. However, unlike Edwards, Freeman was not given responsibility for the mosquitoes, which were entrusted to a colleague, Peter Mattingly, who had been offered an SSO post the previous year. Mattingly proved to be an outstanding mosquito taxonomist who also had great insight into the biology of mosquito-borne diseases. A third graduate member of the Museum’s Diptera team at that time was Harold Oldroyd, a specialist on “Brachycera”, and for many years Paul and Harold were close friends as well as professional colleagues.

Over the following 50 years, in a total of some 80 publications on Diptera, Paul described more than 500 new species, with an emphasis on Simulidae, Mycetophilidae, Sciaridae, Scatopsidae and Chironomidae (see Bibliography, below). Paradoxically, since Paul was not much attracted to the simuluids, it was on this important family that he produced his outstanding taxonomic achievement, *The Simulidae of the Ethiopian Region* (1953). This book was the outcome of a symbiotic arrangement between Paul and Botha de Meillon, an entomologist at the South African Institute of Medical Research. They never met but nonetheless produced a seamless volume – the joint publication dictated because many of the type specimens were in Johannesburg. Paul, however, was the mastermind. The great virtue of the work was that, after years of frustration, medical entomologists could identify Afrotropical blackflies, or at least set about the task with confidence. The work remains of special value to fieldworkers involved with onchocerciasis (‘river blindness’), a human filarial disease which has undergone an explosion of research
(Above) A long view of one wall of Freeman’s Insect Gallery at the NHM, taken just before it opened in October 1968. The contemporary, cool, almost ‘Scandinavian’ style is notable, as are the very large etched images of insects created from Arthur Smith line drawings. To the right is part of the “butterfly screen”.

Photograph: NHM Archives.

(Right) The so-called “butterfly screen”. In reality this eye-catching display, designed to draw visitors into the cul-de-sac gallery, comprised many sorts of large, impressive and colourful insects. Also intended to evoke a sense of wonder and curiosity, the rationale of this wonderful display was totally lost on the coming generation of exhibition specialists, who foolishly denigrated it for its supposed lack of didactic content!

Photograph: NHM Picture Library.
and in which "Freeman & de Meillon" played a key part—a book with landmark status. In addition to the written work, in the late 1940s and early 50s Paul was the key person for simulid identification, and generous with his time. More than a few entomologists of the old Colonial Service, with specimens brought home on leave from Africa, were grateful for his expertise—"Take it to the B.M., Freeman will know what it is."

One third of Paul's scientific publications concerned the Chironomidae. His work on this major family of non-biting midges helped underpin much environmental research into freshwater quality. However, to contemporary specialists he is now best known for his outstanding contribution to untangling the taxonomy of the chironomid fauna of sub-Saharan Africa. The results were published as four parts of the Entomology series of the Bulletin of the British Museum (Natural History), in 1955, 1956, 1957 and 1958. These major works were followed by large papers on the Chironomidae of New Zealand in 1959, and of Australia in 1961 (see Bibliography). Later, in collaboration with Peter Cranston, he wrote the Chironomidae part of the Catalogue of the Diptera of the Afro-tropical Region (NMM, 1980), a Diptera Section project to which he gave his keenest blessing—and stoutly defending the editors when it inevitably took longer than planned.

In his work on the African midge fauna, Paul was confronted with the problems posed by Abbe J.J. Kieffer, whose work he described as "very erratic", noting his "very uncertain" concepts of genera, paucity of illustrations, and re-descriptions of the same species "over and over again not only in different papers but even in the same one". Although Paul examined as many of Kieffer's types as could be found (many are lost amongst the 300 Kieffer described from the region), and he disentangled the taxonomic confusion as best he could, he concluded that more collecting was needed at the various type localities. Unfortunately much still remains to be done in this regard, even more than 50 years on.

In a different role, Paul's efforts on behalf of the 12th International Congress of Entomology, held in South Kensington in 1964, were another outstanding step in his career. He was Organiser and Honorary Secretary for the Congress, 1960–1964, at which some 800 papers were presented, with 1800 delegates from all over the world.

As a result of his research productivity and proven organisational ability, he was promoted in 1953 and again in 1965, when he became one of the department's two “Deputy Keepers”. Then, in 1968, he was appointed Head of Department, or Keeper of Entomology. In 1971 Paul reached his final Scientific Civil Service rank of Deputy Chief Scientific Officer, after which he continued as head and leader of NHM entomology until his retirement ten years later, at the age of 65. Just days before his retirement, he was formally presented to the Queen during the royal visit that marked the 1981 centenary of Waterhouse's great museum at South Kensington.

**Paul Freeman: the man**

In his private life Paul was interested in theatre and literature, especially poetry and the works of William Shakespeare. Paul was also a very enthusiastic gardener, and encouraged both his daughters in this pursuit. Practical (he was very keen on 'DIY' around the home), possessed of great energy and enthusiasm (he rarely used a lift, preferring to bound up stairs several at a time), above all he was a devoted family man. In 1959, when awarded his DSc by the University of London, he told colleague Roger Crosskey that he was more pleased for his parents than himself, as they had sacrificed so much to give him a good education.

Paul also had a great and frequently wry sense of humour, and his characteristic laugh could often be heard about the Department. Roger Crosskey recalls: “One day Paul and I were walking through the public galleries when we passed an anthropology exhibit that featured a naked figure of a small Neanderthal woman. Her left hand was grasping a long upright stave, while her right hand was curved round it, almost touching the tip. ‘Just look at her’ Paul exclaimed, ‘she’s chalking her billiard cue!’”

**Paul Freeman: his influence and legacy**

Paul Freeman's contribution to entomology extended far beyond his own research. Three years before his appointment as Keeper, Paul had been given special responsibility to replace the NHM's antiquated and run-down entomology exhibition. The new Insect Gallery opened to the public in October 1968—the same month in which he was appointed Keeper. In place of the former serried rows of browsing insects and turgid text the new gallery charmed and informed the public with a colourful display that highlighted the remarkable diversity of insects as the most abundant life form on Earth. Drawing on his remarkably broad entomological knowledge, he engaged the public with the simple beauty and extra-ordinariness of insect life. He was the last NHM Keeper to mastermind and create a major gallery at the Museum, being responsible not only for the content and storyline but also the display of material. In the final stages of the gallery's preparation he was to be found personally placing specimens in their new cases and checking the labels and illustrations for their ability to inform.

A curiosity about Paul's influence in this context is that, despite his great knowledge of general entomology, based in part on his childhood experience, he was not enthusiastic about his staff doing research on British insects. After about 1948 he did very little fieldwork—in the UK or abroad. Paradoxically, at this same time and again much later he made significant contributions to the RESL Handbooks for the Identification of British Insects series (publications [14–19] and [77-80] in the Bibliography). Another oddity was his standpoint on artwork. A competent illustrator himself, he insisted that any researcher should be able to illustrate his or her own papers. In this regard he was less sympathetic than usual towards his colleagues, even though it was undeniable that taxonomists vary greatly in their artistic abilities.

Another very individual, one could even say idiosyncratic approach to his job as Keeper was the way in which Paul handled the Department's interface with the general public. He seemed to see himself very much as a public servant, which meant, for him, giving a high priority to the museum's collections and core research activities and, perhaps above all else, its direct dealings with the "outside world". However, he was not interested in...
entrepreneurial ventures as such, even though some of his younger staff were beginning to look for ways to make museum work more valued.

Realising that Paul spent a good part of almost every morning dealing personally with public correspondence and telephone calls, Peter Hammond recalls asking him if it might be a good idea to make some of this the job of a dedicated enquiry service – thereby relieving him of routine tasks, being a bit more proactive, and even generating income. Although this sort of arrangement eventually came to be, Paul was not keen on the idea – and explained why.

Paul personally handled most ‘general’ enquiries from the public himself, identifying virtually all the common pests sent in, and only going to other members of staff to double-check or if he was in doubt. As a result, a large part of the Department’s interface with the outside world was handled by him personally. Paul claimed, with much justification, that this kept his feet on the ground, his finger on the public pulse – and also led to daily dealings with many of his staff, some of whom he might otherwise have had little contact. When pressed he admitted that this could be useful in management matters, as it did provide him with insights into just how knowledgeable, clear-thinking, literate and efficient members of staff were, even the most junior. Paul added that he also simply enjoyed this sort of activity – he felt he was good at it (and indeed he was) and that the public, our masters, deserved the best!

Paul made very significant contributions to the Royal Entomological Society of London, and to a number of international committees. For the RESL he was a Finance Committee Member 1954-1957, a Council Member 1963-1965, Chairman of Publications Committee 1955-1957, Vice President in 1956 and again in 1957, and Honorary Secretary 1958-1962. He served on the Permanent Committee of the International Congresses of Entomology (ICE) 1964-1976, an honorary secretary and entomology representative to the International Union of Biological Sciences, and a member of the World Health Organization’s Expert Advisory Panel on Parasitic Diseases. Through these activities, and in particular his active role within the RESL and for ICE, he contributed a great deal to the networking that underpins any successful scientific discipline. This was later recognised in 1984 by Honorary Fellowship of the Royal Entomological Society, and appointment in 1988 as an Honorary Member of the Council of the International Congresses of Entomology.

As a researcher his output on the Simulidae and Chironomidae had influence because of the great importance of these groups for medical entomology and ecology, respectively. His general knowledge of natural history and entomology informed his passion for the Insect Gallery which, created in collaboration with a small team that included John Abraham and artist Arthur Smith, was a very forward looking, attractive and informative exhibition – sadly demolished long since, and incomparably better in the opinion of many than the arthropod gallery which has now replaced it.

In the post-WWII era, the Keeper of Entomology position at the NHM was one of a handful of influential posts in insect science worldwide. Soon after his appointment to the keepership in 1968, Paul had the idea that the Department should mount a major entomological expedition. He sounded ideas from senior colleagues, and West Africa was favoured. But once detailed plans were drawn up, and vehicle hire, hotels and other expenses taken into account, he was aghast at the total cost.

Not wishing to be defeated, Paul asked dipterist Brian Cogan to sound out junior members of the Department to see if a different and more cost-effective way of mounting an expedition might be possible. As a result, five younger staff, including Brian, came up with a plan that involved buying a surplus three-tonne army truck, converting it to a mobile laboratory by themselves, shipping it to Cape Town, and then undertaking an 8000 mile journey through Namibia, Angola and Botswana. In hope rather than expectation they went back to Paul. To their amazement, when he understood their vision (and the much reduced total cost!), he backed what to many at the time seemed a totally hare-brained scheme, inevitably doomed to failure. However, the Entomology Department’s South Western Africa Expedition 1971-1972, no doubt to Paul’s relief, was a great success. Moreover, all members of the team not only returned in good health but also hugely improved as fieldworkers – and all went on to
further enrich the Museum’s insect collections through subsequent expeditions, and also training new staff in turn.

In retrospect it still seems remarkable that Paul backed this scheme. However, it can now be understood in terms of his attitudes to younger staff and their development – perhaps reflecting his own earlier needs as a young scientist from a relatively humble background, and the faith that his parents and others around him had in his own native ability.

Paul was fortunate in that he led the department at a time of financial expansion, enabling him to increase the staff from about 60 to almost 100. However, as NHM Director Ron Hedley later pointed out, with a flat budget and extrapolating from the increasing costs of the library in the 1980s, the number of scientific staff would have to fall drastically. Following Paul’s retirement this proved to be true. At the time of Paul’s retirement he was responsible for 97 Museum staff – almost double the number of entomologists paid for directly by the Museum now. The golden age of descriptive taxonomy in the department was over.

However, as staff numbers grew during the late 1960s and 1970s, managerial change became a necessity. Against a backdrop of anachronistic hierarchy Paul had a genuine interest in his staff as individuals. Quite typically he later commented: “it was important to look after the junior staff as the senior staff can look after themselves”. His style might have appeared paternalistic at times, drawing on his experience as a deeply committed family man, but his actions were always well intentioned. His fostering of young scientists led to a cohort of entomologists who went on to make a significant impact internationally.

This is well demonstrated by the career of Peter Cranston. In 1971 Peter applied to join the NHM to work as an assistant on birds, but at interview was told the post had already been filled. Paul suggested he should consider working on insects instead, pointing to the Museum’s generous policy on work-release to pursue higher education, and extolling the pathways that an enthusiastic junior member of the staff could pursue as a career. So persuaded, and shortly after joining the Museum, Peter became an assistant on Nematocera and was encouraged to curate part of the chironomid collection in light of Sepp Fittkau’s major 1962 work, *Die Tanypodinae*. Peter faced a steep learning curve – it was in German for a start (no Google translator to assist in those days!) and dealt with features that could only be seen on good slide mounts with very high power magnification.

When Peter decided to undertake a PhD, it was natural to stay with the Chironomidae. With continuing guidance from Paul, and input from university ecologist Alan Hildrew, he chose to work on immature Orthocladiinae. This was all before the days when museums saw a role for themselves in higher education. But, as promised at Peter’s original interview, Paul was very supportive throughout. Peter feels very strongly that his career owes its entirety to the recruitment promise made and delivered by Paul Freeman.

Paul also had a more general influence on the research careers of those around him. Long before the ‘publish or perish’ dictum came to be an all-consuming influence on young scientists, Paul made it clear that he thought research was wasted if it was not written up and published – and it should be done so in a timely manner. This seemed, rather like his desire to give public enquiries high status, more moral conviction than management mantra. Simply put, he felt that if the taxpayer had paid for the research then there was an obligation to complete the work by publishing it. He also made the point that research was a “habit” – a habit that needed to be developed early if a scientist’s career were to be successful. Paul expected each of his research staff to have at least a couple of short papers in press at any one time, with a substantial publication every three years. He often said that he wished he could have training in how to select staff in order to get “winners”, as he liked to put it.

In many ways Paul Freeman’s approach to staff and science management was instinctive, and he was also blessed with an abundance of common sense. Although not renowned for being the most overtly ‘scientific’ leader, many of those who worked in the NHM over the past 50 years agree that Paul Freeman was the best Keeper in the 100-year history of the Museum’s Department of Entomology, as four of his former staff have reminisced: “I remember my time under his keepership as the happiest I had in the museum”; “[he] always supported any proposal that one might make providing he agreed with you”; “in retrospect it is clear that I would have achieved little without the backing and encouragement that he gave to younger members of staff; he was also a most sympathetic man-manager”;
“Paul Freeman was a dynamic individual and undoubtedly the best Keeper of the four that I served under – there is no doubt that he did more for the development of the Department than anyone I can think of. At a personal level, he did much to further my career; moreover, he was always willing to listen and if I put my case convincingly, he took positive action immediately.”

A specific example of Paul’s supportive approach is recalled by Roger Blackman: “Acting on advice from Vic Eastop and Laurence Mound, he recruited me in 1972 as a research fellow to study aphid intraspecific variation and cytogenetics, a new departure for the Department. He ensured that funds were available for all the new laboratory equipment and insectary facilities that were needed, and above all he was always ready to listen to any new ideas, however unorthodox or foreign to his own experience they might have seemed. I remember going to see him in the mid-1970s with the idea of employing Paul Beranek from Royal Free Hospital for a few weeks to set up a laboratory for starch gel electrophoresis, which was then the latest way forward for aphid genetics. He readily agreed to this, probably because he was impressed that we had found a way to do this on a minimal budget of, I think, about 250 pounds – which was not a lot, even then!”

On 10th April 1942 Paul married Audrey Margaret Long, his wife of 68 years. He is survived by Audrey, daughter Margaret, four grandchildren and two great-grandchildren. Clare, his first daughter, predeceased him in 2005. His funeral, which took place on 9th August 2010 at Beckenham Crematorium, was followed by a memorial service at the Church of St Francis of Assisi, close to the family home in Potts Wood, Kent.

Finally, Roger Crosskey has identified a blackfly that was biting two of the entomologists present during Paul’s funeral as Simulium (Simulium) noelleri Friederichs. Apparently this is quite an interesting record and the specimen, suitably labelled, is now on its way to the NHM collection! Needless to say the captors included members of the SWA expedition.

The following obituaries and notices have appeared:


The authors of this memoir are very grateful to members of Paul’s family, especially Audrey Freeman, Margaret Evans and son-in-law Paul Evans, for their willing and generous help. Paul’s grandson Gwyn Evans also very kindly agreed to inclusion of “For Grandpa”, first read at the memorial service. We also acknowledge the help of Val McAtear at the RES, and Daisy Cunynghame, Eloise Donnelly and Sharon Touzel at the NHM.

Bibliography: the entomological publications of Paul Freeman

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Within his total of 86 publication Paul Freeman introduced many new taxa: 35 new genera (36 names) of Diptera, all accepted today as valid today, 565 new species (576 names) of Diptera, of which 524 are still accepted as valid, and 3 new species of bugs (Hemiptera). There are more names than taxa because some names, at the time of introduction, were homonyms for which he later proposed replacements. As with all taxonomic work, it can be important to know exact dates of publication. Any additional information on precise publication dates would therefore be welcome.

Where we have found printed information from journals regarding month of publication we have added this in square brackets at the end of the entry. Thus [05] following a citation indicates that publication is claimed to have occurred during May of the year stated. Where we have information for both month and day, this is added in the form [05.31] (indicating publication on 31st May in the given year). If our only information comes from a date-of-receipt stamp or equivalent source, and it is thus certain that publication could not have been later than the date given but was probably earlier, we indicate this with the word ‘by’. Thus [by 1984.02.16] signifies that we have found proof of publication by the given date (16th February 1984), but it may well have occurred earlier. The particular paper in question is normally cited as “1983”, which in this case we continue to accept. The list is presented in the order of publication indicated by the dates we have found, or, where we are uncertain, in the sequence we believe is most likely to represent the correct order.

We are most grateful for help received not only from Paul Freeman himself, many years ago, but also Roger Crosskey and Julie Harvey.


Freeman, P. 1946. Further notes on the hemipterous genera *Calicida* Laporte (Scutellerinae) and *Nezara* Amyot & Serville (Pentatominae). *Proceedings of the Royal Entomological Society of London* (B) 15: 32. [04.15]


Freeman, P. 1948. Two new species of Chironomidae (Dipt.) from Britain. *Entomologist’s Monthly Magazine* 84: 49–50. [04.01]


Freeman, P. 1950. A subapterous species of *Tipula* (Diptera) from East Africa. *Entomologist* 83: 61–63. [03 by 17]


Freeman, P. 1951. Mycetophilidae. *Diptera of Patagonia and South Chile based mainly on material in the British Museum (Natural History)* (3): vii+138 pp., 49 pls. British Museum (Natural History), London. [no date information]


Freeman, P. 1952. A new genus and species of Mycetophilidae (Diptera), allied to *Psyxia* Johannsen, from a cave in Italy. *Bollettino della Società Entomologica Italiana* 82: 20–23. [05.31]


Freeman, P. 1953. Chironomidae (Diptera) from western Cape Province—I. *Proceedings of the Royal Entomological Society of London* (B) 22: 127–135. [08.15]


Freeman, P. 1953. Chironomidae (Diptera) from western Cape province—II. *Proceedings of the Royal Entomological Society of London* (B) 22: 201–213. [12.31]

Freeman, P. 1954. Chironomidae (Diptera) from western Cape Province—III. *Proceedings of the Royal Entomological Society of London* (B) 23: 17–25. [02.27]


Freeman, P. 1959. A study of the New Zealand Chironomidae (Diptera, Nematocera). *Bulletin of the British Museum (Natural History)*, Entomology 7: 393–437, 1 pl. [01]


Freeman, P. 1970. A revision of the species of Macrocreta (Diptera, Mycetophilidae) from the Ethiopian zoogeographical region. Journal of Natural History 4: 363–367. [07.08]


For
Grandpa

Gwyn Evans, 5th August 2010

It’s hard to catch the memories,
Most of my life, you both retired,
You’d planned your future thoughtfully
and had the living room rewired

A garden perfect for a child
with pond and fountain, wood and briars,
Clean shirts upon the washing line
that swung on hangers as they dried.

You made the best of stuff you had,
Building your own as you required,
The custom kitchen cupboards housed
arrays of tupperware and tins,
Sticky flapjacks. Murray mints,
Special treats for special days
With lemon barley, ticking clock,
In hallways of serenity
Up where the stairwell led the way
To wooden graves where insects lay
Immobilised, and skewered by pins and
Speared in corners of the world
When stalked and taken by surprise
For entomology they died
those little bugs with nasty stings or
Stripy shiny thoraxes
Fine lacy wings and spiny legs
Antennae and proboscises,
Male and female side by side,
With Latin names immortalised:
Drowned in ether. Organised.

"I don’t take condiments!" exclaimed
Before each meal, the table laid with
Butter, eggs and marmalade and
Coloured pills and sky-blue plates.
To break the fast in formal ways
Little routines that kept the pace
While lazy grandchildren slept on
Still undisturbed by rattling trains.

And as the years rolled by you’d sit and
Think, and read, apply your mind
in your front room - the draughty bit - with
Cryptic clues words hard to find.

You’d shout if Audrey couldn’t hear
As she prepared the daily meals,
Routines where you would wash the plates
In yellow gloves, relentless heat

It must have been frustrating to
remember when you walked and ran
And cycled all the way to school
Day in day out with discipline,
Reciting Shakespeare when you could
And watching bugs in rotting wood.

Perhaps the time had come at last
When life jumped on at twice the rate
And playing catch-up tiresome aches that
Bothered you, became a strain with
Memories that could not wait,
Took hold of you,
Controlling you,
Set in their ways,
Compelling you,
Calling you back from modern life to
Where you were when you were young,
Confusion and irrelevance
Kept cropping up in turbulence
Things going wrong,
Life not the same,
And as the lights began to fade
As shadows grew,
Your wife remained to
Pray for you and hold on tight
In love with you and by your side
To hold your hand and help you fight
To comfort you ‘til
End of life.
Citation of this paper:

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