

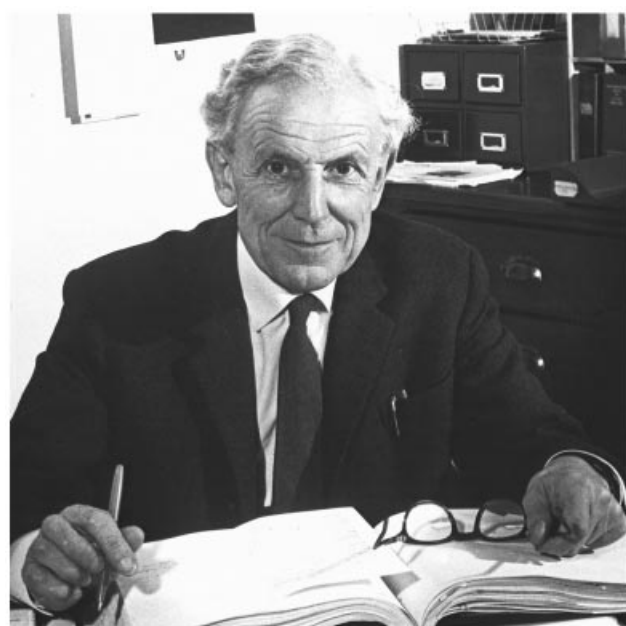
Obituary

Geoffrey Clough Ainsworth (1905–1998): mycological scholar, campaigner, and visionary

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Geoffrey Clough Ainsworth (1905–1998) at work annotating his interleaved copy of the *Dictionary of the Fungi*.

Geoffrey Clough Ainsworth was a mycological scholar of distinction, with an unparalleled knowledge of the bibliography and history of the subject. An indefatigable worker and campaigner for all aspects of the mycological cause, his contributions to the documentation and internationalisation of mycology have had enormous and on-going influences.

Geoffrey was born in Birmingham on 9 October 1905, the only son of the Rev. Percy Clough Ainsworth. Educated at Ipswich Grammar School and Kingswood School in Bath, he proceeded to the then University College Nottingham, obtaining first class honours in botany in 1930. *En route* in 1929, he obtained a certificate in pharmacy and was awarded the Pharmaceutical Society's Silver Medal and Harrison

Memorial Prize. He was then lured into plant pathology, first working as an assistant at Rothamsted Experimental Station from 1930–31, and then as a virologist at the Experimental and Research Station in Cheshunt, Hertfordshire, from 1931–39. The period at Cheshunt was an enormously productive one for Geoffrey. He took a particular interest in virus diseases of horticultural plants, on which he started to publish profusely, including the first of many contributions to *Nature* in 1936. At the same time he obtained a PhD from the University of London in 1934, and compiled his first book: *The Plant Diseases of Great Britain* (1937) – a bibliographic account of the different diseases caused by bacteria, fungi and viruses arranged by host.

While working on this book he became an avid user of the *Review of Applied Mycology*, and later said that he was then better informed than he had been ever since. He first visited the then Imperial Mycological Institute (IMI) at Kew on a Plant Pathology Committee field-day in 1932; he was to become closely associated with the Institute for much of his life. He had previously met the Director then in post, E. J. Butler, who had interviewed him for a post in Malaysia for which he had been 'found wanting'! Butler evidently warmed to Geoffrey after they met again during the International Botanical Congress in Amsterdam in 1935, and he joined the staff as an Assistant Mycologist in 1939, remaining there for the duration of World War II. His duties involved contributing to the *Review* and becoming an authority on British smut fungi, but it was an effect of the war that was to yield a major benefit for mycology.

The Institute had to be staffed 'during the hours of darkness', and it was during weekly 'fire-watching' stints with G. R. Bisby that, punctuated by air raid warnings, the contents of the Institute library were paged through. Data for *A Dictionary of the Fungi* were assembled on 5 x 3 inch index cards, regrettably now lost. Progress was aided by Bisby's 'ability to make without delay a working decision from the

evidence available' (Ainsworth 1959). During 'alerts' they were often lured away for hot drinks by residents on Kew Green, including the Leader of the Liberal Party, J. Grimond MP. In the daytime, Institute staff 'dug for victory' in allotments where the Royal Botanic Gardens' Library now stands, and Geoffrey is reported as leaping from branch to branch collecting apples from trees in the Institute's grounds. Geoffrey had become an enthusiast of the Basic English of C. K. Ogden, with whom he collaborated, and this was used in the *Dictionary*. S. P. Wiltshire, the Institute's Director at this time, secured paper and permission to use it for this book, and the *Dictionary* first appeared in 1943. The first copy which arrived from the printer was sent to the Office of the Privy Council for the information of the Prime Minister, Sir Winston Churchill, on Ogden's request; Churchill was also a supporter of Basic English. The *Dictionary*, developing and expanding through later editions, and computerised as early as 1981 for the 1983 edition, was destined to become the *vade mecum* for mycologists of all kinds. Geoffrey provides fascinating insights into his first period at the Institute, including features of the staff and their ways of working, in the Preface to the 7th edition of the *Dictionary* (1983) and his contribution to *IMI: Retrospect and Prospect* (1993). Work on the *Dictionary* led Bisby & Ainsworth (1943) to consider how many fungi there might be in the world; they first estimated 100K species, but Ainsworth (1968) later raised this to 260K, suggesting that they were at least as numerous as the flowering plants, something that botanists hardly suspected.

Geoffrey's concern over training in mycology developed during this period at Kew, and he played an active role in the preparation of a report by a committee of the British Mycological Society on *The Need for Encouraging the Study of Systematic Mycology in England and Wales*. This was distributed to government departments, research stations, colleges, and universities in 1944. The text was published in the Society's *Transactions* in 1949. Many of the sentiments and concerns identified then regrettably remain pertinent today.

At the end of the War, and with two young children, he found himself caught in the 'poverty trap' built into the Institute's long incremental salary scale. He left to head the Mycological Department of the Wellcome Physiological Research Laboratories in Beckenham, Kent, at twice the salary, in 1946. There he had a staff of about 35 engaged in antibiotic research, including penicillin, streptomycin (publishing on large-scale production methods), and their own discovery aerosporin (from *Bacillus aerosporus* and active against Gram-negative bacteria). Increasingly fascinated by the fungi that could harm animals as well as plants, he became the Wellcome Trust's Research Fellow in Medical Mycology in 1947–48 carrying out much-needed surveys of human and animal fungal diseases. During this time he was based at the London School of Hygiene and Tropical Medicine and as such was a natural successor to J. T. Duncan, the retiring Director of the Medical Mycology Laboratory in the School. This post was denied to him as he was not medically qualified. Despite much discouragement his enthusiasm for this opening field of mycology led to a new burst of synthetic publications, as well as original work on, for example, aspergillosis in birds and mammals.

From 1948 to 1957, Geoffrey worked as lecturer, and later reader, at what was then the University of the South West in Exeter (now the University of Exeter). This was a very productive period in which he had time to write up more of his work on topics such as smuts (*The British Smut Fungi*, with K. Sampson, 1950) and medical mycology (*Medical Mycology*, 1952), and further develop his ideas on the principles of taxonomy in microbial groups, and also the rules governing their nomenclature. Some of the latter publications were particularly farsighted, including the need to register newly published names (Ainsworth & Ciferri 1955) – something still being debated at (but not yet implemented by) International Botanical Congresses – including that in St Louis in August 1999. An advocate of microcards (Ainsworth 1955), he encouraged the publication of original diagnoses of new fungi on such cards as a supplement to the second volume of the *Index of Fungi*. Sets were prepared in 1955–57, but the practice ceased due to copyright and paper problems; an equivalent computerised initiative would be a boon today. His interest in the history of science also started to blossom during this time, and he discovered that William Roberts of Manchester first showed that a *Penicillium* was active against bacteria in 1872–73 (Ainsworth 1950).

At Exeter he especially developed his interest in medical and veterinary mycology with Phyllis Stockdale in working on the nutritional requirements of dermatophytes, and with P. K. C. Austwick in carrying out an Agricultural Research Council survey of animal mycoses. During this time he organised the very first course in veterinary mycology attended by cooperating members of the Veterinary Investigation Service and by lecturers from each of the seven UK veterinary schools. As a direct result of the survey the Ministry of Agriculture Fisheries and Food established a Mycology Section at the Central Veterinary Laboratory in Weybridge in 1954.

He was Secretary of the Medical Mycology Committee of the Medical Research Council for 10 years and was invited to initiate a series of annual meetings under the Committee's auspices. It was on the strength of these meetings that the British Society for Mycopathology (now the British Society for Medical Mycology) was formed in 1964. There is no doubt that the present importance of medical mycology in public health is largely attributable to Geoffrey's diplomacy and skill in bringing together doctors, veterinarians, and mycologists; from this evolved the present teaching posts in the discipline in the UK's medical schools. He was involved in the foundation of the International Society for Human and Animal Mycology (ISHAM), and served as its first Secretary (1954–66).

In 1957 he returned to what had in his absence become the Commonwealth Mycological Institute (CMI) in Kew, serving successively as Assistant Editor (1957–60), Assistant Director (1961–64), and finally Director (1964–68)—a position he was reluctant to accept so close to his retirement, but embraced enthusiastically, starting with a global tour to determine what the world's mycologists needed. These proved challenging times, necessitating often difficult exchanges with the then Commonwealth Agricultural Bureaux's hierarchy on subjects such as establishing extra mycological posts and the need for

less antiquated microscopes; on several occasions he even threatened to resign if the Institute's needs were not met. He resisted attempts to change the acronym used in the collections from IMI to CMI, convinced that in due course the 'I' would stand for 'International' and not 'Imperial'; that change took from 1948 to 1990.

Undaunted by administration, his personal productivity continued, most noticeably with the development of plans for an authoritative synthesis of all aspects of mycology in the four-volume (the fourth split into two) *The Fungi: an advanced treatise* (1965–73), edited first with A. S. Sussman and later also with F. K. Sparrow. This work was the most ambitious mycological project of its time, involving 105 contributors. There should have been a fifth volume devoted entirely to lichens, but the person who agreed to help in that task did not deliver. Geoffrey saw the need to integrate lichenology into main-stream mycology, and to this end recruited G. Morgan-Jones to the Institute in 1966, ensured lichenology was well-represented in the First International Mycological Congress, and decided to include lichens in the 1971 edition of the *Dictionary* (something that came as a shock to many at the time).

In retirement, first to Treligga (nr Delabole, Cornwall, in 1968–77), then to Topsham (nr Exeter, Devon, in 1977–81), and finally Derby (where his daughter Sarah lives, in 1981–98), he devoted his energies to the history of mycology, searching out and delving into old files and books to discover who really found out what and when; this necessitated many short trips on the train to the Institute and Wellcome libraries. An unparalleled trilogy of meticulously researched histories resulted, all modestly termed 'introductions': *An Introduction to the History of Mycology* (1976), *An Introduction to the History of Plant Pathology* (1981), and *An Introduction to the History of Medical Mycology* (1986). These works are all much sought after and invaluable reading to all coming into the field. Regrettably, he declined to pen a fourth 'history' on industrial mycology as so much evidence was confidential and secured in company archives, although he was uniquely equipped for that task as well. Recognizing the approach of the British Mycological Society's centenary in 1996, he then embarked on a series of biographical profiles of British mycologists (including lichenologists and plant pathologists) in *The Mycologist* (1987–94). For the centenary itself, and as he started to become increasingly unwell, he prepared *Brief Biographies of British Mycologists* (1996), a characteristically comprehensive study seen through the press by J. Webster and D. Moore. His biographical files are now preserved in the CABI Bioscience Library in Egham.

However, two of Geoffrey's most enduring mycological brainchildren may prove to be the establishment of the series of International Mycological Congresses (IMC's) and of the International Mycological Association (IMA). He had become dissatisfied at the coverage of fungi in, and the size of International Botanical Congresses. He therefore convened a British Mycological Society committee to consider whether separate mycological congresses should be held (Ingold *et al.* 1968), and subsequently chaired the organizing committee which launched the first IMC at the University for Exeter in 1971. He felt the Congresses should be every six years so that

there was enough exciting new work to report. The IMA was established at the Exeter Congress, and he was made an Honorary President for Life of the IMA in 1977. In 1996 the IMA instituted an Ainsworth Medal for services to the subject, the first recipient appropriately being J. Webster.

Other honours and awards include an Honorary DSc from the University of Exeter in 1978, the Linnean Medal for Botany in 1980, the Lucille K. Georg Medal of the International Society for Human and Animal Mycology in 1982 and 1997, and honorary memberships of the American (1965), British (1965) and Indian (1984) mycological societies. A purpose-built laboratory block at the International Mycological Institute's new site in Egham (Surrey) was named the Ainsworth Building in 1992. Geoffrey and Frances both attended the official opening in June 1993; that was to be his last visit to the Institute to which he had devoted so many of his energies. Since his first visit 61 years earlier, the Institute had grown from being what he termed a 'cottage industry' to an international centre of excellence serving mycologists worldwide. An oil portrait of Geoffrey, painted by Elsie M. Barker and shown in the Kenn Group exhibition in Exeter in 1955, was presented to CABI by Geoffrey's daughters in June 1999 and now hangs in the Ainsworth Building.

He was always committed to the BMS and served in various unofficial and formal capacities; the latter included terms as Secretary (1942–47), Foray Secretary (1949), Secretary to the Plant Pathology Committee (1938), Editor (1953–58), Vice-President (1951–52, 1958), and President (1950).

Modest, unassuming, and generous, a socialist and a Quaker, and often struggling with a slight stammer, he was also a family man. He married Frances Hilda Bryan of Nottingham in 1931; they first met in 1929 and were happily married for 67 years. She and his two daughters Judith Steedman and Sarah Wall were at his bedside when he passed away in Derby after a long illness. He has been a personal inspiration to me, and I count it as a great privilege to have known and worked with him in his latter years.

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EPONYMOUS NAME

Ainsworthia Bat. & Cif., *Sydowia*, *Beihefte* **34** (1962); type species: *A. xanthoxyli* Bat. & Cif.

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