

OBITUARY



Helen May Brookes
(3.11.1917-1.1.2008)

Helen's life

Helen May Brookes was born in Melbourne, Australia, on 3 November 1917. Her family moved several times during Helen's childhood due to her father's employment but her main schooling was undertaken at Adelaide High School, where she spent five years, completing her education in 1935. Her schooling included training in drawing and this background probably helped her to obtain employment. She joined the Department of Entomology at the Waite Agricultural Research Institute of the University of Adelaide in 1936 to work as a Laboratory Assistant with Dr James Davidson. This is where her career in ento-

mology began. She first worked on stored grain pests and thrips, and later on embryonic development of the eggs of the field cricket, *Teleogryllus commodus*. The latter study resulted in her first paper, published in 1952. In 1943, Helen became the first female Technical Assistant at the university. She became Assistant Systematic Entomologist in 1957 – the year that she published her first paper on the Coccoidea. In 1964, she became the Waite Institute's Systematic Entomologist with status of Lecturer and assumed responsibility for the insect collection there.

In 1976, Helen was promoted to Senior Systematic Entomologist, with the status of Senior Lecturer, a position she held until her retirement in 1982. During her career, Helen worked with many notable (always male) colleagues, including H.G. Andrewartha and L.C. Birch, famous for their work on animal ecology. In 1940, she helped Charles Birch, then a Ph.D. student, translate from Latin into English the only book on Australian grasshoppers. She had active collaborations and correspondence with many colleagues, both in Australia and overseas.

Helen was very interested in the agriculture of Australia and in particular the agricultural problems of South Australia, especially if scale insects were involved. She knew all the agricultural departments in South Australia and neighbouring states. Her involvement with Coccoidea began in the late 1950s when scale insects, including mealybugs, were becoming pests in the Riverland, a region east of Adelaide that is famous for its orchards and vineyards. There was no entomologist in South Australia who could identify the pest scale insect species and so Helen took on the challenge, thus beginning her career in coccidology. In 1961, Helen started research on the armoured scale genus *Quadraspidiotus* (now *Diaspidiotus*)

following the rejection of a cargo of Australian apples by Hamburg quarantine authorities that claimed incorrectly that the fruit was infested with San Jose scale. She published three papers with N. M. Hudson on *Quadraspidotus* species and the first (Hudson and Brookes 1961) was most important in averting a European quarantine ban. Helen was a keen field biologist and collected widely in southern Australia. She devoted much of her time to identifications and meticulous curation of her ever-expanding collection of Coccoidea. In 1964, Helen received a grant, from the Australian Agricultural Research Council, to study the taxonomy of scale insects at both the British Museum (Natural History) (BMNH, now The Natural History Museum) in London, and the United States Department of Agriculture in Washington, D.C. She brought many of her well-prepared slides of scale insects to London for one of us (DJW) to try to identify. While in London, she attended the XII International Congress of Entomology and met many scale insect researchers. On the same trip she visited the Quarantine Service in Hamburg, and the collections at the University of California in Berkeley and Davis. While in Davis, she studied with Howard McKenzie. In 1971, Helen took study leave and spent 10 months at the BMNH, a month in the USA including Hawaii, and made visits to both Pretoria and Stellenbosch in South Africa. She made another world research trip in 1977, spending time with colleagues in Kuala Lumpur, Singapore, Japan, London and Poland. She visited Dr Shôzô Kawai in Japan, Dr Halina Komosinska in Warsaw and Dr Jan Koteja in Cracow; two papers on new Australian coccids resulted from her collaboration with Koteja.

Helen was a foundation member of the Australian Entomological Society and a member of the Royal Society of South Australia from 1950. She also was a member

of the Lyceum Club, an organisation for women interested in the arts, sciences, social concerns and pursuit of lifelong learning. In 1999, the Year of the Older Person, Helen was invited to a symposium in Canberra as an outstanding older woman scientist. She died in Adelaide on 1st January 2008, at just over 90 years of age.

Helen's contributions to coccidology

Helen was interested in the taxonomy, morphology and biology of scale insects, especially mealybugs (Pseudococcidae) and soft scales (Coccidae), but collected all taxonomic groups and kept detailed records, including on field habits and appearance in life. Thus, in addition to the 17 papers that Helen published on scale insects, her major tangible legacy is a large and well-curated collection of Australian Coccoidea. Helen's papers on scale insects included descriptions of new species, redescriptions, annotated lists of species, and biological information especially of important agricultural pests. She was the author or coauthor of four new genera (*Notoandaspis* Williams & Brookes, *Poecilococcus* Brookes, *Symonicoccus* Koteja & Brookes and *Waricoccus* Brookes & Koteja) and of 15 new species of mostly Coccidae and Pseudococcidae.

In 1986, with the agreement of her former employer, she donated her Coccoidea collection to the Australian National Insect Collection (ANIC), CSIRO Entomology, Canberra. Helen's collection consisted of 2,000 microscope slides, 850 vials, 218 dry packets, plus more than 200 photographs and colour transparencies, hundreds of reprints and her card index record of her specimens. Her index cards contain detailed notes on each collection that she obtained, often with sketches and important biological notes, and with each collection allocated a unique Specimen Index number (e.g., 31/67 is the 31st collection made in 1967). Her collection includes specimens collected by the late Jack

W. Beardsley, who was Professor of Entomology at the University of Hawaii when he visited Australia as a Fulbright Scholar in 1972 to work on the genus *Lachnodius*. Helen's collection has much better associated data and a different geographic focus to the important W. W. Froggatt collection (housed partly at the ANIC and the Agricultural Scientific Collections Unit (ASCU), Orange Agricultural Institute, New South Wales), which consists mostly of dry specimens.

Helen's other legacy to coccidology is her influence on the work of her colleagues. She was generous with her time and with specimens, always responding to requests as fully as possible. Several of her colleagues have honoured Helen with patronyms, namely *Helenococcus* Liu & Howell (Diaspididae), *Brookesiella* Lambdin & Kosztarab (Lecanodiaspididae), *Phacelococcus brookesae* Miller (Eriococcidae), *Lecanodiaspis brookesae* Howell & Kosztarab (Lecanodiaspididae) and *Eucalyptococcus brookesae* Williams (Pseudococcidae), and the late Jack W. Beardsley was planning to name a *Lachnodius* species for her. In the 1960s, Helen assisted the late Spencer W. Brown with field collecting for his chromosome studies. In 1978, DJW remembers with great pleasure his visit to Adelaide, where Helen took him on collecting trips and visits to neighboring agricultural departments. For PJG, Helen was an invaluable mentor, who always was there to help and encourage. Helen visited Monash University, Melbourne, in 1975 to spend several days training PJG in slide-mounting methods and other matters coccidological. PJG also visited Helen at the Waite Institute and used Helen's collection for her Ph.D. on *Apiomorpha* Rübsaamen (Eriococcidae). The availability of Helen's collection at the ANIC after 1986 was a great bonus to PJG (then in Canberra), who could readily access much important material for taxonomic

study. Recently, Nate Hardy and PJG have been using Helen's collection for research on other galling eriococcids, especially *Opisthoscelis* and *Lachnodius*. Many of us miss her letters, written in a clear and distinct hand with all the latest news and gossip.

Helen's achievements were remarkable, especially as she had no formal tertiary training in science and was a woman working in a totally male-dominated sphere. She was trained "on the job" and became one of Adelaide's most successful women in science.

The information for this tribute was drawn from multiple sources but especially from unpublished autobiographic notes that Helen appears to have prepared in the early 1980s and which informed the 2008 obituary written by two of her former colleagues and published in the News Bulletin of the Australian Entomological Society. Information on Helen's collection was published in 1997 by M.S. Upton in his book: 'A rich and diverse fauna: The history of the Australian National Insect Collection 1926–1991'.

We thank Gary Taylor and Mike Keller (both at University of Adelaide) and Helen's niece, Alison Carter, for making information on Helen's life and work, as well as photographs of Helen, freely available to us.

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