

Monumental work with weevils

Most people see weevils as something that invade cereals in the pantry. But for 82-year-old entomologist Dr Elwood Zimmerman – 'Zimmie' to his friends and colleagues – they are an endless source of fascination. He finds weevils so interesting that he still studies them, long past the age when most people would have retired.

'I was attracted to the study of weevils as a young boy when a university professor suggested to me that if I wanted a lifetime of interest I should study weevils. And I've not stopped,' Zimmerman says.

Zimmerman has been classifying weevils for 63 years. He began studying Pacific island weevils in 1930 for Hawaii's Bishop Museum, where he became Curator of Entomology. He also worked with Hawaii's Experiment Station, the Hawaiian Sugar Planter's Association and the University of Hawaii.

Zimmerman has explored more than 50 Pacific islands to study their faunas and he has written extensively on them. He has

become one of the world's most distinguished entomologists, publishing more than 225 papers and books.

For the past 22 years he has focussed on the Australian fauna. This research has culminated in his monumental work, *Australian Weevils*, an eight-volume monograph, five volumes of which have been published by CSIRO. The eight volumes describe about 4000 of the 10 000 or so species of Australian weevils. When *Australian Weevils* is completed, Zimmerman will have published more than 10 000 pages of scientific information and more than 14 000 illustrations.

Since retiring from the CSIRO Division of Entomology 12 years ago he worked for no pay as an honorary research fellow. His dedication to the work was such that he paid the publishing costs for the monograph himself.

'When CSIRO said they did not have the money to publish the books, I thought, I can't let all of that work go to waste. So my wife and I found the money to support the publication of the books,' he says.

The importance of Zimmerman's work is that it is fundamental for studies of biodiversity and pest management. Before he came along, this immensely diverse insect family was poorly known or documented in Australia. There was only a handful of identification keys and these were of little use.

The new monograph, with more than 10 000 illustrations and information about the anatomy, distribution, host plants, habits and classification of the Australian weevils, lays a base for future studies.

Of his long and exciting career, Zimmerman says that part of what drives him is curiosity: the excitement of always being able to find something new.

'There are few fields of human endeavour that enable a person to rise in the morning knowing that it may be possible to observe some new organism, or structure or function or fact not observed by anyone before,' he says.

Zimmerman says that weevils are a very important group of insects, and are the largest family of insects in Australia. There are perhaps more than 100 000 species worldwide, and they are among the most common insects of all habitats except the oceans.



Dr Elwood Zimmerman

'Weevils have important economic significance as many are severe agricultural pests,' he says. These include grain weevils, cotton boll weevils, various stem, fruit and nut weevils, palm, sugarcane and banana weevils, and numerous defoliators.

On the other hand a number of weevils are extremely useful. For instance, the salvinia weevil, *Cyrtobagous salviniae* has been highly successful in controlling the serious water weed *Salvinia* which was choking up waterways in Australia, the Indo-Pacific region and Africa. The introduction of the *Salvinia* weevil from Brazil by CSIRO destroyed the weed, leading to hundreds of millions of dollars of benefit to the affected countries.

Zimmerman was recently awarded a special CSIRO Medal for 1995 by CSIRO's former chief executive, Dr John Stocker, in honour of a lifetime of service to science. At the ceremony Zimmerman expressed his gratitude to the profession, as well to the support given by the CSIRO.

'You have honoured me for an accomplishment that you consider is a credit to the division, but it is important that a scientist should consider that the greatest reward for a job well done should be the opportunity to continue his research,' he said in his acceptance speech.

He says that the work is still only partly done, and to ensure that there will be someone to follow in his footsteps, Zimmerman and his wife are endowing a scientific position for Australian and Pacific weevil research to be permanently associated with the Australian National Insect Collection.

Rosie Schmedding



These pictures show the importance of weevils.

Top: *Salvinia* investing a body of water.

Above: After the weevils have done their work.