JOURNAL OF NEMATOLOGY

VOLUME 20 APRIL 1988 NUMBER 2

Journal of Nematology 20(2):171–172. 1988.

Symposium on Tropical and Pacific Nematology Introduction[1]

R. McSorley[2]

The Pacific Ocean is the largest distinct geographical region of the earth, covering about a third of the planet's surface area. Within its confines are countless islands, from uninhabited coral atolls to those supporting substantial human populations and agricultural industries. Since most of the Pacific islands lie within the boundaries of the Tropics, a number of their nematode problems are typical of those found on tropical crops elsewhere in the world. Two notable exceptions are Japan and New Zealand, which lie beyond the Tropics and have relatively temperate climates. Their nematodes are among the most studied in the region, and significant progress has been made in the management of plant-parasitic nematodes in these countries. The economies of most of the tropical islands in the Pacific are predominantly agricultural, and many are heavily dependent on subsistence agriculture. Thus the future of some of the newest members of the United Nations, such as Western Samoa or Vanuatu, may depend heavily on their ability to overcome agricultural production problems, including nematodes.

Although some knowledge of nematodes in the tropical Pacific islands dates back to the time of Cobb (1), the phytoparasitic nematode faunas of the region remain among the least studied in the world. With the exceptions of Hawaii, the Philippines, Japan, and Fiji, the nematode faunas of most of these islands were mostly unknown until extensive surveys were made in the 1970s and 1980s.

As the survey stage concludes, increasing examples of nematode management practices in the region are anticipated. In many locations, nematicide usage may be prohibitive due to cost and difficulty of transport to remote sites. As more is learned about the susceptibility or resistance of germplasm in the region, increasing emphasis quite likely will be placed on using resistant cultivars. Root-knot nematode-resistant material is already available in some cultivars adapted to the area, most notably for several vegetable crops in Hawaii (4) and for passionfruit in Fiji (2). Still, even as additional resistant cultivars are discovered, management of nematodes by nonchemical cultural practices (5) probably will remain the major method of managing nematodes in the region. Much can be accomplished quickly through educational efforts to inform growers of certain basic principles, such as the benefits achieved by fallow and the destruction of crop residues. More detailed biological information from the region will be needed however, to implement a cropping systems approach for nematode management or to recognize the biological control agents endemic in the area.

Finally, nematological studies in the Pacific region will present significant opportunities for increasing basic knowledge of our science. Two of the most important plant-parasitic species, *Radopholus similis* and *Rotylenchulus reniformis*, were originally described from the region (1,3), and numerous other plant-parasitic and free-liv-

Received for publication 24 September 1987.

[1] Introduction to the symposium session presented at the annual meeting of the Society of Nematologists, 19–22 July 1987, Honolulu, Hawaii. Florida Agricultural Experiment Stations Journal Series No. 8413.

[2] Associate Nematologist, Department of Entomology and Nematology, IFAS, University of Florida, Gainesville, FL 32611.

ing forms undoubtedly await discovery there. As the nematode faunas of the various islands become better defined, they will provide clues and data for better understanding the complicated subjects of colonization and biogeography. The faunas of many islands contain complex mixes of species, from those introduced recently by agricultural operations to those introduced in antiquity from nearby landmasses such as Asia and Australia. Furthermore, the continuum of geologic activity within the region assures that numerous islands of varying geological age will be available as laboratories in which to study such colonizations. The Pacific Ocean itself, vastly rich in its diversity of marine life, will become increasingly important in marine nematology as more and more collections and studies of marine nematodes are made in the region.

Literature Cited

1. Cobb, N. A. 1893. Nematodes, mostly Australian and Fijian. Macleay memorial volume of the Linnaean Society of New South Wales. Pp. 252–308.

2. Kirby, M. F. 1978. Reniform and root-knot nematodes on passionfruit in Fiji. Nematropica 8:21–25.

3. Linford, M. B., and J. M. Oliveira. 1940. *Rotylenchulus reniformis,* nov. gen., n. sp., a nematode parasite of roots. Proceedings of the Helminthological Society of Washington 7:35–42.

4. Sasser, J. N., and M. F. Kirby. 1979. Crop cultivars resistant to root-knot nematodes, *Meloidogyne* species. Department of Plant Pathology, North Carolina State University, and United States Agency for International Development, Raleigh, NC.

5. Trivedi, P. C., and K. R. Barker. 1986. Management of nematodes by cultural practices. Nematropica 16:213–236.