

BOOK REVIEWS

POTTER, D. A. 1998. Destructive Turfgrass Insects. Biology, Diagnosis, and Control. Ann Arbor Press (a division of Sleeping Bear Press); Chelsea, Michigan, xvi + 344 p. ISBN 1-57504-023-9. Hardback. \$65.00.

The size [7" × 10" (17.8 × 25.4 cm)], cover design, and paper quality of this book remind me strongly of Leslie (1994) which I found to be a valuable reference source. The author of this book was able to capitalize on information presented in Leslie (1994) but focus on pests of turfgrass. That was an advantage for this book. Its author has adopted an excellent arrangement of the contents into the following chapters: 1. Managing turfgrass insect pests; 2. Insect biology and identification; 3. Detection and monitoring of insect pests; 4. Insecticides—types and mode of action; 5. Using insecticides safely; 6. Using insecticides effectively; 7. Safeguarding the environment; 8. Root-infesting insect pests; 9. Pests that burrow in stems or damage crowns; 10. Pests that suck juices and discolor leaves and stems; 11. Insects that chew leaves and stems; 12. Biting and stinging pests in the turf environment; 12. Nuisance pests and innocuous invertebrates; 14. Beneficial invertebrates: Predators, parasitoids, and thatch builders; and 15. Managing nuisance wildlife problems in the turfgrass environment. There are also 4 appendices, a glossary of terms, and an index. The book includes 32 plates of color photographs of insects or the damage they cause, which are far more useful than black-and-white although the colors of some are distorted and others are of lesser quality.

The second and subsequent editions of this book deserve to become standard reference works. These should attempt to replace the worst of the color photographs, and correct some of the little errors that should have been caught by peer reviewers. Here are some of them. Page 30 suggests that the name of a species is one word, although zoology adopted a binominal nomenclature in 1758. Pages 33 and 266 misspell Cicindelidae. A canvas sweepnet with D-shaped mouth with the flat side down would be more practical in turf than the net illustrated on p. 47. Page 312 implies that the word "exuviae" has a singular "exuvium" whereas it has no singular form in English any more than does the word "feces" (The Torre Bueno Glossary of Entomology, 1989, New York Entomological Society).

A worse fault arises from the author's lack of experience in the southern USA: he has attempted not entirely satisfactorily to use literature known to him to fill in gaps in his knowledge. His review of mole crickets, which are the most important pests of turfgrass in the USA by virtue of the damage they do in the coastal plains of the South (Golf Course Management 63[5]: 22), is better than any I have seen written by others without experience, but misses some points, including some very important points. He represents their names correctly, barring the author (Perty), see p. 121, of *Neocurtilla hexadactyla*. He states (p. 122) that their eggs are "round, translucent, and whitish" whereas their color is grayish brown and not translucent, and their shape is ovoid. His map (p. 122) shows the tawny mole cricket as occurring in western Arizona, whereas only the southern mole cricket, as his text states, has been found there (Florida Entomol. 71: 90-91). This same map fails to show the presence of the tawny mole cricket in eastern Texas, although the text states that it is there. It also shows the southern mole cricket to occur in unexplained places that appear to be north of Louisiana or Texas. In the Virgin Islands, the short-winged mole cricket is known only from St. Croix (Florida Entomol. 69: 760-761, 79: 468-470), not from the other islands.

He states (p. 129) that the wasp *Larra bicolor*, a biological control agent of *Scapteriscus* mole crickets, was imported into south Florida and does not seem to have had a major effect on mole cricket populations. That statement would have been almost correct, so far as was known in early 1993 (in fact, wasps were released in other parts of

Florida but did not become established), but another biotype of the wasp was released, became established in north Florida, and is spreading (Florida Entomol. 78: 619-623).

He states (p. 129) that the tachinid fly *Ormia depleta* was imported from Brazil and established "throughout most" of Florida but does not seem to have a major effect on mole cricket populations. In fact, the fly is established in 38 contiguous counties of peninsular Florida to 29°N, but neither in the far north nor in the panhandle (Biological Control 6: 368-377) and **does** have a major effect on mole cricket populations (Environ. Entomol. 25: 1415-1420). Unpublished information underscores the major effect of this fly.

He writes (p. 128-129) about the entomopathogenic nematodes *Steinernema scapterisci* and *S. riobravis* as biopesticides. His brief account misses some very important points. The nematode *S. scapterisci* is not very effective against short-winged mole crickets (I do not know of information about the effect of *S. riobravis* on this mole cricket) but is effective against adult southern and tawny mole crickets. In contrast to *S. riobravis*, which is native to Texas and is not a specialist on *Scapteriscus* mole crickets, *S. scapterisci* is a South American specialist on these mole crickets and only it is known to reproduce in them, release infective juveniles into the soil, and establish populations in the field. The only published record for persistence of such *S. scapterisci* populations is 5 years (J. Entomol. Sci. 25: 182-190), but it has been shown to spread by flight of infected mole crickets from places of release (Florida Entomol. 75: 163-165, 76: 75-82), and there is overwhelming unpublished evidence that such populations not only are permanent, but have spread and are spreading to other localities in Florida. Thus, *S. scapterisci* is an inoculative biological control agent when used against *Scapteriscus*, as was stated in Leslie (1994), not merely a biopesticide. This makes *S. scapterisci* a far more useful biological control agent than indicated by this book's author.

The author of this book has, in general, done a fine job in its preparation. He has simply overlooked some of the more recently published research on biological control of mole crickets. As major source for research on mole crickets he has cited only extension publications, including Walker (1985) which is by far the most thorough yet published, but >14 years have passed since its preparation. I hope that future editions of this book will correct the deficiencies and make it the best general reference work available for the entire country, not just the North.

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REFERENCES CITED

- LESLIE, A. R. (ed.) 1994. Handbook of Integrated Pest Management for Turf and Ornamentals. Lewis Publishers (a division of CRC Press); Boca Raton, Florida. [xi +] 660 p.
- WALKER, T. J. (ed.) 1985. Mole Crickets in Florida. Florida Agric. Exp. Stn. Bull. 846 (1984): i-iv, 1-54.