

Field Guide to Jewel Beetles (Coleoptera: Buprestidae) of Northeastern North America

By S. M. Paiero, M. Jackson, A. Jewiss-Gaines, T. Kimoto, B. D. Gill, B. D. and S. A. Marshall. 2012. Canadian Food Inspection Agency. 411 pages.

Recently published by the Canadian Food Inspection Agency, in collaboration with the University of Guelph, Ontario Ministry of Natural Resources and the Invasive Species Centre, this field guide is *not* found in a bookstore near you. Remarkably, *Field Guide to Jewel Beetles of Northeastern North America* is available free of charge from the CFIA, and is as attractive as the group it covers.

Also known as metallic or short-horned wood-boring beetles, jewel beetles have long attracted interest for their iridescent beauty and diversity. They belong to a large, economically important family, with perhaps 15,000 species worldwide. The most notorious of the 700 or so species in North America is the Emerald Ash Borer. This field guide is particularly timely given the massive economic and ecological impacts this invasive species is having in eastern forests since it first arrived in the early 1990s.

Professional entomologists will be familiar with Agriculture Canada's *The Metallic Wood-boring Beetles of Canada and Alaska* (Bright 1987). Paiero et al.'s new field guide includes an updated taxonomy and recent arrivals, and will greatly facilitate identification of the 164 jewel beetle species known or expected to occur in northeastern North America. To place as many copies as possible in the hands of entomologists, foresters, arborists, technicians, woodlot owners, and naturalists, it is available in both English and French and at no cost.

This field guide has a brief introductory section along with information on jewel beetle sampling, curation of specimens, and their submission for species confirmation. It even includes a section (with photos) on how to dissect male jewel beetle genitalia. While it might strike some as odd (or worse), the reproductive structures of male jewel beetles are often diagnostic.

The dichotomous keys and species treatments that form the bulk of the book set this guide apart. It includes two identification keys for the 23 genera in northeastern North America. One is a "technical key" modified from existing scientific literature that uses the most reliable characters, even if they require a microscope. The other "field key" uses characters that are more easily observed in the field with a hand lens or digital camera, but may lead to several end points due

to character variability. Photographs accompany each couplet in the keys, enhancing ease of use. Each species is vividly illustrated with high-resolution colour photos of the dorsal and ventral views (including additional colour morphs where available), as well as the head and male genitalia. Lateral photos and additional identification aids (icons) are also included for the 60 odd species of *Agrilus*, the most diverse genus in the northeast.

Species accounts are well laid out, organized alphabetically by subfamily and genus, and include colour-coded headers for easy navigation. Full scientific names including authorities and taxonomic synonyms are given, which can help link species concepts with published technical works. Diagnostic characters, similar species, and known larval host plants are also provided in the species accounts, as well as common names and general ecological notes where available. It is also noted whether or not each species is a known prey of *Cerceris fumipennis*, a buprestid-hunting wasp whose nests can be raided for jewel beetle specimens. Particularly useful are nested silhouettes showing minimum and maximum recorded size for each species. The range maps show both the jurisdictions (state, province) in which a species has been recorded, as well as the geographic range of its known larval host plants. It's a novel and useful approach; although a lighter shade of green would have made the maps a bit clearer.

I am loathe to criticise such an excellent publication, all the more so when it is free. I do wonder however, if there was perhaps a missed opportunity to make the guide even more accessible to its intended audience. It is unfortunate that ES-recognized common names were available for only 19 of the species covered in the field guide, and those few are not listed in the index. Many recent field guides for other North American groups (e.g., as tiger beetles, ants, and odonates) have often included species or genus-level information on habitat, behaviour, and/or phenology. Although this guide was primarily intended for identification of jewel beetles, more natural history information (perhaps as an expanded *Comments* section) could have broadened its appeal. Perhaps future editions may be able to incorporate additional ecological information, particularly for lesser known species that are not economically important.

These minor criticisms aside, I think this book will stimulate an inordinate fondness for jewel beetles. As a group, they have many of the attributes that appeal to amateur naturalists: they are attractive, not too challenging to sample and diverse enough to be interesting (but not overwhelmingly speciose). This superb field guide will enable citizen scientists to contribute to a better

understanding of jewel beetle distribution, abundance, and ecology. To obtain a copy, please call the CFIA at 1-800-442-2342.

DR. ROBERT F. FOSTER

Northern Bioscience, 363 Van Horne Street, Thunder Bay,
ON, Canada, P7A 3G3