

JEWEL BEETLES OR METALLIC WOOD-BORING BEETLES

BUPRESTIDAE (LEACH, 1815)

NATURAL HISTORY SUMMARY BY JACOB EGGE, PHD

Classification

Kingdom: Animalia

Phylum: Arthropoda

Class: Insecta

Order: Coleoptera

Family: Buprestidae

Description

Buprestid beetles have a distinct ovoid, elongate shape and range in size from 3-100 mm, although most are <3 mm in length. Species are often brightly colored, typically with a metallic sheen of coppery, green, blue, or black. The iridescence is due to structural color, not pigment. Microscopic texture in the cuticle selectively reflects frequencies of light in particular directions. Some are cryptically colored and closely match the color of their host plant (Triplehorn and Johnson 2005).

Distribution

This family is distributed globally in terrestrial habitats, including many Pacific Islands (Bellamy 1997).

Diet

Buprestid larvae bore into and feed on plant tissue. Most species bore into wood and bark, however there are also species that are leaf and stem miners (Triplehorn and Johnson 2005).

Habitat and Ecology

Wood boring types prefer dying or dead branches on otherwise-healthy trees. These species are particularly attracted to dead or dying trees and logs or slash. Leaf and stem miners prefer live foliage on trees and shrubs. Buprestids are capable of flight and readily take flight when threatened (Triplehorn and Johnson, 2005).\

Reproduction and Life Cycle

Buprestids lay eggs in crevices in bark. Larvae tunnel into the bark, leaving behind galleries where they pupate (Triplehorn and Johnson, 2005). Buprestids typically produce one generation per year (Pedigo 2002)

Conservation Status

No North American buprestid species are known to be of conservation concern.

Cultural Significance

Many Buprestids are serious pests and cause extensive damage to timber and other crop plants. Introduced species such as the Emerald Ash Borer, (*Agrilus planipennis*) introduced to the Midwestern United States, can be particularly devastating (Triplehorn and Johnson 2005). In contrast, the elytra of some species have traditionally been used in making spectacular beetle wing jewelry and decorations in several countries in Asia including Japan, India, and Thailand.

Specimen Specific Detail

The Buprestidae specimens from the [Burton Ostenson Museum of Natural History](#) at Pacific Lutheran University (PLU) were collected by Jens Knudsen, a biology professor at PLU, and his wife, Winona Knudsen. Additional specimens were collected by Arnold Olson. Collection dates range from the 1950's-1960's. The majority were collected in the Spanaway and Parkland areas. The bright green beetles with orange lining the elytra are Golden Jewel Beetles (*Buprestis aurulenta*), a species that uses Douglas fir trees as its host plant.

Literature Cited

- Bellamy, C. L. 1997. Buprestoidea. Version 01 January 1997 (under construction). Available at <http://tolweb.org/Buprestoidea/9082/1997.01.01> in The Tree of Life Web Project, <http://tolweb.org/>. Accessed on Sept 3, 2017.
- Pedigo, L.P. 2002. Entomology and Pest Management, 4th edition. Prentice Hall, Upper Saddle River, New Jersey. 742 pgs.
- Triplehorn, C.A. and N.F. Johnson. 2005. Borror and DeLong's Introduction to the Study of Insects, 7th edition. Thomson Brooks/Cole, Belmont, CA. 864 pgs.