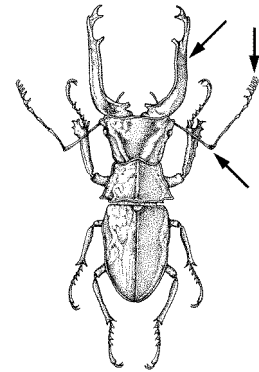


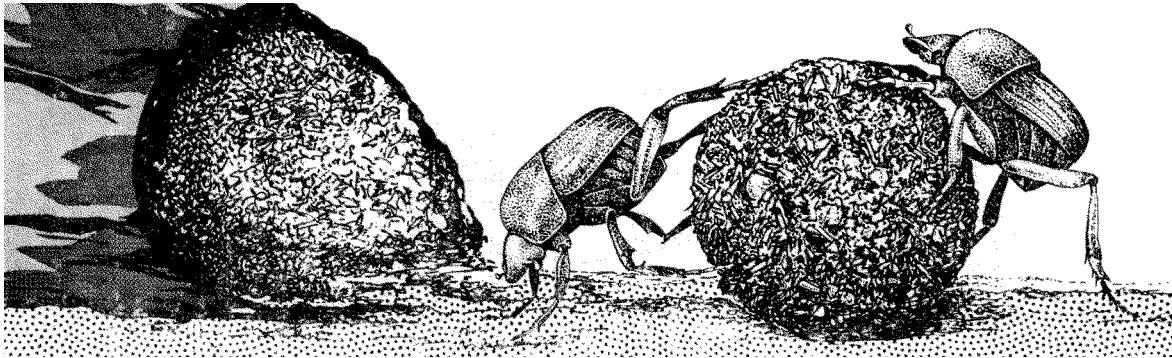
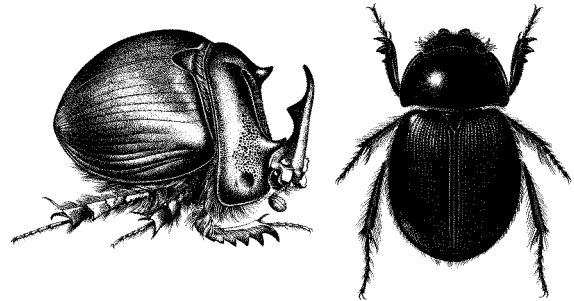
Family: Lucanidae (stag beetles)

- **mandible of males frequently greatly enlarged, sometimes branched**
- **antenna often elbowed**
- antenna with last 3-4 segments lamellate (segments expanded laterally into oval or elongate lobes), but segments cannot be closed tightly into club
- adults feed on honeydew and sap from trees and leaves
- larvae bore in dead or decaying wood
- relatively small family, with ca. 30 species in North America



Family: Scarabaeidae (scarab beetles)

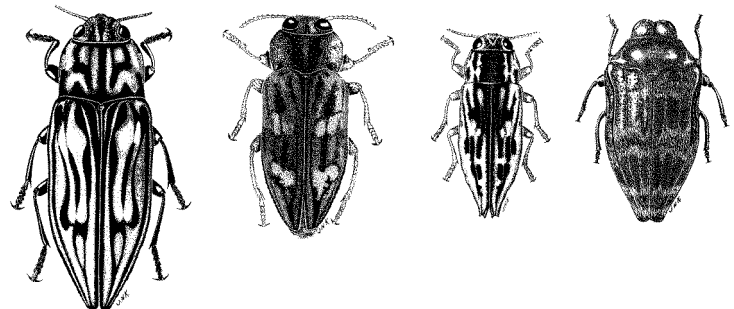
- **antenna with last 3-4 segments lamellate, and these segments can be closed tightly to form club**
- usually stout and heavy-bodied, oval to elongate
- head and/or pronotum sometimes armed with horns
- adults of some scarab beetles feed on foliage, flowers or sap; their larvae (grubs) live underground and feed on roots; others feed on dung or carrion, showing various degrees of parental care
- many species of great economic importance as turf, lawn, and garden pests (e.g. Japanese Beetle, *Popillia japonica*)
- large family, with about 1400 species in North America



A pair of dung beetles (Scarabaeidae) forming a ball of dung that will later serve as food for larvae during their underground development.

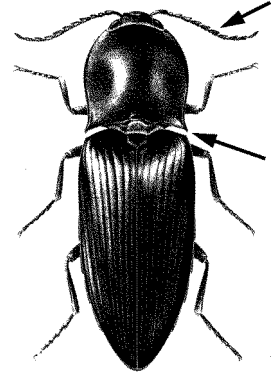
Family: Buprestidae (metallic wood-boring beetles)

- **body nearly always metallic or bronzed, especially on ventral surface; somewhat dorsoventrally flattened**
- bullet-shaped, but pronotum without sharp posterior angles (cf. Elateridae)
- tips of elytra often pointed
- adults feed on flowers, foliage and tender bark; larvae bore wood
- many species of great economic importance



Family: Elateridae (click beetles)

- **hind angles of pronotum extend backward, pointed**
- **prosternum with elongated lobe that fits into depression in mesosternum – that allows beetle to click (snap upward) when turned upside-down**
- head and prothorax loosely joined to rest of body
- body elongate-narrow, often nearly parallel-sided or with elytra tapering at tip
- antennae nearly always serrate (saw-toothed), sometimes comb-like
- adults live on foliage of trees and bushes, sometimes under bark or in rotten wood
- larvae (wireworms) slender, shiny (resemble mealworms); live in rotten wood and soil, feed on plant and animal material

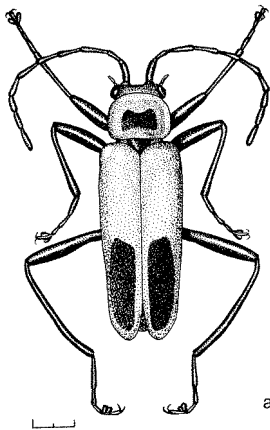
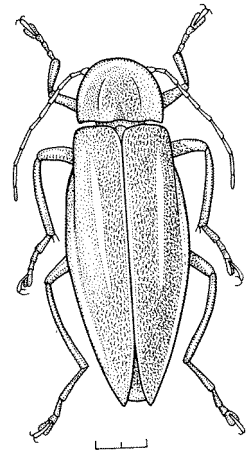


Family: Lycidae (net-winged beetles)

- **elytra reticulate, with longitudinal ridges** and less distinct, cross ridges
- **head concealed by pronotum when viewed from above**
- elytra soft, widened posteriorly
- coloration usually black, with orange or red markings, sometimes entire body mostly orange or red (aposematic)
- larvae predaceous, live under bark
- diurnal beetles, feeding mostly on other insects and/or decaying vegetation

Family: Lampyridae (lightningbugs or fireflies)

- **head concealed under pronotum when viewed from above**
- similar to Lycidae but wings nearly smooth, ridges on elytra less conspicuous or absent
- elytra soft, loosely covering body
- many species sexually dimorphic with fully winged males and wingless females
- often last 2 or 3 abdominal segments of adults luminescent; larvae of all species produce light
- larvae and adults of all species predaceous



Family: Cantharidae (soldier beetles)

- **head not concealed when seen from above**
- body elongate, parallel sided or nearly so
- soft-bodied
- elytra sometimes shortened
- antennae threadlike, rarely with lateral projections
- black or brown, often with red, yellow, or orange
- adults feed on flowers or soft-bodied insects, some species feed exclusively on aphids