

preferred the young pods to the leaves of the beans. They ate large holes in the pods, much larger than the entrance holes of the corn earworm. Indeed, where the worms were abundant the pods were pretty thoroly consumed.

Some damage was also done to the fall crop of beans by the cabbage looper (*Autographa brassicae* Riley). Unlike the army worms, these caterpillars confined their attacks largely to the leaves, where they fed usually on the under side.

Due perhaps to the depredations of the Mexican bean beetle in the states further north, fall grown beans have been bringing a pretty fair price in Florida. It is quite possible that this condition may persist for several years.

THE SCARABAEIDAE OF FLORIDA

By W. S. BLATCHLEY

Dunedin, Florida

(Continued from page 46)

Subfamily TROGINAE

Oblong, convex, dull brown or blackish beetles of medium or small size covered with a thick dirt-colored crust. They have the antennae 9- or 10-jointed, club 3-jointed; elytra roughly sculptured and usually bearing rows of small tubercles; abdomen covered by the elytra; ventral segments 5, free; side pieces of the mesothorax not reaching the rounded contiguous middle coxae. They live under or about the skins and bones of carrion, old hides, feathers, etc. All our eastern species belong to a single genus.

Genus XXIII. TROX Fabricius

This genus, sufficiently characterized above, is represented in Florida by nine of the 21 known North American species. Unless cleaned of their usual encrusted coat of dirt they are very difficult to name. In the first four species the scutellum is spear-shaped and the length 12 or more mm.

76. (13328). *T. scabrosus* Beauv.

Length 15-18 mm. Dull blackish-brown, heavily encrusted with a brownish opaque coating; first joint of antennae with dark brown hairs, club dark; elytra with rows of oblong tubercles, which are tomentose above; between each pair of these a row of smaller tubercles and each side of these a row of granules.

"Not rare" (Sz.); St. Augustine (Ham.); Enterprise (Dietz); Sevenoaks, near Clearwater (Wick.); Lake City (Ag. Coll.).

*77. (13329). *T. monachus* Hbst.

Length 13-16 mm. Dark brown or fuscous; first antennal with reddish-brown hairs, club rufous or ash-gray; elytra each with five rows of rounded tubercles, their entire surface tomentose and with rows of granules between them.

Named without definite station (Sz. Ms.). Okeechobee City, Sarasota and Dunedin, Feb.-March (Bl.).

78. (13330). *T. asper* Lec.

Length 13-14 mm. Similar to the above, the elytral tubercles oblong, their front ends glabrous, shining.

St. Augustine (Ham.); Gulfport (Fall).

*79. (13331). *T. suberosus* Fabr.

Length 13-14 mm. Dull grayish-brown; elytra mottled with piceous, sometimes almost black, with tubercles indistinct, not tomentose.

Common throughout the State; listed from seven stations and at hand from seven others, including Jacksonville, Royal Palm Park, Big Pine Key and Everglades.

*80. (13333). *T. tuberculatus* (DeG.).

Length 9-10 mm. Black or piceous; head with a transverse row of small tufts of bristles; thorax with a deep median groove, limited each side by an entire obtuse ridge; elytral tubercles with suberect setae; hind femora with a row of spines beneath. In this and the remaining species the scutellum is oval, and length less than 12 mm.

Sanford and Dunedin, Dec.-Jan.; taken beneath the remains of carrion traps (Bl.). The first and only records for the State.

*81. (13336). *T. erinaceus* Lec.

Length 6-7 mm. Dull black, shining when clean; elytral tubercles prominent with erect black setae; hind femora without spinules beneath.

Buck Key (Sz. Ms.). Dunedin, taken frequently, Dec.-March, by sifting debris of abandoned carrion traps.

*82. (13340). *T. insularis* Chev.

Length 5-6 mm. Piceous or blackish-brown; thorax narrowed at base, bifoveate, the ridges sinuous; elytral tubercles less prominent, beset with short erect brownish setae.

Pensacola (Sloss.); Haulover (Sz. Ms.). The *T. foveicollis* Harold is a synonym.

*83. (13341). *T. terrestris* Say.

Length 5-6 mm. Very similar to *insularis*. Thorax less narrowed at base, with sides less rounded; elytral tubercles with yellow, prostrate, scale-like hairs.

"Not rare" (Sz.); St. Augustine (Ham.): Marion Co. and St. Mary (Fall); Ft. Myers (Dav.). Dunedin and Royal Palm Park;

common at Dunedin throughout the winter at carrion traps and beneath dried carcasses of dead animals (Bl.).

84. (13344). *T. scaber* (Linn.).

Length 5-7 mm. Black, feebly shining; elytral tubercles replaced by tufts of setae, these much smaller in the alternate rows; front tibiae serrulate above the lateral tooth.

St. Augustine and Lake Worth (Ham.).

Subfamily MELOLONTHINAE

The members of this subfamily vary much in size and general appearance and are primarily distinguished by having the abdominal spiracles in part situated on the superior portions of the ventral segments, the last one usually visible behind the elytra, the rows of spiracles diverging. They have the mandibles corneous, clypeal suture usually distinct; antennae 7- to 10-jointed, club lamellate, 3- to 7-jointed, often longer in males than females; pygidium exposed; tarsi 5-jointed. They are usually of looser, more slender build, with longer legs better fitted to cling to vegetation, than in the previous subfamilies. Their food habits are entirely different, as they are all vegetable feeders, the adults occurring, for the most part, on leaves and flowers, flying about in the evening and often attracted in great numbers to light, while the larvae live underground and feed mainly on roots, often doing much damage to cultivated crops.

KEY TO TRIBES OF FLORIDA MELOLONTHINAE

- a. Hind tarsi with two equal claws; tarsi with a bisetose onychium between the claws; middle and hind tibiae each with two terminal spurs; body above (except in *Macroductylus*) not scaly.
- b. Labrum indistinct, connate with under surface of the clypeus; elytra with more or less distinct sulci or grooves, often iridescent; hind coxae flat, broadly dilated, last spiracle situated on the fifth ventral; length less than 11.5 mm. Genus XXIV. Tribe SERICINI.
- bb. Labrum distinct, not connate with clypeus; last spiracle placed on the suture between the fifth ventral and propygidium; elytra without distinct striae or grooves.
- c. Hind femora and tibiae short, much thickened; entire under surface thickly pubescent; ventral segments not connate; length 11-13 mm. Genus XXV. Tribe LIPARETRINI.
- cc. Hind femora and tibiae slender; under surface, except sometimes the meso- and metasterna, not densely pubescent.
- d. Ventral segments five, not connate, the sixth not visible; apical margin of thorax membranous; form short, stout; length less than 11 mm. Genus XXVI. Tribe DIPLOTAXINI.
- dd. Ventral segments six; apical margin of thorax not membranous.

(To be continued)