

P. opalus (Oliv.), a closely related species, has been found on numerous occasions in various parts of the state and is probably common in central Florida. It causes damage similar to that described above.

Very little work has been done on the chemical control of these species. Wolfenbarger (59) did not get satisfactory control of the citrus root weevil with parathion or cryolite. Cryolite has been used successfully on Fuller's rose weevil and it is possible that several of the newer organic insecticides would be satisfactory.

OTHER BEETLES

Watson (58) reported that June beetles occasionally did considerable damage to citrus. These depredations were apparently recorded during the 1920's and no such injury has been reported during the last two decades. Watson did not identify the species involved.

Several species of small beetles occasionally make tunnels in dying or dead wood. These have commonly been referred to as shot-hole borers. *Platypus compositus* Say (family Scolytidae) and *Bitoma carinata* (Lec.) (family Tenebrionidae) were collected by the authors from one orange tree near DeLand in 1947. Several other species are undoubtedly involved on occasion. These insects are not primary pests and invade only trees weakened from some other cause, such as lightning or water damage.

GRASSHOPPERS AND RELATED INSECTS

Grasshoppers are occasional marauders of citrus groves. Since the authors (17) have thoroughly discussed this problem elsewhere, only the two most common pest grasshoppers will be mentioned here.

AMERICAN GRASSHOPPER

The species *Schistocerca americana americana* (Drury), sometimes called the bird grasshopper, is the only grasshopper which has ever presented a really serious threat to citrus growers over a large area. From the fall of 1946 through the spring of 1949, the insect was common throughout groves in areas about Plant City and between Lakeland and Wauchula. During that period an occasional young grove was almost completely