

PLATYSIMUS IN SOUTHEASTERN POLYNESIA^{1,2,3}
(Coleoptera: Curculionidae: Otiiorhynchinae: Celeuthetini)

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Abstract: Details are given of the distribution and hostplants of *Platysimus insularis* (Boheman) in the Society and Austral Islands, and the weevil is recorded for the first time from the islands of Huahine, Raiatea, Raiavavae, Tubuai, Rurutu and Rimitara. *Sphaerorhinus carinicolis* Fairmaire, 1849, is listed as a new synonym.

This is a long-delayed report on the collection of *Platysimus* weevils made during Bishop Museum's Mangarevan Expedition to southeastern Polynesia in 1934. *Platysimus* and *Rhyncogonus* are the only genera that represent in southeastern Polynesia the large, world-wide subfamily Otiiorhynchinae, but only *Rhyncogonus* is endemic in the region. The extensive collections of *Rhyncogonus* made by the Expedition were published upon in 1937 by E. C. Van Dyke, my professor, who selected me to be the entomologist on the Expedition. The fact that only one genus of the great subfamily Otiiorhynchinae has endemic species in southeastern Polynesia is in marked contrast to the continents and most continental islands where the subfamily is represented by multitudes of genera and species. Only one introduced, widespread species represents *Platysimus* in southeastern Polynesia (that is, Polynesia south of Hawaii and east of Samoa).

I am indebted to Prof. F. M. Carpenter, Harvard University, who most kindly prepared the photographs used herein.

Genus *Platysimus* Marshall, 1956: 118

Type-species: *Celeuthetes insularis* Boheman, designated by Marshall, 1956: 118.

Species of this genus have been found in the New Hebrides, Loyalty and Fiji Islands and in Micronesia and southern Polynesia. Prior to Marshall's extensive revision of the Celeuthetini in 1956, these weevils were mostly referred incorrectly to *Trigonops*, *Celeuthetes* and *Heteroglymma*. The New Hebrides seem to be the center of development of the genus, and that area may mark the eastern limit of endemic species.

Platysimus are easily recognized amongst the southeastern Polynesian weevils. They are rather small, flightless otiiorhynchines about 4 to 5 mm in length (excluding the head and rostrum); densely clothed with mostly pale squamae, setose; 10 elytral striae are all dis-

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tinct and separate; antennal funicular segments 3 to 7 are all moniliform; there is a deep, transverse sulcus across the base of the rostrum connecting the anterior corners of the eyes, and the rostrum is medially elevated behind the level of the antennal insertions, thus making the dorsal rostral contour strongly irregular.

Platysimus insularis (Boheman) Figs. 1-4.

Celeuthetes insularis Boh., 1843: 251 (Type from Fiji, but erroneously recorded as from Guam).—Karsch, 1881: 1 (first record from Jaluit, Marshall Is.).

Trigonops insularis (Boh.): Zimmerman, 1942: 82.

Platysimus insularis (Boh.): Marshall, 1956: 119.

Sphaerorhinus spongicollis Fairmaire, 1849: 505 (p. 57 in reprint), (Type ♀ from Tahiti).

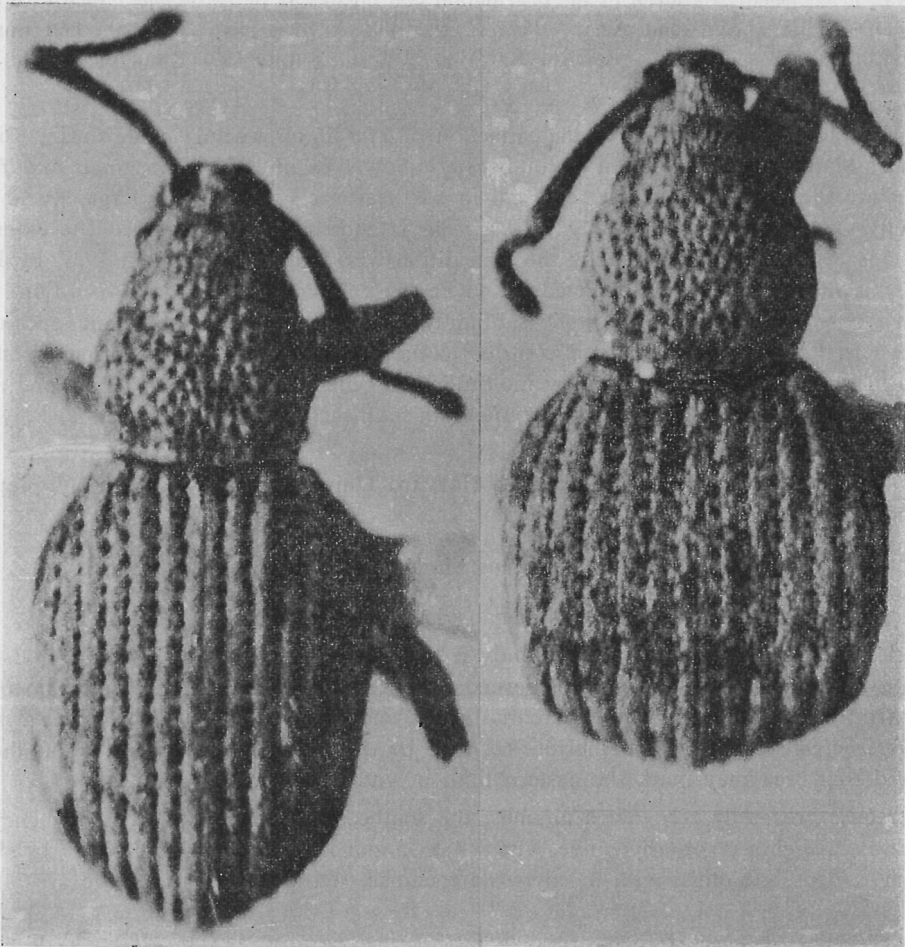


Fig. 1. *Platysimus insularis* (Boheman). Left, ♀; right, ♂. Both specimens are from Tubuai, Austral Is., each measuring 5 mm in total length. (Photos by Prof. F. M. Carpenter.)

—Synonymy by Zimmerman, 1942: 82.

Celeuthetes griseus Fairmaire, 1849: 508 (p. 59 in reprint), (Type ♂ from Tahiti).—Synonymy by Zimmerman, 1942: 82.

Sphaerorhinus carinicollis Fairmaire, 1849: 506 (p. 58 in reprint), (Type ♂ from Tahiti).

New Synonymy.

Elytrurus squamatus Rainbow, 1897: 92 (Type from Funafuti, Ellice Is.).—Synonymy by Marshall, 1938: 69.

HOSTPLANTS: The range of hostplants is unknown, but the adult weevils feed upon the leaves of a variety of plants such as *Ipomoea*, *Lepidium* and *Scaevola*. The larvae are unknown, but no doubt they will be found to feed upon the roots of the hostplants.

DISTRIBUTION: This flightless weevil has been carried by man to many localities in Polynesia, but its present range remains largely to be recorded. It is known to occur in Fiji, Tonga, Samoa, Ellice, Gilbert, Marshall, Cook, Society and Austral Islands. It is strange that it has not become established in Hawaii and was not found in the Marquesas during the intensive and extended work done by the Pacific Entomological Survey. Its

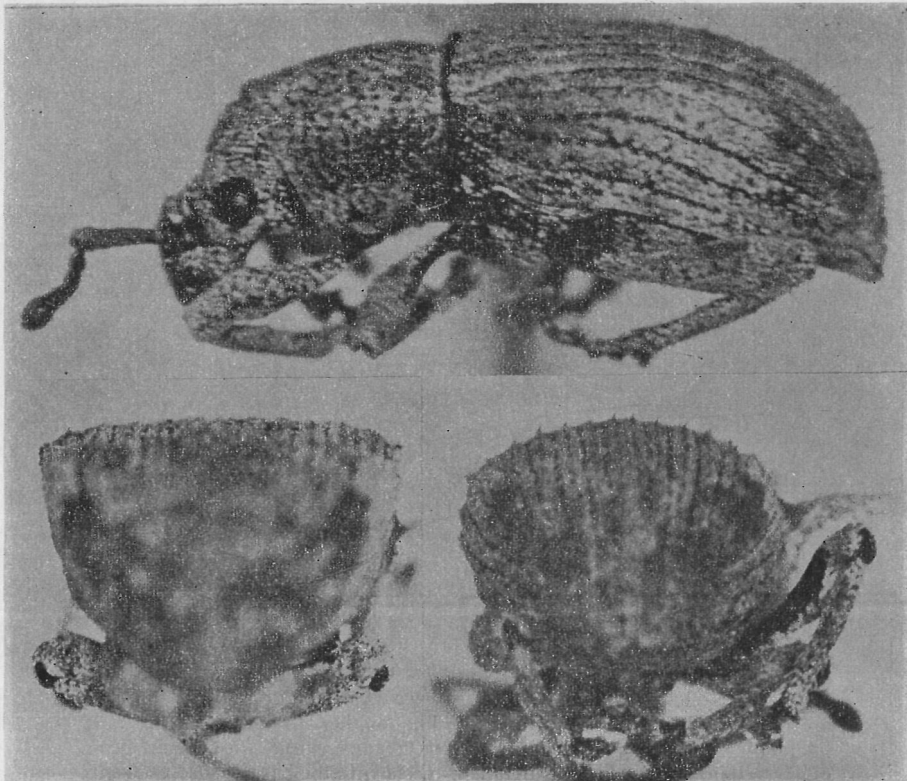


Fig. 2. *Platysimus insularis* (Boheman). Top, lateral view of ♀. Bottom, left, caudal view of ♂ to show flattened dorsal contour of elytra. Bottom, right, caudal view of ♀ to show convex dorsal contour of elytra. These specimens are the same as those shown in fig. 1. (Photos by Prof. F. M. Carpenter.)

place of origin remains to be determined. It is often found on vegetation along the sea-shore, and it may crawl into cargo placed on the shore prior to loading aboard a canoe, boat or ship, and thus it may be carried easily from place to place. The following data from 164 southeastern Polynesian specimens are new:

SOCIETY ISLANDS. TAHITI: 26, beaten from shrubs on Vairoa Plateau, ca. 300 m elev., 30.III.1934, Zimmerman (I believe that most of these specimens were collected from *Scaevola*). HUAHINE: 1, Fare, elev. 3 m, 3.X.1934, Y. Kondo. RAIATEA: 13, swept from low herbage on Tetaro Islet, elev. 1 m, 4.X.1934, Zimmerman (these specimens were probably on *Ipomoea pes-caprae*); 1, Horeu Islet, elev. 1 m, 9.X.1934, C. M. Cooke, Jr.

AUSTRAL ISLANDS. RAIVAVAE: 8, swept from low herbage at Raiurua, elev. 2 m, 5.

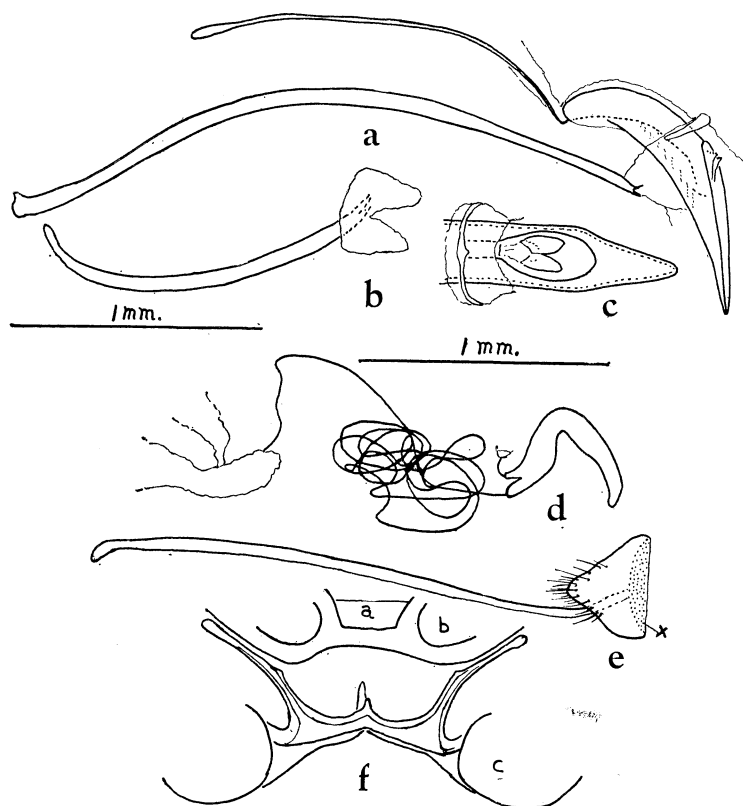


Fig. 3. Sketches of parts of *Platysimus insularis* (Boheman). a, b, c are of details of the ♂ (1 mm scale line applies to all 3 sketches). a, lateral view of aedeagus with phallobase ("tegumen") *in situ* (the apodeme of the phallobase is so long that it projects into the base of the prothorax when at rest); b, urosternite ("spiculum gastrale"); c, dorsal view of apex of aedeagus. d, e, f, details of the ♀ (the 1 mm scale line applies to the 3 sketches). d, spermatheca and attached parts; e, urosternite (the "x" marks a fold); f, metendosternite (a=intercoxal process of mesosternum, b=mesocoxal cavity, c=metacoxal cavity). The ♂ used for these drawings is from Tubuai, Austral Is.; ♀ from Upolu, Samoa.

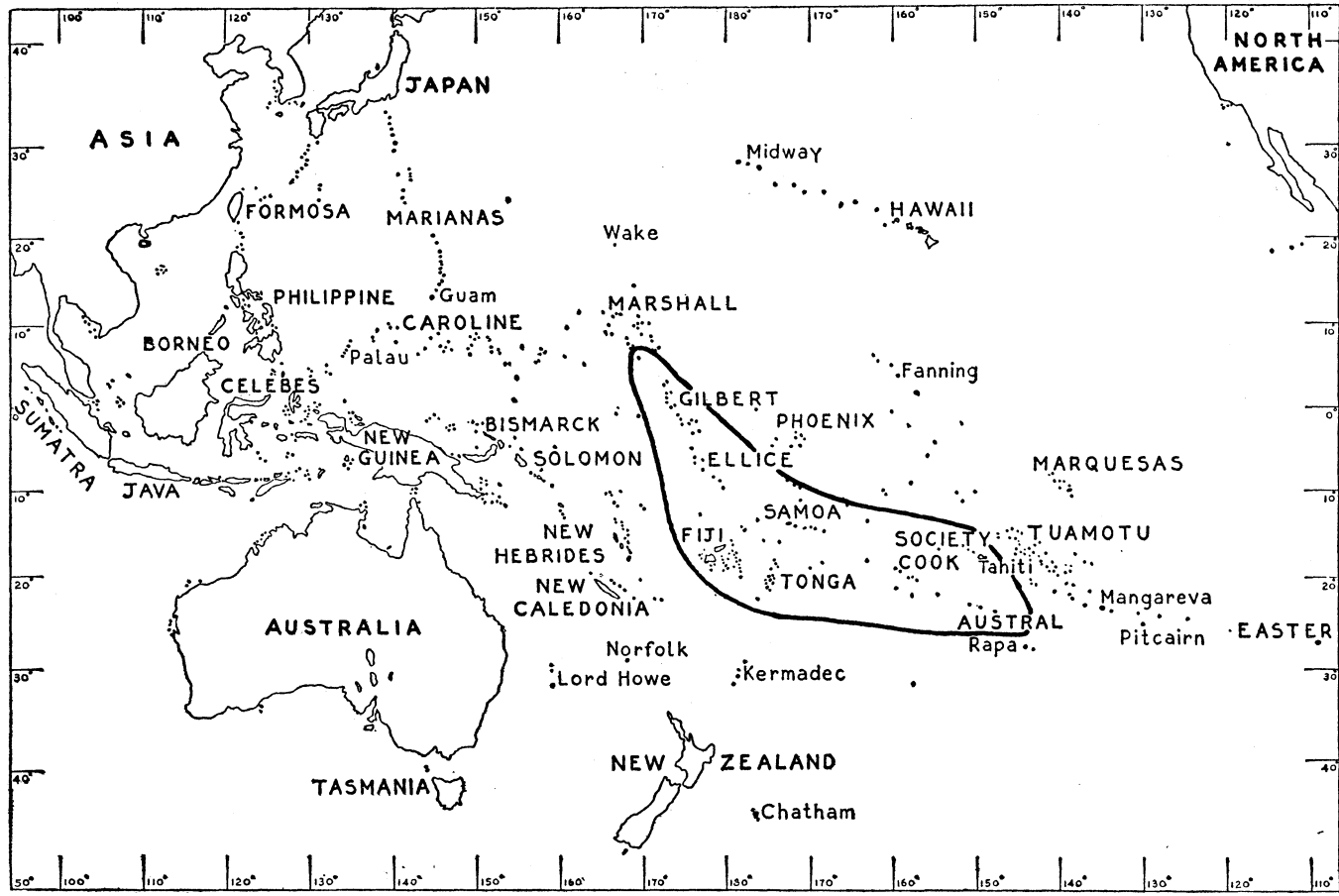


Fig. 4. Map with the area of recorded distribution of *Platysimus insularis* (Boheman) shown in outline.

VIII. 1934, Zimmerman; 2, swept from low herbage nr Ahuoiwi Point, elev. 2 m, 9.VIII. 1934, Zimmerman; 7, among fallen dead or rotting leaves of *Hibiscus tiliaceus* nr Ahuoiwi, ca. 2 m, 11.VIII. 1934, Zimmerman and 2 specimens taken at the same time and place, C. M. Cooke, Jr; 27, swept from shrubbery on Motu Tehau, elev. ca. 2 m, 11.VIII.1934, Zimmerman; 1, swept from low herbage nr Anatonu, elev. ca. 2 m, 12.VIII.1934, Zimmerman. TUBUAI: 2, swept from low herbage at Murivahi, ca. 3 m elev., 16.VIII.1934, Zimmerman; 67, swept from *Lepidium* (Cruciferae), Tapapataua Islet, ca. 2 m, 19.VIII.1934, Zimmerman. RURUTU: 2, ca. 15 m, elev. about 300 m inland from sea, 10.I.1921, A. M. Stokes; 1, coconut grove, about 125 m from sea, 19.I.1921, A. M. Stokes; 2, Moorai, elev. ca. 3 m, 26.VIII.1934, C. M. Cooke, Jr.; 1, Avera, 30.VIII. 1934, Harold St. John. RIMITARA: 1, swept from low herbage in Oromana Hills, elev. ca. 75 m, 4.IX.1934, Zimmerman.

This species is usually found amongst herbage near the seashore. I was, therefore, surprised to find it at about 300 meters in the mountains of the peninsula of Tahiti. It is also unusual that I found it only once during the many weeks I collected on Tahiti. I am confident that its distribution in southeastern Polynesia is much more extensive than reported here, and I can offer no explanation for the fact that I found it in such a small number of places during the course of the Mangarevan Expedition.

This is a sexually dimorphic, variable species. The males have the elytra flattened or transversely shallowly concave and somewhat explanate. The degree of flattening or depression is variable, and extreme forms appear to be different species. The length ranges from 4 to 5 mm (excluding head and rostrum) in the series here recorded. The dense scaling is mostly grayish white with individually very variable brown maculation. The sexual dimorphism and variability misled Fairmaire, and he described several of the individual variants as species. Hence, the rather extensive synonymy indicated above.

These weevils are defoliators, and their habits and hosts are such that it is possible that the species may become of economic importance if they are introduced to areas of cultivated crops.

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