# A New Species of Embioptera from Oceania

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As one moves eastward from the Asiatic shores of the Pacific through its many islands, the Embioptera fauna becomes increasingly limited. The family Embiidae, so rich in Africa, diminishes through India, Malaya, and Indonesia and is not known in the Philippines, New Guinea or on the other Pacific islands. Of the seven families of the order, the family Oligotomidae alone is represented. Here, two groups of the genus *Oligotoma* are present which may be regarded as subgenera, i.e., *Oligotoma* s. str. and *Aposthonia* Krauss. The former has contributed three species: *saundersii* (Westwood), *greeniana* Enderlein (Formosa, China, Philippine Islands), and *humbertiana* Saussure, by way of man's commerce from its center of endemicity—India. The subgenus *Aposthonia* has apparently recently divided up into many closely related species which comprise the entire known endemic Embioptera fauna of such islands as the Philippines and New Guinea. Many of these species await description or discovery.

In the truly oceanic islands of the Pacific no endemic species have yet been reported. *Oligotoma saundersii* (Westwood) (= *insularis* McL.) an artificially pantropical species, is common in Hawaii where it appears to have been introduced in modern commerce. *Oligotoma humbertiana* Saussure, also widespread through man's commerce, has been collected on Tinian and Guam. This species is very common in the Philippines and in the Orient, but appears to be endemic to southern India.

A third species, named and described below, was discovered by restudy of Bishop Museum specimens. It is a member of the subgenus *Aposthonia* and has been incorrectly identified as *insularis* (Bryan, 1926) and as *vosseleri* (Krauss) by Silvestri (1934). Material of this new species has been collected on many islands in the eastern Pacific and its occurrence on the tiny islands of Nihoa and Laysan and in the wild hinterland of the larger islands, suggests a very early or ancient dispersal by aboriginal man or other agencies.

**Oligotoma (Aposthonia) oceania** Ross, new species (Fig. 1)

*Holotype male.*—General color tan with head and abdominal terminalia chestnut-brown. Body length 9.0 mm.; fore-wing length 6.2 mm., breadth 1.75 mm. Head with form as figured; cranium, basal segment of antenna, and submentum unicolorous chestnut-brown; gular region and margins of occipital foramen tan; flagellar antennal segments and palpi light brown; mandibles golden-yellow except for amber distal margins. Thorax various shades of light brown or tan, the pronotum and legs somewhat darker. Hind basitarsi with but one sole-bladder, plantar setae golden-yellow. Wings light tan without specific venational features. Abdomen, except for terminalia, uniform tan; terminalia structures as figured; left hemitergite (10 L) chestnut-brown with process (10 LP) golden-brown; becoming straw-yellow distad; hook of left paraproct (LPPT) golden-yellow; left cercus-basipodite (LCB) almost colorless; cerci light brown.

*Female* (in alcohol):—General color dark chestnut-brown throughout sclerotized portions; membranous areas tan. Body length 11.5 mm. Coxae and trochanters of mid and hind legs and base of hind tibiae pale tan in strong contrast to other leg segments which are dark chestnut-brown. Eighth abdominal sternite without pattern, medial area pale tan blending to medium brown at lateral and caudal margins; ninth sternite rather unicolorous light brown, darker toward anterior margin.

HOLOTYPE: Male, on slide, beat from *Weinmannia parviflora,* 2150 ft., Fatu Hiva, Marquesas Islands, August 25, 1930, by Le Bronnec (Pacific Entomological Survey). Deposited in the collection of the Bishop Museum, Honolulu.

PARATYPES: Male, on slide, Ponau, Hiva Oa, Marquesas Islands, 1650 ft., March 5, 1929 (Mumford and Adamson) deposited in the writer's collection. Male, on slide above data but Atuona, Hiva Oa, Feb. 17, 1929, deposited in the Bishop Museum.

DISTRIBUTION: **Marquesas Islands**—numerous juvenile forms collected in the hinterland at various altitudes, recorded by Silvestri (1934) as *vosseleri* (Krauss) and restudied at this time, undoubtedly represent *oceania.* **Rapa**—numerous females and juveniles collected by E. C. Zimmerman in various localities appear to represent this species. **Society Islands**—1 female, Tahiti, recorded by Silvestri (1934) as *vosseleri.* **Austral Islands**—females and young identified by Silvestri as *vosseleri* from Tubuai and Raivava Islands. **Henderson Island**—male and female from north side, 100 ft., June 18, 1934 (E. C. Zimmerman). **Fanning Island**—female, June 25, 1924 (W. B. Herms) (Calif. Acad. Sci.). **Hawaiian Islands**—Laysan, females and immature specimens recorded by Bryan (1926) as *insularis* McL. Nihoa, males and females recorded by Bryan (1926) as *insularis.* Kaula, Aug. 18, 1932 (E. L. Caum) female and young. Oahu, two females, Mt. Tantalus, Jan. 10, 1923 (E. C. Van Dyke) (Calif. Acad. Sci.). Unless otherwise stated all the above specimens are deposited in the collection of the Bishop Museum and were made available through the kindness of E. C. Zimmerman.

It is rather surprising to find this undescribed species inhabiting the tiny residual Hawaiian islands of the leeward group, but even more so on the well collected island of Oahu. Most of the Embioptera collected on Oahu have been those living close to, or in, settled agricultural areas and represent the more recently introduced *saundersii* (Westwood), the males of which are attracted to light. I suspect that *oceania* will be found at higher altitudes and occupying relatively undisturbed wilderness areas. It is quite likely that the males are not strongly, if at all, attracted to light.

*O. oceania* is subgenerically distinct from *saundersii* and can be separated from it at once by the greatly reduced hook of its left paraproct which is developed as a very conspicuous sickle-shaped talon in the latter. The left cercus-basipodite is reduced to a fragment fused to the outer basal margin of the cercus in *oceania* whereas this structure is nearly completely ringed and inwardly lobed in *saundersii.* The basal segment of the left cercus is inwardly lobed distad in *oceania,* and smoothly cylindrical in *saundersii.* Females of the former are lighter in

color, have the mid and hind coxae and trochanters contrastingly paler than the other leg segments, and the median area of the eighth abdominal sternite is pale. All leg segments of *saundersii* are concolorous dark brown and the median area of the eighth sternite has a broad longitudinal dark band separated from the two dark lateral margins by narrow longitudinal pale intervals.

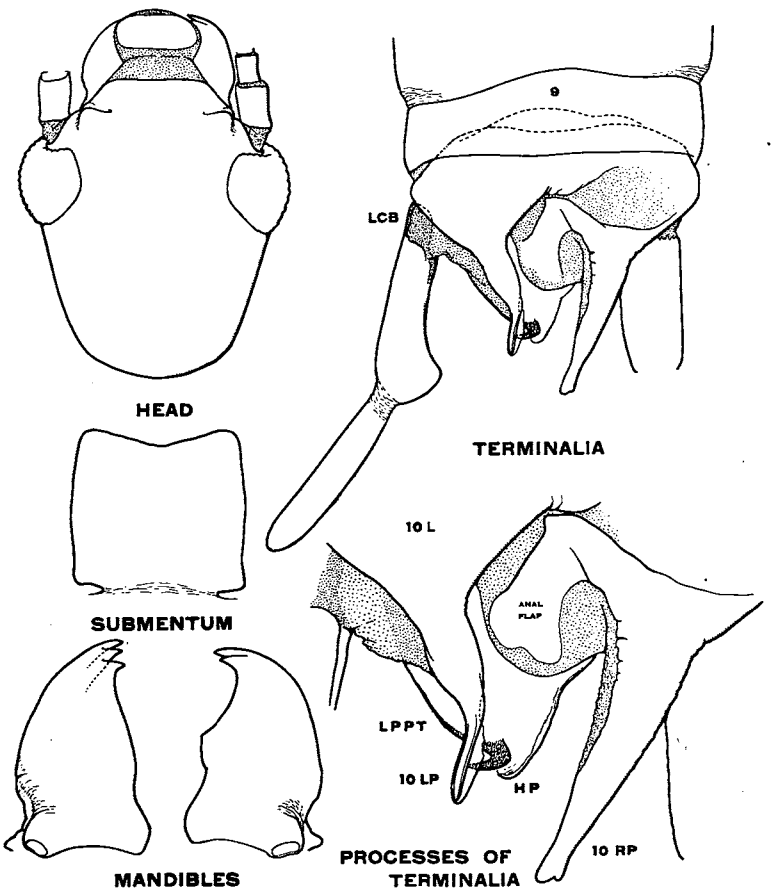


**Figure 1.**—Salient characters of holotype male of *Oligotoma* (*Aposthonia*) *oceania* new species. Explanation of symbols: **9**=ninth tergite; **10L**=left hemitergite of tenth tergite; **10LP**=process of 10L; **10RP**=process of right hemitergite of tenth segment; **HP**=process of hypandrium or ninth sternite; **LPPT**=left paraproct; **LCB**=left cercus-basipodite. Setae omitted, stippling represents membranous areas.

Although a member of the same subgenus, *oceania* should not be confused with *borneënsis* (Hagen) [= *vosseleri* (Krauss)] which is not known to occur east of New Guinea. The latter is characterized by its quadrate, yellowish head with deeply excised and dorsally elevated mandibles (see Ross 1943 and 1948 for description).

*Oceania* is distinguished from all other known *Aposthonia* by its pale coloration, elongate head, distribution and the shape of the left cercus.

## LITERATURE CITED

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