

A NEW SPECIES OF PROTURA FROM  
THE SOLOMON ISLANDS:  
*ACERENTULUS SOLOMONIS* SP. NOV.\*

Gentarō IMADATÉ

On his journey to Melanesia, as a research member of the Expedition conducted by the Osaka Museum of Natural History, Prof. T. Tokioka has brought home some samples of edaphic animals collected in the Island of Guadalcanar. Among many specimens of springtails, spiders and book-scorpions, there has been found a specimen of Protura, which is kindly passed to the author for investigation.

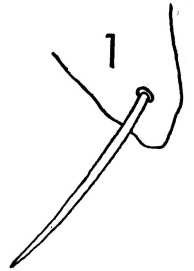
Thanking to Prof. Tokioka and other members of the expedition as well as to Prof. Yosii and Prof. S.L. Tuxen, who have supervised the present study, the detailed description is given as follows:

*Acerentulus solomonis* n. sp.

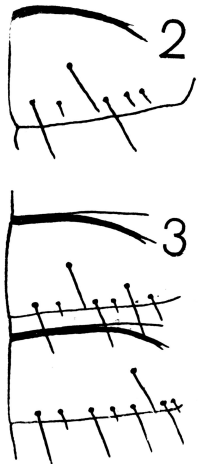
Total length of the body  $600\ \mu$  in extended condition. Integument well chitinized.

Head: Length  $83\ \mu$ , breadth  $63\ \mu$  in dorsal view. Labrum slightly protruded. Pseudoculi oval and bilocular,  $9\ \mu \times 6\ \mu$ , lying nearer to the posterolateral margin. "Filamento di sostegno" of maxilla unbranched and surpasses the maxillary branch. Proximally, it ends in two small nipples as in fig. 4 B. Median pairs of cephalic setae short,  $12\ \mu$  or less.

Thorax: Apodemes poorly developed. Dorsally, the outer pair of prothoracal setae distinctly thin and small, the inner one  $13\ \mu$  in length. Meso- and metathorax with 4 anterior, 2 middle and 12 posterior setae on dorsal side. The anterior setae 1 (A 1) small and thin, only  $6\ \mu$  long. A 2 long,  $14\ \mu$  in length. The middle setae (m 1) remarkably minute,  $5\ \mu$  in length and in  $15\ \mu$  distance. The accessory setae 2 and 3 (P 2a and P 3a) of the posterior row are missing. The posterior setae 3 (P 3) are the longest, being  $22\ \mu$  in length. P 2 ( $12\ \mu$ ) a little longer



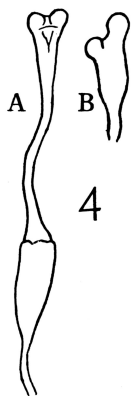
Text-fig. 1: Abdominal appendage II.



Text-fig. 2: Chaetotaxy of tergite I,  
3: Chaetotaxy of tergites VI-VII.

\* Contribution from the Osaka Museum of Natural History, no. 54.  
Scientific Results of the Melanesia Expedition, no. 2.

than P 1 and P 4. P 5 small and not easy to observe. P 1a minute. All ventral setae of thoracic segments small and thin,  $6\mu$  or less in length.



Text-fig. 4:  
"Filamento di  
sostegno."

Legs: Foretarsus  $53\mu$ , claw  $18\mu$ , TR=2.9. The position and the shape of sensillae are as figs. 5-6. On the dorsal side, setae  $\alpha$  1, 2, 3, 4, 5, 6 and 7 are present. Sensilla **t** 1 short and distinct-

ly clavate, **t** 2 fairly broad and long. **t** 3 lanceolate and long. Ex-teriorly, a row of five setae,  $\gamma$  1-5 surround the sensillae **a-g**. **b** extremely long and fairly broad. **c** and **d** probably near to each other and equal in length. **e** and **g** short. **f** long and surpassing the tarsus. Ventrally, a zigzag row of seven setae ( $\beta$  1-7) is observed. Interiorly, small setae  $\delta$  1-5 and long  $\delta$  6 surround the sensillae **a'** and **c'**. **a'** extremely broad and long. **b'** is missing. S-shaped seta is a little longer than claw, which has no inner tooth.

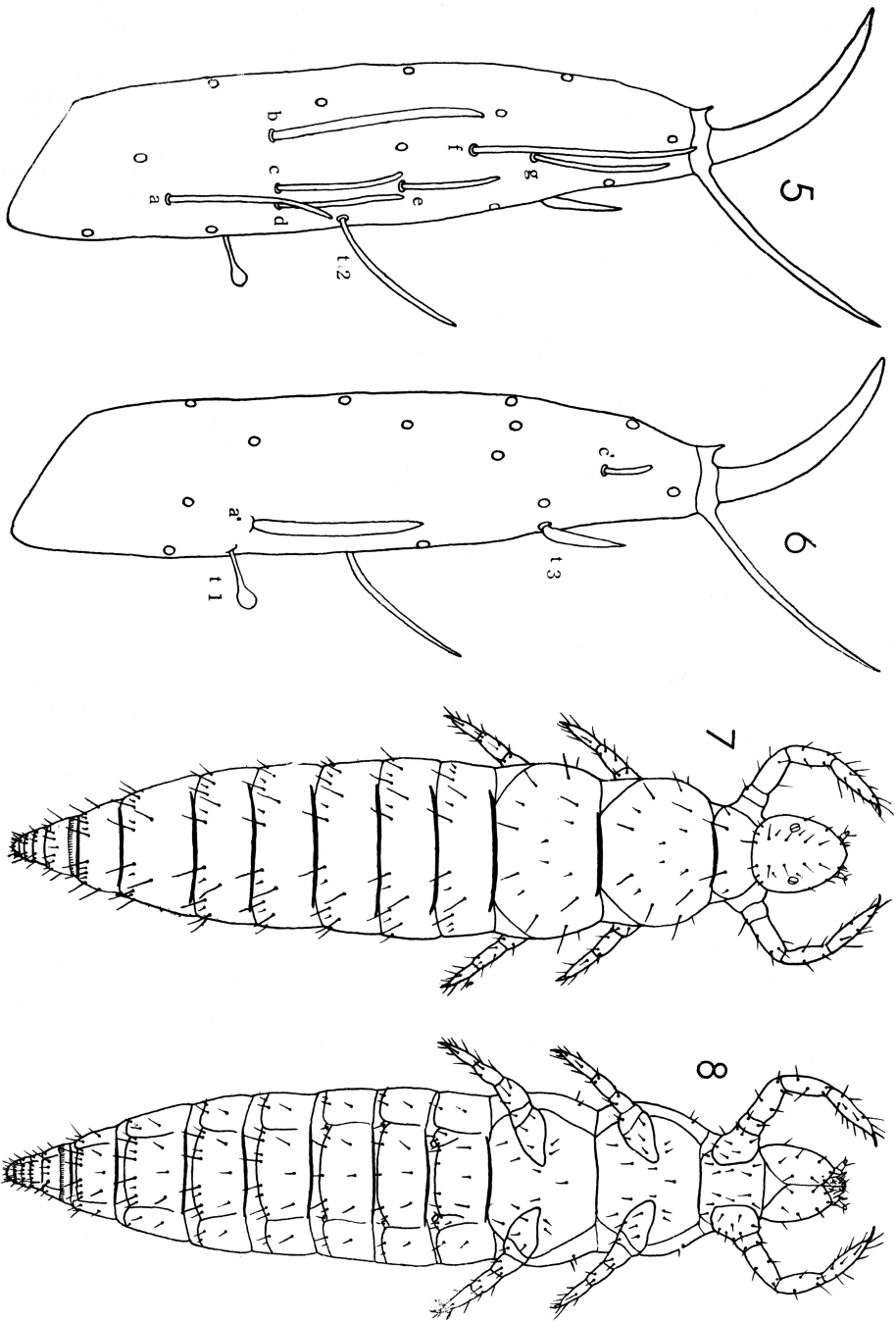
Empodium small. Middle tarsus  $25\mu$ , hind one  $27\mu$ , their claw

$11\mu$  and with one prominent inner tooth.

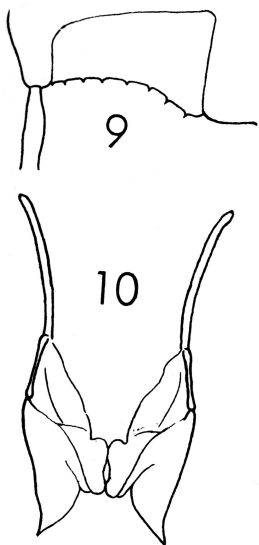
Abdomen: Apodemes developed. Tergite I with one pair of anterior setae (A 2) and five pairs of posterior ones, representing two principal setae (P 1 and P 2) and three accessory ones (P 1a, P 2a and P 2a'). P 2a and P 2a' are located near to each other and lateral to P 2 in position. Tergites II-VI with only one pair of anterior setae (A 2) and six pairs of posterior ones (P 1, P 2, P 3, P 4, P 1a, and P 2a), of which P 3 is located between P 2a and P 4 and is anterior to the other posterior setae. Tergite VII with one pair of anterior setae (A 4) and seven pairs of posterior one representing P 1, P 2, P 3, P 4, P 1a, P 2a and P 4a, the last of which is equivalent to the pleural setae P a of the precedent segments. Tergite VIII with one outer pair of anterior setae, seven middle setae and one pair of posterior setae lying on the outer side of the lateral pectines. All tergal principal setae are  $17-23\mu$  in length and all accessory setae are less than  $3\mu$  in length.

The distinction between tergite and pleurite is not distinct in the anterior four abdominal segment. Tergite VIII has a pectinated band on the anterior margin and the pectinated comb on both sides of the posterior margin. The latter is with 8 small teeth and curved margin as in fig. 9. Abdominal appendage I is two segmented, while II and III are one segmented, small

		D.	V.
Th. I		4	4-2-6
II-III		4-2-12	5-2-4
Abd. I	T.	+	P. S.
II-III	2-10	+	(1-1) 3-4
IV-VI	2-12	+	1-2 3-5
VII	2-12	(+)	1-2 3-8
VIII	2-14		1-1 3-8
IX-X	2-7-2		1-1 4
XI	8		1 4
Telson	4		1 6
	9		6



Text-fig. 5: Exterior view of foretarsal sensillae, 6: Interior view, Dorsal chaetotaxy, 8: Ventral chaetotaxy.



Text-fig.

9: Pectinated comb on  
tergite VIII.

10: Female genital organ.

and with only one minute seta. Female genital organ is as shown in fig. 10. Male unknown.

Holotype: Upper stream of Riv. Tantu, Guadalcanar Isl. Solomon archipelago (20 IX 1958, T. Tokioka leg.).

Notes: The present species falls in the genus *Silvestridia* given by BONET (1942 a) by the reduction of setae upon abdominal legs etc. But, as was kindly suggested to me by Prof. S.L. TUXEN in litteris, *Silvestridia* must better be regarded a natural group within the genus *Acerentulus*. According to him, who has kindly compared the present manuscript with *Silv. atriochaeta*, the two species are different in the tergal chaetotaxy, in the shape of the proximal end of "Filamento di sostegno" and in foretarsal sensilla t-3.

## References

- Bonet, F. (1942 a): Sobre algunos Proturos de Mexico (Nota preliminar); *Ciencia (Mexico)* **3**: 14-17.
- Bonet, F. (1942 b): Descripcion Preliminar de dos nuevos Acerentomidos de Mexico (Protura); *Rev. Soc. mex. Hist. natur.* **3**: 103-107, p1. 17.
- Condé, B. (1951): Les grandes divisions de l'ordre des Protoures; *Bull. Mus. nat. Hist. natur* (ser. 2). **23**: 121-125.
- Imadaté, G and R. Yosii (1959): A synopsis of Japanese species of Protura; *Contr. Biol. Lab. Kyoto Univ.* **6**: 1-43, p1. 1-8.
- Tuxen, S. L. (1956): Neues uber die von Silvestri beschriebenen Proturen; *Boll. Lab. Zool. Gen. e Agr.* **33**: 718-729.