

Miscellaneous notes on the Collembola of Macaronesia

Ryozo YOSHII

KEY WORDS Collembola / Macaronesia

From the large collection of Collembola of Macaronesia prepared by Prof. da Gama Assalino, there has been selected those species which are of special interest for me for investigation. The results are rather astonishing in that some of them are the species widely distributed in the circumtropical area.

That of Cyphoderidae is added to assist the further researches of this group of collembola with the new standpoint of view. Heartly thanks are to Prof. M. M. da Gama Assalino for furnishing me nice occasion to inspect these materials, as well as to the TOYOTA Foundation in Tokyo for the financial support for my trip to Europe, which has resulted to produce the present article.

Seira (Seira) dinizi Gama Fig. 1, A-F

Seira dinizi : Gama 1988

Batidos de plantas, Ribeira Grande, Santo Antão, 04. 12. 88 (6 ex.)

The species is already exactly described by Gama and only the following points may be added for the diagnosis.

Body colour rather pale, only antennae and anterior median patch are pigmented in the preserved specimens. Antennae scaled on basal three segments. Labrum with setae 4/5, 5, 4, prelabrals densely ciliated. All labral setae subequal and with two minute cusps on the margin. Median intrusion is very wide, rounded and the median pair of the distal row of labral setae are within the intruded, smooth area, which is rather remarkable for the group. Outer maxillary lobe is poorly chitinized, possibly with setae as II + iii. Labial basis with setae MRE/LL, all barbed. Legs scaled. Trochanteral organ feebly developed, composed of ca. 20 small, spiny setae in a triangular area and there is a long, ciliated and curving seta near the proximal part of femur on posterior side. Ventral tube is scaled, with many long, barbed setae anteriorly and with a lateral comb, composed of three small and one longer smooth setae. Posterior face is only with 1+1 distal ciliated setae. Lateral flap is bearing more than 8 ciliated setae, but without a smooth seta, which is known in *S ferrarii* (Dallai et Ferrari 1970, fig. III A). Terminal tubule is smooth. Furca normal without any appendix on dens.

Macrochaetotaxy of the trunk is, as already stated in Gama, very constant and characteristic for this species. That of the head is also very constant and just the same with that of *S. ferrarii*, but different from that of *S. taeniata*.

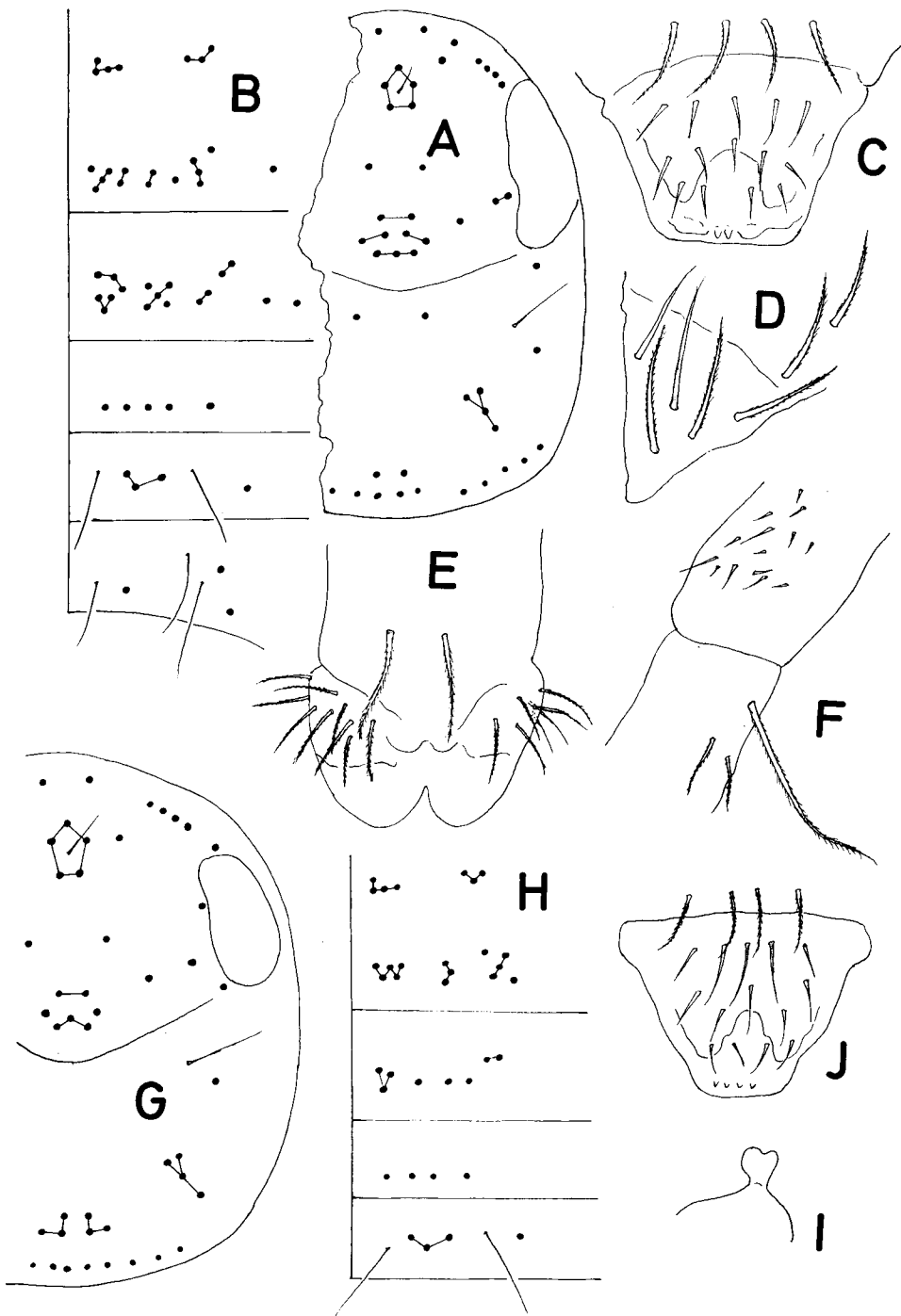


Fig. 1 *Seira dinizi* Gama from Macaronesia
 A: head, B: trunk, C: labrum, D: labial basis, E: ventral tube.
Seira taeniata (Handschin) from Macaronesia
 G: head, H: trunk, I: antennal apex, J: labrum.

***Seira (Seira) taeniata* (Handschin) Fig. 1, G-J**

Lepidocyrtinus taeniatus: Handschin 1925

Seira taeniatoides: Yosii 1955

Seira irricolor. Yosii et Ashraf 1964

Seira delamarei: Jacquemart 1980, a, b

? *Drepanocyrtus terrestris*: Folsom 1932

Seira terrestris: Gapud 1971

De detritos, Santa Cruz, Santiago, 28. 03. 88 (23 ex.), Figueira de Cima, San Antão, 12. 01. 85 (6 ex.)

The species is easily to be identified by the arrangement of macrosetae, which is very constant. The material is to be identified as *S. delamarei* of Zaire, which has been later reported also from Seychelles and Thailand by the same author (Jacquemart 1980 b). But it is already known from Pakistan under the name of *Seira iricolor* Yosii et Ashraf. Independent from these, the same species is reported from Philippine with the name of *Seira terrestris* (Folsom) by Gapud (1971), although the macrochaetal pattern is not compared with the Hawaiian example. Apart from these, there is one example of *Seira* left in the Museum Zoologicum Bogoriense labelled as *Lepidocyrtinus taeniatus* by Handschin himself, whose macrochaetal pattern is quite identical with this species. Yoshii et Yayuk (1989) has found this species abundant in Java and Sumbawa and this is possibly the oldest name to be adopted for the species, provided *Seira frigida* and *Seira indra* Imms, 1912 of India are not the present species. Some key characters in the Macaronesian examples are as in fig. 1 by which, in contrast to the figure of *S. iricolor*, all prelabral setae are ciliated, which might be either individual or local variation. Setae of the ventral tube are just the same with it (1. c. p. 54, fig. 3).

The distribution so far known is ranging Java, Thai, Japan (Okinawa), Philippine, Hawaii (?), Pakistan, Seychelles, Zaire and Canary Islands.

***Ascocyrtus (Dahlcyrus) dahlii* (Schaffer)**

Lepidocyrtus dahlii: Schaffer 1898, Yoshii 1982

Ascocyrtus dahlii: Yoshii et Yayuk 1989

Sao Jorge, Ilha de Santiago, 1-31. 08. 82

This is the first report of the species from outside Southeast Asia and Oceania and the first report of *Dahlcyrus* from Africa. Having a rounded appendix on dental lobe, it is to be placed in *Ascocyrtus*. By the scales only on ant. I and femur, it must be placed in *Dahlcyrus*. By the presence of truncate unguiculus on fore- and mid legs and lanceolate form of it in hind-legs, as well as by Mm(r) e/ll of labial basal setae and by the quadrituberculate labral margin, it may be safely to be identified as *A. (D.) dahlii*.

***Cyphoderus (Cyphoderus) albinus* Nicolet** Fig. 2

Sao Jorge Iiha de Santiago, 17/08/81 (4♀, 2♂)

The research of *Cyphoderus* has made a long astray from the time of Börner 1906, when he has described *C. javanus*, *assimilis*, and *agnotus*, encouraged by the assumption that "eine kosmopolitische Verbreitung dieser Art (*C. albinus*) bei ihrer im wesentlichen auf die Vergesellschaftung mit Ameisen angewiesenen Lebensweise nicht gut dentbar ist", and by introducing the dentation of unguis for the species character, which is possibly of minor importance. The subsequent researches relied to this assumption must be checked once again and what is tried this time is only the first trial. Anyway, the distinction between *C. albinus* and *C. javanus* is quite certain.

Body length ca. 1.0 mm, white. ant. segm. ratio as 10: 28: 14: 32. Ant. I is with a few setae and three minute pegs on dorsal side. Labrum with setae 4/5, 5, 4, all smooth and inner pair of the second row are longer than others. Outer max. lobe with setae II+i. Labial basis with setae m-e/1 (1). i.e. l_2 is vestigial. Legs unscaled. Unguis carinate, with a paired, unequally large inner proximal teeth and without distal one. Unguiculus with a large outer tooth. Tenent hair spathulate. Trochanteral organ is reduced to some 15 spinous setae in L-shape. Ventral tube with a typical arrangement of setae for *Cyphoderus*, distal pair of the posterior face are smooth, others possibly rugose, setae of lateral flap 2, smooth. Rami tenaculi quadridentate, corpus with one anterior seta. Furca well developed. Manubrium is ventrally only scaled, but without terminal seta. Dorsally, it is only with setae either ciliated (large) or smooth (small), whose arrangement is symmetrical as in Fig. 2, I, perhaps useful for taxonomic works. Lateral setae are 5+5, smooth. Dens is with winged setae 6 on outer and 5 on inner row and with 4 ciliated dorsal setae. From three proximal setae two dorsal ones are ciliated and the other outer one is smooth, the median one is much larger than others. The large inner distal winged seta is as long as the mucro. Mucro elongate either bidentate (female) or falciform (male) and one minute lamella is often attached to the side.

On the head the facial area is with ciliated setae, the prefrontal three are all heavily ciliated and only the prelabral and 2+2 anterior setae are smooth. On the frontal area f_0 is a vestigial, rounded apparatus. All f_1 to f_5 are barbed. Among them f_2 , f_3 and f_5 are very large and thick, while f_4 is smaller than the others. Anterior margin of th. II is without large setae, with a row of equally small, smooth setae. s. s. are 2, 3, 2 on abd. II, III, IV, all of them are with accessory, minute setae, but their arrangement is seemingly not fixed. Setal pattern of abd. IV with 2+2 sensillae is symmetrical.

From the examples of Macaronesia the falciform or inerme-form of *C. albinus* has now proved to be the male of the bidentate ones for which the name *C. albinus apatelus* Börner, 1913 is already given. Since it is rather rare compared to the bidentate ones, the species may be facultative parthenogenetic in nature.

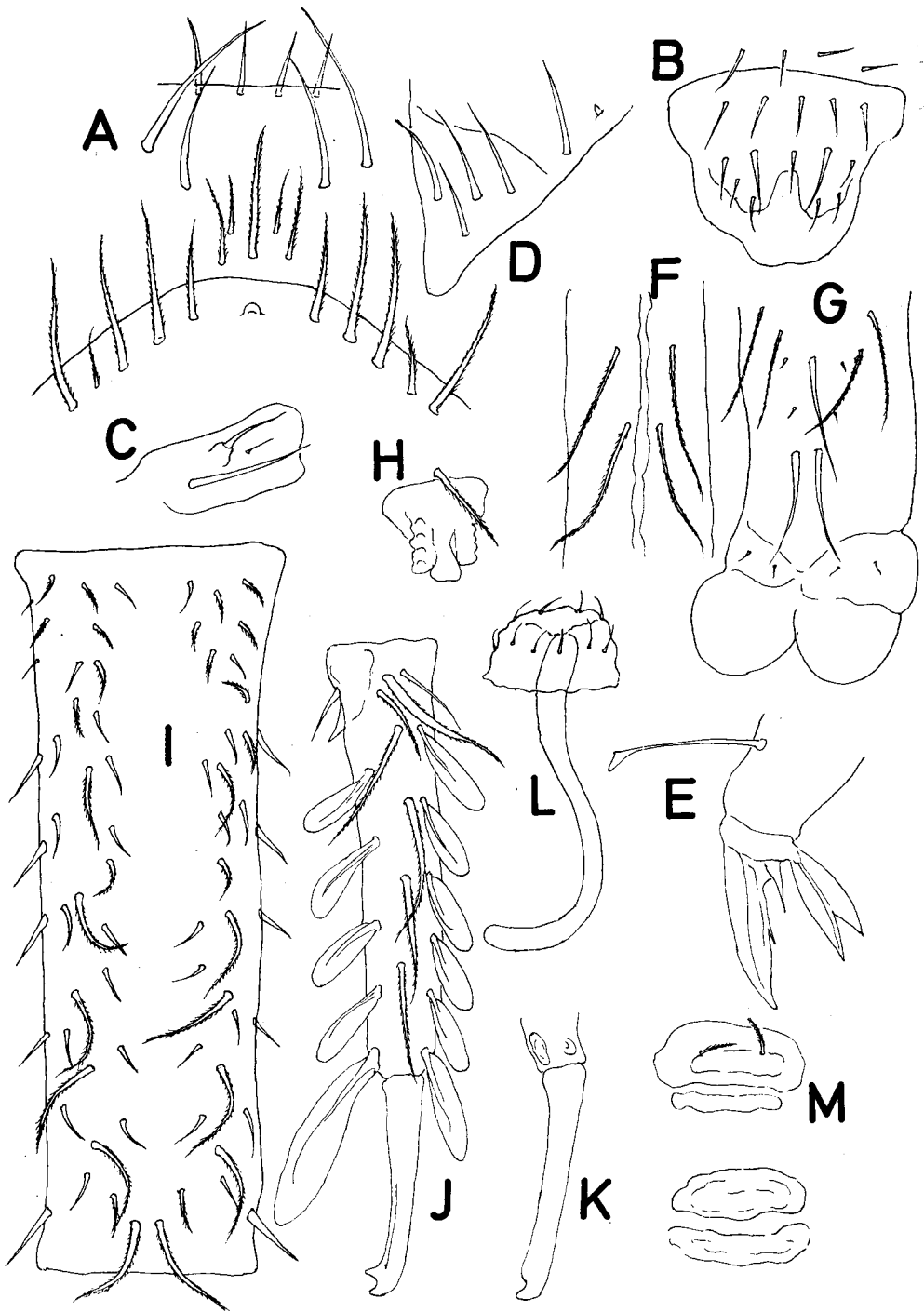


Fig. 2 *Cyphoderus albinus* Nicolet from Macaronesia

A: facial and frontal area, B: labrum, C: outer max. lobe,
 D: labium, E: hind claw, F, G: ventral tube, H: tenaculum,
 I: manubrium, J, K: dens and mucro (male and female),
 M: genital opening.

***Trogolaphysa cf. carpenteri* (Denis)**

Paronella carpenteri : Denis 1925, Yoshii 1988

Por baixa be pedras, Ribeira das patas, Santo Antão, 5-12. 11. 88 (5 ex.)

In my previous paper the genus *Paronella* is provisionally separated from *Trogolaphysa* in that the prelabral setae are smooth and not ciliated. Since, however, the genus *Paronella* is newly defined by Thibaud et Najt (1988) as having the lateral row of spines on manubrium and also Palacios Vargas *et al.* (1985) have found the prelabral setae of *Trogolaphysa* either smooth or ciliated, the generic name must be changed.

Macaronesian examples differs from those of Mexico etc. only in that the prelabrals are ciliated and not smooth. I could not find the exact number of eyes, if it is 6+6, then some species of Palacios Vargas must be consulted.

Literature Cited

- Börner, C. 1913. Neue Cyphoderinen. *Zool. Anz.* 41 : 274-284.
 Cassagnau, P. 1963. Collemboles d'Amerique du Sud II. *Biol. Amer. Austr.* 2 : 127-148.
 Dallai, R. et R. Ferrari. 1970. Recherche sui Collemboli VIII. *Redia* 52 : 131-137.
 Delamare-Deboutteville, Cl. 1948. Recherches sur les Collemboles termitophiles et myrmecophiles. *Arch. Zool. exp. gen.* 85 : 261-425.
 Denis, J. R. Sur les Collemboles du Museum de Paris. 2me partie. *Ann. Soc. ent. Fr.* 94 : 261-290.
 Folsom, J. W. 1932. Hawaiian Collembola. *Proc. Hawaii ent. Soc.* 8 : 51-80.
 Gama, M. M. da, 1988. Colembolos das Canarias. *Actas III Congr. Iberico Ent. Gnanada*, 73-90.
 Gapud, V. P. 1971. Studies on Philippine Collembola III. *Phil. Ent.* 2 : 1-50.
 Handschin, E. 1925. Beiträge zur Collembolenfauna der Sundainseln. *Treubia* 6 : 225-270.
 Jacquemart, J. 1980a. Collemboles entomobryens nouveaux d'Afrique Centrale. *Bull. Inst. r. Sci. ant. Belg.* 52, 14, 15 pps.
 ——— 1980b. Collemboles recoltés par G. Marlier aux Iles Seychelles. *l. c.* 52, 27, 12 pps.
 Schäffer, C. 1898. Collembolen des Bismarck Archipels. *Arch. f. Naturgesch.* 64 : 393-425.
 Palacios-Vargas J. *et al.* 1985. Taxonomia y biogeografia de *Troglopedetes* con enfasis en las species cavernícolas. *Folia entom. Mexicana* 65 : 3-35.
 Yosii, R. 1955. Meeresinsekten der Tokara Inseln VI, Collembolen. *Publ. Seto Mar. biol. Lab.* 4 : 379-401.
 ——— 1982. Lepidocyrtid Collembola of Sabah. *Ent. Rep. Sabah For. Res. Cent. no.* 5, 47 pps.
 Yosii, R. et M. Ashraf. 1964. On some Collembola of west Pakistan III. *Pakistan Jour. Sci. Res.* 16 : 52-58.
 Yoshii, R. et R. S. Yayuk. 1989. Notes on the Collembolan Fauna of Indonesia and its Vicinities. *AZAO* 1 : 23-90.

Address of the Author :

(Mr) Ryoza Yoshii, D. Sc. 吉井良三

637-5 Shokokuji Monzen-cho, Kamikyo-ku, Kyoto, JAPAN 606 京都市上京区相国寺門前町637-5