

Fauna Ibérica vol. 8 *Collembola Poduromorpha*. 1997 by Rafael Jordana, Javier Arbea, Carlos Simón and María Lucíañez. Museo Nacional de Ciencias Naturales. Madrid 807 pp.

I.S.B.N.: 84-00-07644-3.

P.V.P.: 7.500 pts. (IVA incluido).

Adquisición: Servicio de Publicaciones del CSIC (Vitrubio, 8. 28006 Madrid) y librerías especializadas.

This massive tome is a very useful addition to our knowledge of the European Collembola fauna. The Organization of the sections is clear and easily usable. The work is amply illustrated and has excellent tabular presentation of data for chaetotaxy in most species. It is very well indexed and has an excellent bibliography. The species lists are clear and well presented.

The introductory section is abbreviated but for a regional fauna, limited to the Poduromorpha, it is adequate. It should have been noted that in all Collembola studied in detail there is a period of maximum reproductive ability and that where molting continues there is a progressive loss of fecundity and in some cases, a reduction in size. There is no mention of the important existence of anhydrobiosis in Collembola.

In the morphology section there is little and incomplete exposition of the taxonomically important features in non Poduromorpha groups or the availability of computer generated taxonomic aids. Throughout the work there is a frequent use of subspecies but only very rarely is there any discussion of the basis on which a decision to classify the taxa as subspecies is given.

In the section on habitats it should be noted that while Collembola are primarily soil and litter inhabitants in temperate or Arctic regions, in the humid tropics they are primarily inhabitants of vegetation and debris associated with epiphytes.

In the taxonomic portions the keys are clear; however, the fact that the illustrations referred to in these are scattered throughout the text, rather than directly associated with the keys makes them awkward to use. Another problem is presented by the fact that synonymies have inadequate discussion. For local species this is no problem but for species such as *Hypogastrura (Ceratoophysella) armata* and *Protaphorura armata* it is important that we understand which taxa the authors consider to be synonyms of these species. For *Hypogastrura (s.s.) affinis* the authors indicate in the text that the types are similar to *boldori* and that it has been described as *H. tullbergi* by many authors but give us no hint as to who these are. Another minor problem is presented by the fact that only localities already men-

tioned in the literature are given. Surely the material examined by the authors included specimens from other localities but we are left unaware of these. More importantly, except in a few cases, we are not informed of what the illustrations were prepared from. Are they composite drawings or taken from specimens of particular localities or redrawing of already published figures? This information could be of some importance because in some cases the drawings do not agree with already published figures of the given species. For example the illustration by Gama of *Hypogastrura tullbergi* (presumably actually *affinis*) disagrees with that shown by the authors. Similarly the figures of chaetotaxy for *Schoetella ununguiculata* and *Willemia intermedia* differ from those shown by Babenko *et al.* (1994) and Christiansen & Bellinger 1980. Another minor problem with the illustrations concerns the illustrated tuberculations or cuticular features of the antennae. These are never explained and, assuming they were the largest granulations to be seen, wherever these could be checked against specimens they were found to be exaggerated. For example in *Podura aquatica* these were shown to be 3X as large as normal seta bases. Checking against specimens from three localities they were found to all be smaller than normal seta bases.

A more important flaw concerns the covert redefinition of the genera *Typhlogastrura*, *Schaefferia* and *Ceratoophysella*. The definition of *Schaefferia* on the basis of the fusion of the mucro with the dens is not workable since there are various intermediate levels of fusion (viz. *S. vandolica*, *baschkirica* & *czernovi*). Similarly limiting the genus *Typhlogastrura* to eyeless species may work for Iberian species but certainly cannot globally. Such a treatment ignores the work of J.M. Thibaud who has worked with this group of species more than anybody else. A revision of the reduced eye Hypogastrurids would be very worthwhile but this should not be achieved in such a manner but rather as a part of a major study devoted to the global members of this group.

Another serious problem involves classification in Tullberginae. This monograph (and Lucíañez & Simón, 1991) use the number of sense clubs in the third antennal segment sense organ as the primary tribal distinction, but the number varies in *Tullbergia mala*, and even if it might be claimed that this species is composite, the character varies in the "*collis*" group, which certainly seems to be a natural group on the basis of the PAO form, chaetotaxy (median setae), and distribution. Also the

report of a single sense club in *Austraphorura* is suspect, since the single type specimen is in poor condition. As far as *Stenaphorura-Stenaphorurella* is concerned, Nosek in 1975 corrected Absolon's account of *S. japygiformis* and reported 3 sense clubs, making it indistinguishable in this respect from *S. quadrispina* and the genus *Stenaphorurella* unnecessary.

In spite of these problems I feel that this is a very valuable and important work. The development of a system for identifying the setae in *Onychiurus s.l.* should furnish a valuable tool for

taxonomic analysis. It is already clear that what is called *Protaphorura armata* in this work is not the same taxon as what has been called this by Folsom and Christiansen & Bellinger in North America. This work is clearly one of a few works against which all future regional taxonomies will be measured.

*Kenneth Christiansen*  
Grinnell College  
Grinnell  
IA 50112 USA