

## THE IDENTITY OF H.G. SCOTT'S COLLEMBOLA IN THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA, PA<sup>1</sup>

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**ABSTRACT:** The identity of types of 30 species of North American and Japanese Collembola is discussed; the reliability of other determinations in this collection is evaluated.

From 1958 to 1965, Dr. H.G. Scott published a series of papers in *Entomological News*, giving new records and descriptions of Collembola from New Mexico, several other states, and Japan. Several genera and many species were described as new in these papers, and virtually all the state records given were new.

During preparation of the *Collembola of North America* (Christiansen & Bellinger, 1980-81) we were able to examine types of a few of Scott's species, either through the kindness of Dr. Scott or from study of museum collections. The remaining types and other material recorded by Scott were not available at that time. In the work mentioned, we were able only to state the identity of the species whose types we had seen; other new species were included on the basis of Scott's descriptions, or were omitted, and in the absence of confirmation from actual specimens, records of previously described species were also omitted.

A large part of the material on which Dr. Scott's papers were based has now been deposited in the Academy of Natural Sciences (Roback, 1981). I have been able to study this collection and to remount specimens (including types) when necessary. In the following, species are listed by Scott's determinations, in alphabetical order, with my opinion of their identity.

### Type Material

**Anurida violacea** Scott, 1960, Ent. News 71: holotype, no data, but collection code 110C. Specimen is a *Xenylla*, probably *humicola* (O. Fabricius).

**Biacanthella neomexicana** Scott, 1961, Ent. News 72: 93, 94; holotype and 27 paratypes, all with locality and date as in original description and/or collection code 35C. All are *Hypogastrura* (*Hypogastrura*) sp., apparently in first instar. *Biacanthella* is a synonym of *Hypogastrura*, as stated by Christiansen & Bellinger, 1980; *B. neomexicana* appears more like *maynardi* Christiansen & Bellinger than *oregonensis* Yosii, as stated there, but in view of their age the specimens cannot be precisely determined.

**Bourletiella caeruleacauda** Scott, 1965, Ent. News 76: 50; holotype without data, paratype from listed type locality, both with collection code 154C. Both are *Bourletiella* (*Deuterosminthurus*) sp., not clearly visible and not more precisely determined.

**Bourletiella hoffi** Scott, 1965, Ent. News 76: 52; holotype, without data, with collection

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code 268C. Identified as *B. (Deuterosminthurus) cf. validentata* Snider, 1978; characters are not sufficiently clear to establish the synonymy.

***Bourletiella multimaculata*** Scott, 1965, Ent. News 76: 53; holotype, without data, with collection code 405C. Identified also as *Bourletiella (Deuterosminthurus) cf. validentata* Snider, 1978, with same reservation.

***Drepanura annulicornuta*** Scott, 1963, Ent. News 74: 11; holotype, without data, with collection code 217C. Identified as *Entomobrya (Drepanura) sp.*, somewhat shrivelled (which may explain the reported subsegmentation of the fourth antennal segment); pattern different from that described for other Nearctic species, but not suitable for redescription.

***Drepanura neomexicana*** Scott, 1963, Ent. News 74: 12; holotype, without data, with collection code 132C. Identified as *E. (Drepanura) sp.*, possibly dark *californica* Schött. "Paratypes," one with different locality data and both with different collection codes (contrary to statement in original description), are *E. (D.) californica*, a distinctive color form, as noted in Christiansen & Bellinger, p. 825.

***Drepanura socorrensis*** Scott, 1963, Ent. News 74: 12; holotype, without data, with collection code 383C. Identified as *E. (Drepanura) sp.*, probably juvenile; = *E. (D.) californica*?

***Folsomia hoffi*** Scott, 1961, Ent. News 72: 264; holotype, without data, with collection code 103C. *Folsomia sp. cf. duodecimoculata* Ford, 1962, not *F. hoffi* sensu Christiansen & Bellinger, pp. 644-645. "Paratypes" (4) with three different locality codes (contrary to original description) appear to be *F. hoffi* sensu Christiansen & Bellinger. Pending a revision, with fresh material, of the group of species which includes *hoffi* in these two senses, it seems best not to attempt a more precise determination of the holotype.

***Hoffia robusta*** Scott, 1961, Ent. News 72: 63; holotype and paratype from stated type locality, with collection code 17C. Identified as *Tafallia sp.*, as in Christiansen & Bellinger, p. 246. *Hoffia* is a synonym of *Tafallia*; *robusta* is a good species of *Tafallia*.

***Hypogastrura albamaculata*** Scott, 1960, Ent. News 71: 55; holotype and paratype, from given type locality, with collection code 175C. Specimens are *Xenylla*, probably *pallescens* (Scott), 1960. The name *albamaculata* has priority over *pallescens* and should replace it if the synonymy can be confirmed.

***Hypogastrura japonica*** Scott, 1961, Ent. News 72: 122; holotype and paratype from type locality with collection code 111C. Identified as *Hypogastrura (Hypogastrura) sp.* not fitting the description of any species recorded from Japan.

***Hypogastrura punctata*** (Coleman), 1941, "neotype," Ent. News 71: 58; from locality as given by Scott with collection code 26C. Specimen is *Hypogastrura (Hypogastrura) cf. nivicola* (Fitch). Scott's specimen resembles Coleman's description in pattern but not in structure (contrary to Scott's statement) and is from New Mexico rather than southern California. In my opinion it does not qualify as neotype and has no significance in nomenclature.

***Isotoma louisiana*** Scott, 1962, Ent. News 73: 68; holotype, from type locality. This is a striking species which resembles *Agrenia* (tuberculate dentes) and *Isotomurus* (abdominal bothriotrichia) but which does not fit in any recognized genus.

***Neanura pseudornata*** Scott, 1961, Ent. News 72: 124; holotype, from type locality, collection code 115C. Identified as a species of *Lobella* or *Crossodonthina*, not matching any species recorded from Japan; mouthparts not visible.

***Neanurodes neomexicanus*** Scott, 1960, Ent. News 71: 190; holotype, from type locality, collection code 372C. Specimen is a *Brachystomella* but does not match any known Nearctic species. *Neanurodes* Scott is a new synonym of *Brachystomella* Agren.



- Neosminthurus purpureus*** Scott, 1964, Ent. News 75: 260; holotype and paratype from type locality, collection code 51C. Both are *Neosminthurus clavatus* (Banks) as stated by Christiansen & Bellinger, p. 1185.
- Orchesella rubra*** Scott, 1963, Ent. News 74: 250; holotype and three paratypes, all with locality code 148C and one paratype with data corresponding to type locality. The specimen labelled "holotype" is *Isotoma viridis* Bourlet; two paratypes are *Entomobrya* (*Entomobryoides*) *guthriei*, to which *O. rubra* was sunk by Christiansen & Bellinger, p. 877; one paratype is *E. (Entomobrya)* sp. The supposed seven antennal segments are perhaps suggested by shrivelling and local constrictions on one antenna of one of the *E. guthriei* specimens, but otherwise all antennae are normal (with four segments).
- Pararrhopalites neomexicanus*** Scott, 1964, Ent. News 75: 264; holotype and paratype, without data, with collection code 187C; two paratypes with a different collection code, 171C, but from the described type locality. All are juvenile specimens of *Sminthurus* and not further determinable (though two of the paratypes might belong to *S. eiseni*).
- Proisotoma hoffi*** Scott, 1962, Ent. News 73: 20; holotype, without data, with collection code 5C. This appears to be *Folsomia hoffi* (Scott) as noted by Christiansen & Bellinger, p. 645, except for having 2 + 1 ventral manubrial setae.
- Proisotoma subsegmentata*** Scott, 1959, Ent. News 77: 13; holotype, from type locality as given in original description, code 129C. Specimen is an *Isotoma* (*Desoria*) sp. of the "olivacea" group, in the process of molting; the supposed 7-segmented abdomen is the result of constriction of the third abdominal tergite by part of the exuviae.
- Sminthurides pseudoviolaceus*** Scott, 1964, Ent. News 75: 50; holotype, without data, with collection code 400C. Specimen is a first instar sminthurid, molting to the second instar, belonging to the subfamily Sminthurinae but not determinable further.
- Sphyrotheca binoculara*** Scott, 1964, Ent. News 75: 263; holotype, without data, and three paratypes, one from stated type locality, all with collection code 189C. The holotype is an immature *Arrhopalites*, undeterminable; two paratypes are also *Arrhopalites*, of two species; the third paratype is *Collophora* sp.
- Spinachorutes krafti*** Scott, 1962, Ent. News 73: 238; holotype? and paratype from described type locality. Specimens have been obscured by deterioration of the medium, but visible characters are consistent with placement in *Hypogastrura* (*Ceratophysella*) (Christiansen & Bellinger, pp. 169-170). *Spinachorutes* is a junior synonym of *Ceratophysella*.
- Spinifacies oregonensis*** Scott, 1963, Ent. News 108; holotype from described type locality. The two specimens on the type slide are an adult male and a juvenile of *Hypogastrura* (*Michellania*) *virga* Christiansen & Bellinger, 1980. The name *oregonensis* Scott is a junior secondary homonym of *Hypogastrura* (H.) *oregonensis* Yosii, 1960, but is senior to *virga*, and valid, if *Mitchellania* is regarded as a good genus distinct from *Hypogastrura*.
- Tullbergia neomexicana*** Scott, 1961, Ent. News 72: 64; holotype, from described type locality, with collection code 28C. The specimen is a juvenile *Onychiurus* cf. *folsomi* (Schäffer), and *neomexicana* appears to be a junior synonym of *folsomi*. Of eight "paratype" slides, not certainly from the same locality, four have locality code 2C; three of these have juvenile, undeterminable specimens of *Hypogastrura* s.l. (this is the basis for the placement of *neomexicana* in *H. (Schoettella)* by Christiansen & Bellinger, p. 478). The other four "paratype" slides have the locality code 4C; two have undeterminable specimens of *Onychiurus* s.str. No specimens could be found on three of the "paratype" slides.
- Xenylla neomexicana*** Scott, 1960, Ent. News 71: 60; holotype, without data, with collection code 327C. Specimen is a *Xenylla*, cf. *humicola*, not further determinable.
- Xenyllodes alpinus*** Scott, 1960, Ent. News 71: 184; paratype slide from described type locality, with collection code 1C; second "paratype" slide without data, with collection code 414C. The five specimens on the first slide and four on the second all appear to be *Xenylla pallescens* (Scott), sensu Gama, 1974, to which *alpinus* was sunk by Gama.



***Xenyllodes hoffi*** Scott, 1960, Ent. News 71: 185; two paratypes, from type locality, code 31C. One specimen, here selected as lectotype, is an adult female *Xenylla humicola* (O. Fabricius); *hoffi* is therefore a synonym of *humicola*. The second paratype is a *Hypogastrura*, cf. *copiosa* (Folsom).

***Xenyllodes pallescens*** Scott, 1960, Ent. News 71: 186; two paratypes, one from type locality, remounted and labelled "*Xenylla pallescens* Scott, 1960 s. Gama, 1974;" the second paratype slide has ten specimens, all apparently the same as on the first slide, plus a specimen of *Janetschekbrya* sp.

### Other Material

In addition to the types, the collection contains 420 slides with specimens (and a few others on which no specimen could be found). These slides, from their labels, include representatives of most of the species recorded by Scott in his papers in *Entomological News*, and a few others. However, this is only part of the material seen by Scott, since he gives more localities for many species than are represented by specimens. A few slides are in the Oregon State University collection. According to Scott (personal communication) the balance of his collection of Collembola should be in the Vector-Borne Disease Museum, U.S. Center for Disease Control, Atlanta, GA 30333. Since I have not seen this material, it is not possible to correct all of Scott's original records. But since this series of papers has provided part of the data base for two studies on biogeography (Blackith & Blackith, 1975; Franz, 1975), and provide the only published information on the Collembola of some localities, it seems important to call attention to the questionable nature of these records. Twenty-four of the specimens are certainly, and another 20 possibly, correctly determined; of the remainder, 109 are placed in the wrong genus and seven others in the wrong family.

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