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**NEW SYNONYMY IN *HYPOGASTRURA*  
(COLLEMBOLA: HYPOGASTRURIDAE)**

R. D. Waltz<sup>1</sup> and J. W. Hart<sup>2</sup>

In the course of faunistic studies of Indiana Collembola, seasonal occurrences of the two species *Hypogastrura packardi* (Folsom), 1902 and *H. notha* (MacNamara), 1922 were found to exhibit seasonal dimorphism and population dynamics similar to those patterns observed in cyclomorphic species previously reported in literature (Leinaas 1981a,b). One of us (Hart) investigated the seasonal dynamics of a single population of *H. packardi* in Wayne County, Indiana. This study revealed that the widely reported North American species, *H. packardi*, undergoes a radical population-wide morphological change in the late fall to "reappear" in a winter form taxonomically recognized as *H. notha*. Indiana populations of *H. packardi* are present typically from March through November. Populations of *H. notha* from the same localities occur from December through February. In the seven years for which Indiana data are available only subadult and juvenile specimens of *H. notha* are present in our collections. Reproductive adults of *H. packardi* occur primarily from March through May with a few records available from January, February, and June.

On the basis of the above biological data and study of slide-mounted specimens in the process of moulting from the *notha*-form to the *packardi*-form (specimens deposited in the Purdue University Entomological Research Collection, West Lafayette, IN), we designate *H. notha* a junior subjective synonym, NEW SYNONYMY, of *Hypogastrura packardi*.

The above synonymy directly affects the species groupings of *Hypogastrura* (s. str.) proposed by Yosii (1960, 1962) and Christiansen and Bellinger (1980). We regard the *nivicola* species group of Christiansen and Bellinger (1980) (= subgenus *Schoturus* MacGillivray, 1893:316; type species: *H. nivicola* (Fitch) by monotypy [cf/Yosii, 1962]) as synonymous with their *packardi* species group in part. The remainder of the proposed species groupings in *Hypogastrura* (s. str.) must be regarded as tentative until character state polarities can be determined for purposes of cladistic analyses.

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LITERATURE CITED

- Christiansen, K. and P. Bellinger. 1980. Part 1. Families Poduridae and Hypogastruridae. in *The Collembola of North America north of the Rio Grande: A taxonomic analysis*. Grinnell College, Grinnell, Iowa. iii + 1322 pp.
- Folsom, J. W. 1902. The identity of the snow-flea (*Achorutes nivicola* Fitch). *Psyche* 9:315-321.

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- Leinaas, H. P. 1981a. Cyclomorphosis in the furca of the winter active collembola *Hypogastrura socialis* (Uzel). Entomol. Scand. 12:35-38.
- . 1981b. Cyclomorphosis in *Hypogastrura lapponica* (Axelson, 1902) (= *H. frigida* [Axelson, 1905] syn. nov.) (Collembola:Poduridae), morphological adaptations and selection for winter dispersal. Z. f. zool. Systematik u. Evol. forsch. 19(1981):278-285.
- MacNamara, C. 1922. Two new species of *Achorutes* (Collembola). Canadian Entomol. 54:149-153.
- Yosii, R. 1960. Studies on the Collembola genus *Hypogastrura*. Amer. Midland Nat. 64:257-281.
- . 1962. Studies on the collembolan genus *Hypogastrura* II. Contr. Biol. Lab. Kyoto Univ. 13:1-25.