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On: 10 January 2015, At: 19:25

Publisher: Taylor & Francis

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Annals and Magazine of Natural History: Series 9

Publication details, including
instructions for authors and
subscription information:

[http://www.tandfonline.com/loi/
tnah15](http://www.tandfonline.com/loi/tnah15)

XLVII.—A note on some supposed new species of earthworms of the genus *Glyphidrilus*

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Published online: 02 Sep 2009.

To cite this article: J. Stephenson M.B. D.Sc. (1922) XLVII.—A note on some supposed new species of earthworms of the genus *Glyphidrilus*, *Annals and Magazine of Natural History: Series 9*, 9:52, 387-389, DOI: [10.1080/00222932208632688](https://doi.org/10.1080/00222932208632688)

To link to this article: <http://dx.doi.org/10.1080/00222932208632688>

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While this paper has been passing through the press, Mr. Mitchell has returned to England, and has re-examined the specimens of *Deuterophlebia*. He was able to recall some of the circumstances of their capture, and adds the following note on the exact locality where they were found :—

“These flies were found floating on the edge of Lake Gungabal, which there has a rocky shore. Close to the outlet-stream the lake is 11,700' above sea-level, and lies close under the glaciers of Hurramukh, which rises to nearly 17,000', say 5000' above the surface of the lake. The stream from the lake descends the Wangat Valley, and joins the Sind River, an affluent of the Jhelum.”

EXPLANATION OF PLATE VI.

Deuterophlebia mirabilis, gen. et sp. n., ♂.

- Fig. 1.* Head and bases of antennæ. × 30. (Balsam mount.)
Fig. 2. Head from beneath, showing mouth-opening. × 80.
Fig. 3. Base of flagellum of antennæ, showing enlargements on first three segments. × 80.
Fig. 4. Wing, mounted dry, × 9. Showing the regular fan-like arrangement of folds. (Costa slightly folded under towards base.)
Fig. 5. Wing, mounted in balsam, × 9. Showing traces of true venation. (The apparent distinctness of Sc and R_1 is partly due to this region not being quite flat.)
Fig. 6. Base of wing, × 30. Showing sclerites of attachment.
Fig. 7. Tip of tarsus, × 180. Showing claw and empodium.
Fig. 8. Tip of abdomen, × 80.

XLVII.—*A Note on some supposed new Species of Earthworms of the Genus Glyphidrilus.* By J. STEPHENSON, M.B., D.Sc., Lecturer in Zoology, University of Edinburgh.

IN a recent number of this Journal (ser. 9, vol. ix. no. 49, Jan. 1922, pp. 51–68), Mr. C. R. N. Rao, of the University of Mysore, describes four new species of *Glyphidrilus*. As on a former occasion (Rao, Ann. & Mag. Nat. Hist. ser. 9, vol. viii. no. 47, Nov. 1921; Stephenson, Ann. & Mag. Nat. Hist. ser. 9, vol. ix. no. 49, Jan. 1922), the descriptions appeared to me to be mistaken in many points; besides, one of the four species seemed to be identical with *Glyphidrilus annandalei*, Mich., and another probably so, while the two remaining species were obviously immature, and in all likelihood also belonged to *G. annandalei*. I therefore

again asked the authorities of the British Museum to allow me the privilege of examining the types which Prof. Rao had deposited there; these were sent to me, and I owe the authorities of the Museum my best thanks for so kindly acceding to my request.

Prof. Rao begins his paper by giving a list of Indian Glossoscolecidae; this list is erroneous—it includes *Criodrilus bathybates*, Steph., which is not an Indian species (it is recorded only from Japan), and omits *Glyphidrilus papillatus* (Rosa) (Lucknow and Burma). This omission vitiates the diagnostic table on p. 53.

The ovisacs of all four species are stated to be in the same segment as the ovaries; in *G. rarus* the egg-sac is said to be attached to the posterior surface of septum 12/13 along with the ovary. The ovisacs are normally one segment behind the ovaries, and a situation such as that described would be, practically speaking, impossible.

The testes and male funnels of *G. fluviatilis* are also made to occupy an impossible position, and the same is the case with *G. saffronensis*; moreover, in placing these organs where he does, the author contradicts his own generic diagnosis on p. 52. He states that the testes in *G. fluviatilis* are “mostly free,” whatever that may mean; testes are either enclosed in testis-sacs or they are not—in the latter case they are “free.” By “testicular sacs” Prof. Rao means seminal vesicles; there are no testicular sacs in the genus. By “canals” on pp. 54 and 62 the author presumably means grooves.

One of Prof. Rao's species is called in his paper *G. elegans*; the type is said to be in the British Museum. No worm so named was found amongst the specimens received from the Museum; there were, however, two specimens, one labelled “type,” of a worm called *G. splendens*, which is not described in the paper. These correspond pretty well to the description of *G. elegans*, and, as the localities also agree, Prof. Rao seems to have given two names to the same specimens.

I can be brief in the account of my own examination of the worms.

I found none of the abnormal conditions of the genital organs described by Prof. Rao.

Glyphidrilus fluviatilis and *G. elegans* or *splendens* are identical with *G. annandalei*, Mich.; I have myself described the dorsal shifting of the fourth and fifth lateral papillæ in a paper (“*Oligochaeta* from Manipur, the Laccadive Islands, Mysore, and other Parts of India”) which is appearing in the

'Records of the Indian Museum'; and the oval (instead of circular) shape of the papillæ in *G. elegans*, to which Prof. Rao attaches importance, is due merely to the great contraction of the specimen.

G. rarus and *G. saffronensis* are obviously immature; they lack clitellum and papillæ, and have only the faintest trace of the prominent "wings" characteristic of mature specimens of the genus. In *G. rarus* I found only doubtful indications of testes and funnels, no spermathecæ, the ovary small on one side and absent on the other, the ovisac absent on the one side, small on the other, and no female funnels. In *G. saffronensis* I could recognize no testes or funnels, no spermathecæ, no ovisacs or female funnels, though the ovaries were of some size. How Prof. Rao can state, as he does, that "all the numerous specimens in the collection are fully mature and the sexual glands well developed" (*G. rarus*), and that "all the numerous examples in the collection" are "sexually mature" (*G. saffronensis*), I am unable to conceive. From the extent of the just-beginning "wings," which corresponds with that of the other worms, I have no doubt that these specimens also are *G. annandalei*.

A very moderate degree of care, and an elementary knowledge of the group with which he is dealing, would have saved Prof. Rao from most of his mistakes. It is to be regretted that he has published, in this and his previous papers, such erroneous descriptions of material which he destined for the National Collection.

XLVIII.—On the Animals known as "Ground-Hogs" or "Cane-Rats" in Africa. By OLDFIELD THOMAS.

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THE Ground-Hogs or Cane-Rats of Africa present a very considerable uniformity throughout the continent, the common large species, *Thryonomys swinderianus*, extending from the Gambia to the Cape with remarkably little local variation. There would, however, seem to be sufficient differences between the extremes to justify the recognition of several subspecies.

But from these large animals the smaller forms, of which my *T. gregorianus* was the first to be described, differ from