

JONES, F. G. W., & PAWELSKA, K. (1963). The behaviour of populations of potato root-eelworm (*Heterodera rostochiensis* Woll.) towards some resistant tuberous and other *Solanum* species. *Ann. appl. Biol.* **51**, 277-294.

*Rev. Ecol. Biol. Sol.*, 1967, T. IV, 3, p. 517-521.

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## DOCUMENTS FAUNISTIQUES ET ÉCOLOGIQUES

### A new genus and species of *Symphyla*, *Neosymphyla ghanensis*, with comments on *Symphyla* segmentation

BY

C. A. EDWARDS

*Rothamsted Experimental Station, Harpenden, Herts.*

and

W. BELFIELD

*Zoology Department, University of Leeds, Yorks.*

The fourteen valid genera of *Symphyla* that have been described (Edwards, 1959) all have a basic segmentation and pattern of dorsal scuta to which the twelve pairs of legs are related. This pattern was first noted by Ribaut (1931). The genera *Scutigerella*, *Hanseniella*, *Neoscutigerella*, *Remysymphyla*, *Scolopendrelloides*, *Millotellina* and *Tasmaniella* all have 15 dorsal scuta (Fig. 1 A) of which the 2nd, 3rd, 6th, 9th, 12th, 14th and 15th are larger than the others. The relationship between the distribution of the legs and scuta is complex. The first four scuta and the 7th, 10th, 13th, 14th and 15th each correspond with a pair of legs. The other legs are associated with pairs of scuta, one of which is usually large and one small. In other genera some scuta become subdivided, so increasing the total number of scuta. For instance, the genera *Symphylella*, *Scolopendrella*, *Scolopendrellopsis* and *Symphylellina* have seventeen dorsal scuta (Fig. 1 B). Those scuta corresponding with legs XI and XII have become subdivided. Scuta of the other genera are yet further subdivided. *Symphylellopsis subnuda* (Hansen) has twenty-

one dorsal scuta (Fig. 1 C) of which those corresponding to legs V, VII, IX and XI are subdivided. Another species of this genus, *Symphylellopsis arvernorum* Rib., has the scutum corresponding with the third pair of legs divided into two, to give a total of 22 dorsal scuta. Species of genus *Geophilella* also have 22 dorsal scuta, and although these are reduced to small oval plaques, the subdivision and arrangement of these plaques agrees closely with the scutal pattern of *S. arvernorum*. Finally, the genus *Ribautiella* has 24 dorsal scuta formed by yet further subdivision on the scuta corresponding with the first and second pairs of legs. (Fig. 1 D).

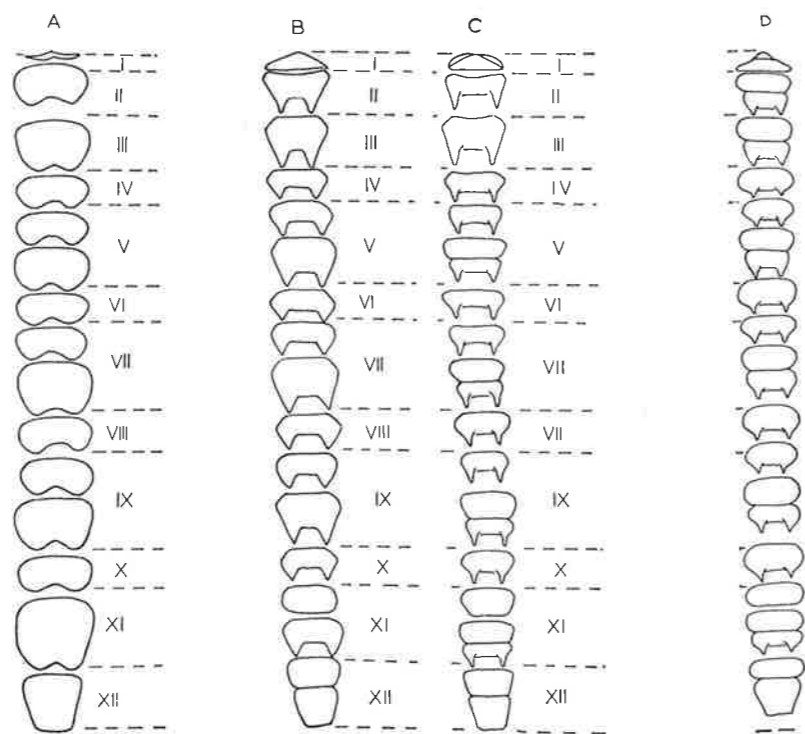


FIG. 1

All species of Symphyla have pointed or curved prolongations of the posterior margins of certain scuta except for *Geophilella*, which has only vestigial scuta.

The genera so far described all belong to the families *Scutigrellidae*, and *Scolopendrellidae*, and have thirteen such posterior projections. *Neosymphyla*, the new genus described here has fourteen such posterior projections, because one of the scuta corresponding with the eleventh pair of legs (XI), i.e. the seventeenth scutum (Fig. 2), now has a pair of posterior projections. This is an unexpected character because of the constant pat-

tern of subdivision and form of scuta running through all genera of Symphyla and makes *N. ghanensis* unique.

The diagrams of scutal pattern in Fig. 1 suggest that any unknown species of Symphyla are unlikely to have more than 24 dorsal scuta.

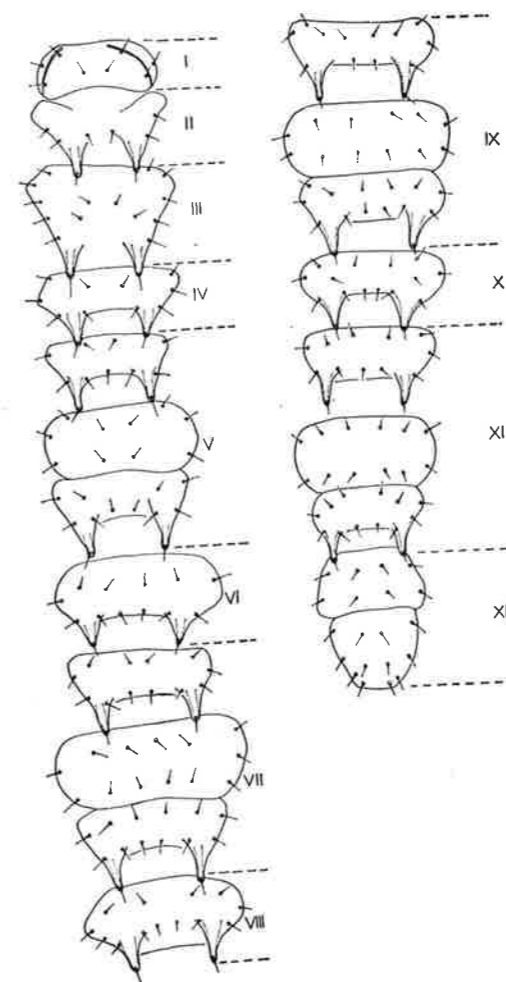


FIG. 2

## DESCRIPTION

Adult Length 1.0-1.6 mm. from front of head to end of cerci.

Head (Fig. 3 A) oval, longer than broad, with sparse short setae; notched at sides, post antennal organ small, with distinct opening to exterior. Mandibles with only two teeth, central rod broken in middle, less distinct in

anterior portion but with lateral branches distinguishable. Antennae of thirteen to sixteen segments usually fourteen—segmented; setae short, especially on distal segments; swollen setae or sense organs visible on tip of antennae (Fig. 3 B).

Scuta (Fig. 2) twenty-one, and of variable shape, including first which consists of oval plate with thickened diagonal bands. Those scuta corresponding with legs V, VII, IX and XI subdivided. Two to three setae on lateral margins of all scuta. Three to four setae on posterior margins of all scuta. Posterior triangular projections longer than broad with row of dots close to posterior edge present on scuta, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13, 15, 16, 17 and 19; distance between projections not much more than their length from base to tip.

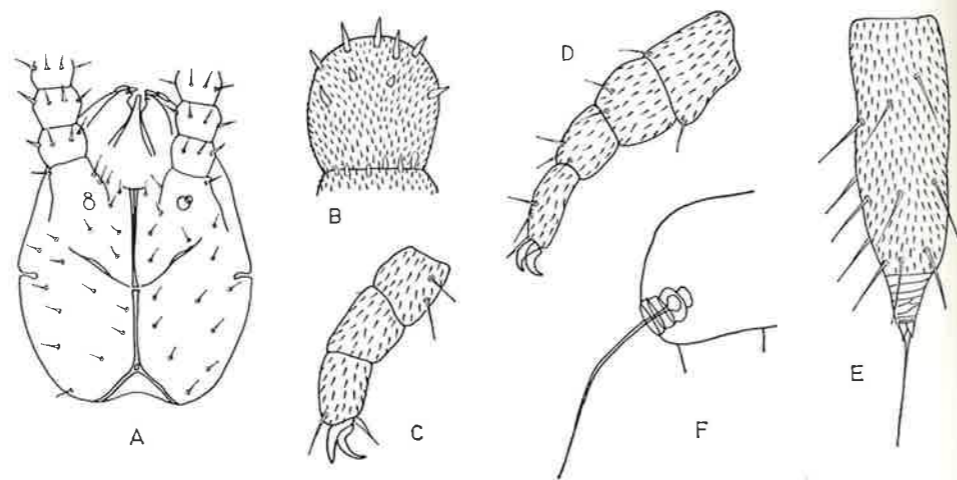


FIG 3

Legs (Fig. 3 C and D) twelve, short in length covered by numerous short setae and with a few long setae; most segments only slightly longer than broad; first pair three-segmented (Fig. 3 C) and about three-quarters length of second pair, the front seta about the same length as the claws; last pair of legs (Fig. 3 D) four-segmented, covered in short setae and with two or three long setae to each segment.

Coxal sacs poorly developed, seven present at base of legs 3-9.

Cerci (Figure 3 E) short about one-eighth as long as the body, about three times as long as wide with only a few long setae; with large conical terminal area, bearing six lateral striations with a ring of micro-setae around the base of the terminal setae, apical seta longer than terminal area.

Sense callicles regular in shape with a smooth margin to the pit, seta one-and-a-half times as long as the apical setae of cerci.

Type To be deposited with the British Museum (Natural History).

Distribution: Found in fallow soil at Nungua, near Accra, (Ghana) in large numbers.

Comparative notes:

The arrangement of the scuta corresponds most closely to that of *Symphyleopsis subnuda* Hansen (Edwards 1959) but it is easily separated by the posterior triangular projections on scutum seventeen.

Habits: This very small species seems truly edaphic and is usually most abundant at a depth of 6-12" below soil surface (BELFIELD 1956).

SUMMARY

This paper describes a new genus and a new species of Symphyla, *Neosymphyla ghanensis*.

RÉSUMÉ

Dans ce travail, les auteurs décrivent un nouveau genre et une nouvelle espèce de Symphyle, *Neosymphyla ghanensis*.

ZUSAMMENFASSUNG

In dieser Arbeit werden eine neue Gattung und eine neue Art von Symphyla, *Neosymphyla ghanensis*, beschrieben.

REFERENCES

- BELFIELD (W.), 1956. — The Arthropoda of the soil in a West African pasture. *J. Anim. Ecol.*, **25**: 275-287.  
 EDWARDS (C. A.), 1959. — A revision of the British Symphyla. *Proc. zool. Soc. Lond.*, **132** (3): 403-439.  
 EDWARDS (C. A.), 1959. — Keys to the genera of the Symphyla. *J. Linn. Soc. Lond.*, **44**, No. 296: 164-169.  
 RIBAUT (H.), 1931. — Observations sur l'organisation des Symphyles. *Bull. Soc. Hist. Nat. Toulouse*, **62** (4): 443-465.