
Additions to the Wild Fauna and Flora of the Royal Botanic Gardens, Kew: XI. Annelida

Author(s): Hilderic Friend

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longus. *Flores* in racemis 1-3 axillaribus conspicue bracteatis ad 5 cm. longis; rhachis angularis; bractee amplexicaules, rufescentes, ovato-acuminatae, 1-1.5 cm. longae; flores cyanei et punicei. *Perianthium* 4-5 cm. longum, puberulum, basi oblongum, inflatum, inde cylindricum, ore bilabiatum, labio superiore parvo, inferiore elongato ad 2-2.5 cm. longo. *Stamina* 6, sessilia, styli columnae adnata; antherarum loculi distincti. *Stylus* in columnam brevissimam productus, in discum 6-lobum, 6-apiculatum desinens. *Capsula* oblonga, obtusa, 4 cm. longa, 6-costata, costis junioribus alatis.

MALAY PENINSULA. Penang: in dense forest, *Curtis*, 330; *G. King*; *Kunstler*, 1453.

560. *Aristolochia minutiflora*, *Ridley MSS. ex Gamble* [Aristolochiaceae]; species *A. indicæ* et *A. Tagalæ* affinis, sed floribus minoribus et fructu et seminibus distincta.

Frutex scandens, gracilis; ramuli suberosi, sulcati. *Folia* membranacea, glabra, integra, ovata vel ovato-lanceolata, apice acuminata, basi profunde cordata, auriculis sursum dilatatis rotundis introrsum convergentibus, 5-15 cm. longa, 3-7 cm. lata, pedatim 5-7-costata, costarum pare lateralium interiore fere ad apicem extenso, nervis e costâ media 2-3 cum reticulatione obscuris; petiolus gracilis, 3-5 cm. longus. *Flores* in racemis paucifloris puberulis 1 cm. longis; bractee vaginantes ovato-acuminatae, 3 mm. longae. *Perianthium* 1.5 cm. longum, basi globosum, inde curvatum et labiatum, labio superiore bifido, inferiore producto torto lineari. *Stamina* 6 minutissima, styli columnae adnata. *Stylus* in columnam brevissimam productus, in discum 6-lobum et 6-apiculatum desinens. *Capsula* obovata, 2-5 cm. longa, 6-costata et prominenter transverse rugosa. *Semina* pyriformia, concava, 1 cm. longa, cum placenta cymbiformi crustaceâ dehiscentia; testa rugosa; albumen carnosum.

MALAY PENINSULA. Perak: in dense forest, *Ridley*, 8022, 10,259; *Kunstler*, 1964.

Var. *dolabrata*, *Gamble*; varietas distincta, perianthii labio superiore ad 3 mm. longo et lato, labio inferiore ad 1 cm. longo; in alabastro labia cum tubo dolabram simulantia.

MALAY PENINSULA. Perak: in the mountains up to 1000 m. alt., *Wray*, 2997; *King's collector*, 2969.

XIV.—ADDITIONS TO THE WILD FAUNA AND FLORA OF THE ROYAL BOTANIC GARDENS, KEW: XI.

ANNELIDA.

OLIGOCHAETA.

REV. HILDERIC FRIEND.

The species of annelids found in the Royal Botanic Gardens, Kew, fall into four groups. There are first the British earthworms known as Lumbricidae, of which some thirty species are indigenous in our islands. Then come the foreign worms, belonging chiefly to the Perichaetidae and Geoscolicidae. Next we may mention the smaller worms found in soil, leaf mould, and among decaying bulbs,

a group which has so far been but little worked, known as Euchytraeidae; and finally the water worms, among which much yet remains to be done.

No addition has been made to the Euchytraeids since the first list was issued, and only one species to the list of water worms. The chief work has been done among the larger species, both British and foreign; and, as the nomenclature of the former has been undergoing revision of recent years, I propose to give a complete list of the Lumbricidae found in the Gardens up to date, marking those already recorded with an asterisk, and supplying notes where points of special interest are involved.

So far as the foreign species are concerned I shall be content to add the names of any newly found species, with such notes as may be desirable; referring the reader to the former list for such as have already been recorded. Following the order adopted in that catalogue, we have to add the under-mentioned.

Limnodrilus sp. Coll. H. F., August 4th, 1909, in putrid soil, on the margin of the Lily pond near the North Gallery.

Perichaeta nipponica, *Beddard*. Monogr. Olig. 413. Coll. J. Lambourne.

**Trichochoeta hesperidum*, *Beddard*. Monogr. Olig. 647. This worm was first described from a specimen found at Kew. As the description was based on a specimen whose girdle had not been formed I am glad to be able to complete the description. This annelid contains 180 segments, and is $3\frac{1}{2}$ inches long in alcohol. When living it extended from 4 to 8 inches. The girdle occupies segments 14 to 21, and on three of the segments (18-20) is a white band which corresponds with the tubercula pubertatis in *Allolobophora*. The nephridiopores are large, especially on the girdle, and open in a line with the 3rd seta (Fig. 1). The neutral setae from the region of the girdle to about the 50th segment are paired. Propagating pits. Coll. J. Lambourne.

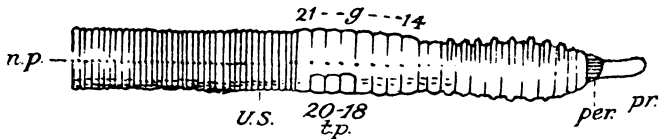


Fig. 1.

Fig. 1. *Trichochoeta hesperidum*, *Beddard*. $\times 2$, *g.* girdle (14-21); *per.* peristomium; *pr.* prostomium extended; *t.p.* (18-21), tubercula pubertatis; *n.p.* nephridiopores, lateral view; *v.s.* ventral setae, paired in anterior portion of body.

I have also received a set of very delicate worms, from the pits, collected by R. G. Simpson, which appear to be *Geoscolicoides*; but as they always arrive dead and sadly distorted, I have so far been unable to obtain a satisfactory diagnosis.

LUMBRICIDAE.

I turn now to the Lumbricidae. Among the additions are one or two of special interest, to which attention will be called in the

notes. A few British species have so far not been found, as, for example, *Lumbricus festivus*, Savigny, *Dendrobaena mammalis*, Savigny, and *Allurus tetraedrus*, Savigny.

**Lumbricus terrestris*, Linn. (= *L. herculeus*, Dugès of former list.)

**Lumbricus rubellus*, Hoffmeister.

Lumbricus castaneus, Savigny. The smallest species of *Lumbricus* found in Britain.

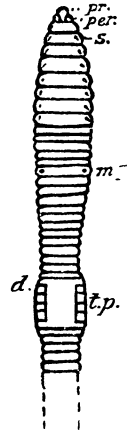
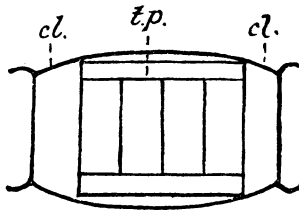
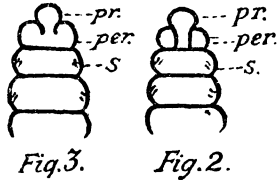


Fig. 2. Head of *Lumbricus*.

Fig. 3. Head of *Allolobophora*.

Fig. 4. Girdle of *Lumbricus*.

Fig. 5. Diagram of *Lumbricus*.

pr. prostomium on head; *per.* peristomium or first body ring without setae; *m.p.* male pores on 15th segment; *cl.* clitellum or girdle bearing tubercula pubertatis (*t.p.*).

**Allolobophora longa*, Ude (= *A. terrestris*, Bedd., of former list). Constantly confused with *Lumbricus terrestris*, on account of similarity in size and distribution. They may at once be distinguished by observing the position of the girdle and tubercula. See illustration (Diagram Cells).

Allolobophora trapezoides, Dugès.

Allolobophora turgida, Eisen.

These two worms are very closely allied, and are frequently referred to *A. caliginosa*. The specimens from Kew, however, are very distinct. In addition to the native forms we have them in Wardian cases from the Chatham Islands, September, 1909. Coll. C. P. Raffill and H. Green.

**Aporrectodea chlorotica*, Savigny (= *Allolobophora chlorotica*, Vejdovsky, of former list). This worm is distinguished by the presence of three pairs of pores instead of a band on the girdle, forming the tubercula pubertatis and three pairs of spermathecae.

**Bimastus constrictus*, Rosa (= *A. constricta*, Rosa, of former list).

Dendrobaena arborea, Eisen. First recorded for Kew, September 3rd, 1909. Herbaceous ground. Coll. M. Free.

Dendrobaena subrubicunda, Eisen. Received with the last. Coll. M. Free.

Dendrobaena octoedra, Savigny. First recorded for Kew, September 16th, 1909. Herbaceous ground. Coll. M. Free.

**Eisenia foetida*, Savigny (= *Allolobophora foetida*, Eisen, of former list).

Eisenia rosea, Savigny. Though a native of Britain it has also been received from the Chatham Islands, September 2nd, 1909. Propagating pits. Coll. H. Green.

Eisenia veneta, Rosa. Though we have several well marked varieties of this interesting annelid, the type was not known in England till I received it from Kew, on September 3rd, 1909. Herbaceous ground. Coll. M. Free. (See Gardeners' Chronicle, October 9, 1909, p. 243, fig. 108.)

Octolasion studiosum, Rosa (known as *Allolobophora studiosa*, and *A. profuga*). One specimen received from Kew in February, 1910, which differed greatly from the type in colour when living, but not distinguishable from it in alcohol. Propagating pits. Coll. J. Lambourne.

Dendrobaena submontana, V'ejdovsky. This was first received in September, 1909, at which time it was not perfectly adult. I published a description in the Gardeners' Chronicle of January 29th, 1910; but shortly afterwards was favoured with another consignment which contained an adult specimen. This shewed the tubercula pubertatis clearly on segments 28 to 30; a point of great interest because it definitely proves the species to be quite distinct from *Eisenia veneta*, Rosa, which it greatly resembles outwardly. In *E. veneta* the tubercula are on 30 and 31, and there are internal differences as well. See illustration in Gardeners' Chronicle, January 29th, 1910, p. 74, fig. 42. Propagating pits. Coll. H. E. Downer.

An addition of at least a dozen new species in less than a year is not a mean record, and says much for the enthusiasm and careful observation of the young gardeners, to whose services I am so greatly indebted.

COLEOPTERA.

W. E. SHARP.

(*British species.*)

GEODEPHAGA.

Harpalus aeneus, F. Herbaceous ground. Coll. M. Free. A very common ground beetle.

Carabus violaceus, L. Fern houses. Coll. E. W. Morse. Generally common in the London district.

Pterostichus madidus, L. Propagating pits. Coll. R. Joyce. Very abundant and widely distributed.

HYDRADEPHAGA.

Hydroporus planus, F. Propagating pits. Coll. H. Ruck. One of the smaller water beetles, widely distributed in Britain.

Dytiscus circumflexus, *F.* Tank in Nursery. Coll. W. Dallimore. One of the larger species, occasional in standing water throughout the London district but not common and restricted in range to the south of England.

A larva of another and commoner species of the genus, *D. marginalis*, *L.*, has been taken in one of the outside Lily tanks. Coll. C. P. Raffill.

The presence of both these species in such circumscribed waters is explained by the fact that the perfect insects fly readily and frequently, and often alight and deposit ova in quite superficial pools.

SERRICORNIA.

Ptilinus pectinicornis, *L.* Arboretum. Coll. W. Dallimore. A not uncommon species where larvae bore into palings, gate posts, &c., and very frequently into the dead timber of standing beech.

Lassioderma serricorne, *F.* In small white beans in propagating pits. Coll. H. Green. Like several species which have been taken here, this is a cosmopolitan insect whose larvae, feeding as they do on various seeds and roots (ginger, liquorice, &c.), are carried about the world by commerce. There is no reason to doubt that the species was thus imported with seeds of some kind to Kew, and although normally a 'British beetle' has no real claim to a place in the British fauna.

CLAVICORNIA.

Necrophorus vespillo, *L.* Bulb pit. Coll. R. Joyce. One of the 'burying beetles' which deposit their ova in dead animals, and whose larvae feed on carrion; generally distributed in Britain.

HETEROMERA.

Helops striatus, *Fourc.* Propagating pits. Coll. H. E. Downer. A very common British species, often found under bark, especially of dead fir trees and usually in dry and sandy localities.

RHYNCHOPHORA.

Scolytus destructor, *Ol.* Arboretum. Coll. W. Dallimore. One of the wood-boring weevils, common and very injurious to elm.

(*Exotic species.*)

Exechesops jordani, *W. E. Sharp.* Coll. H. Green. This very distinct and interesting species was discovered among seeds of a Lily imported from Tanganyika, Africa. Previous to its description the genus *Exechesops* contained but five species only, one of which (*E. monstrosus*, *Pasc.*) was a native of Africa. The present species is much larger than any of the others, and its exceedingly prominent eyes give the insect a remarkable aspect.

The nearest British ally to *Exechesops* is perhaps *Macrocephalus albinus*, *L.* A very rare species found occasionally in decaying wood.

Ptilodactyla sp.? Coll. H. Green. This *Ptilodactyla* appears to have become provisionally established in our orchid houses, specimens having been taken at intervals during the last two or three years. *Ptilodactyla* is a Central and South American genus and also occurs in some of the West Indian Islands. Our species bears a close resemblance to *P. probanda*, Kirsch., but is probably undescribed as there are no named examples of it either in the collections of the British Museum, or those of the Zoological Museum of Dresden, which latter contains most of the species of *Ptilodactyla* known to science.

No doubt the Kew species was originally imported with some orchid from tropical America.

XV.—MISCELLANEOUS NOTES.

Mr. ERNEST SAMUEL DODD and Mr. ERNEST EDWARD MAWER, members of the gardening staff of the Royal Botanic Gardens, have been appointed by the Secretary of State for India in Council, on the recommendation of Kew, probationer gardeners for service in India.

DR. PETER MACOWAN, F.L.S.—We are indebted to Dr. S. Schönland, Director of the Albany Museum, Grahamstown, Cape Colony, for the following obituary notice of the late Dr. MacOwan, F.L.S., who died at Uitenhage, Cape Colony, on December 1st, 1909. Dr. MacOwan was a frequent and highly valued correspondent of Kew, and the South African collections in the Herbarium have been very considerably augmented through his instrumentality. The genus *Macowania* was named in his honour by Prof. D. Oliver in 1870.

The son of a well-known Methodist minister, MacOwan was brought up in a very hard school which would have crushed any less elastic spirit. This hard school was, unfortunately, continued more or less through his long life, in which he never found work with congenial surroundings or worthy of his exceptionally high abilities. It was his sad fate to have to devote the best years of his life to mere drudgery, small wonder then that he at last made drudgery the main business of his life, and found relief occasionally in satirical writings which sparkled with knowledge and wit. However, only few of these were published under his name.

He was born at Hull, November 14th, 1830, educated at Kingswood College and Islington Grammar School. At the age of 16 he became a tutor at Bath, thence passed to Colchester in 1849, and became housemaster at the great Wesleyan School at Woodhouse Grove, near Leeds, in 1853. In 1857 he accompanied Dr. Samuel Sharpe, the Headmaster, to Huddersfield College, taking duty as tutor in Chemistry, and graduating in London University the same year.

Having to earn his own living at such an early age, I cannot understand how he amassed the encyclopaedic knowledge which he