

XVI. *Report on the Vermes (Oligochæta) collected by the British Ornithologists' Union Expedition and the Wollaston Expedition in Dutch New Guinea.*
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(Text-figure 41.)

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THE Oligochæta collected during the Expedition led by Mr. A. F. R. Wollaston comprise specimens of three species belonging to the oriental genus *Pheretima*; two of these three species are new. By the kindness by Prof. F. J. Bell of the British Museum the small collection has been sent to me.

PHERETIMA MAXIMA, sp. n. (Text-fig. 41, A.)

External Characters.—This new species is to be included among the giant-forms of the order Oligochæta. The specimen examined attains a length of 450 mm., with a diameter of about 20 mm., and consists of 108 segments. Prostomium pro-epilobous, $\frac{1}{2}$; the segments XI. to XIII. are slightly triannulated.

Colour grey at the preclitellian region, very dark grey on the clitellum, yellowish grey at the ventral side of the preclitellian tract, violet-grey with more or less wide yellowish-grey setigerous bands at the dorsal side of the same tract.

Setæ in continuous rings; about 200 setæ on segments VI. to X., and about 180 on segments XVII. to XXVI.

First dorsal pore in the inter-segmental furrow XIII/XIV.

The clitellum embraces entirely segments XIV. to XVI., and has no setæ.

Male pores close to the middle ventral line; each pore is surrounded by a grey circular area. Between the male pores there are five setæ. Copulatory papillæ are absent.

Female pores on segment XIV. on a porophore which is surrounded by a circular furrow, from which some short grooves are given off.

Three pairs of spermathecal pores, invisible from the exterior. These pores lie in the inter-segmental furrows V./VI.—VII./VIII. in line with the male pores.

* Communicated by F. JEFFREY BELL, F.Z.S.

Internal Anatomy.—Septa IV./V.—VII./VIII. and IX./X. are greatly thickened; septum VIII./IX. is absent. Septa X./XI.—XII./XIII. are moderately stout. Gizzard very strong in VIII. and IX. Sacculated intestine beginning in segment XVI. provided with a pair of simple and long conical cæca, which extend four or five segments forwards from XXVI. Hearts paired in X./XIII.

A single pair of testes is present in segment XI., not enclosed in seminal capsules. A single pair of globous sperm-sacs in segment XII.

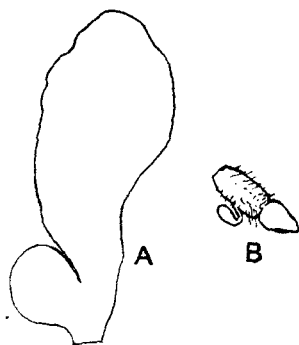
A pair of ovaries in XIII.

Spermiducal glands confined to segment XVIII. Their glandular portion is moriform or slightly lobulated, the duct moderately thin and S-shaped. Muscular bursa copulatrix absent.

Three pairs of spermathecæ in segments VI.—VIII. Each spermatheca club-shaped, with a short duct, which is provided with a globular diverticulum near the external pore (text-fig. 41, A).

Camp 3, Uta kwa River, 2500 ft., Dec. 1912. A single specimen. (*Type of the species.*)

Text-figure 41.



Spermathecæ of: A. *Pheretima maxima*; B. *Pheretima (Parapheretima) utakwana*.

This new species is particularly distinguished by the dimensions given above and by the metandric condition. These two characters are found in another giant species of the same genus, *Ph. colossus* Cogn.*, which has also been obtained in New Guinea; but this last species is provided with fewer setæ on the single segments and has five pairs of spermathecæ, instead of three.

PHERETIMA (PARAPHERETIMA) †) UTAKWANA, sp. n. (Text-fig. 41, B.)

External Characters.—Length 63 mm., diameter 3.5 mm. Segments 111.

Prostomium pro-pilobous. Colour pale brownish.

* 'Nova Guinea,' ix. p. 296 (Leide, Brill, 1912).

† For this subgenus, cf. 'Nova Guinea,' v. p. 561 (1912).

Setæ in continuous rings: 45 setæ on segment IV., 50-60 on segments X. to XXVI.

First dorsal pore in inter-segmental furrow XIII./XIV.

Clitellum embracing entirely segments XIV. to XVI.; it has no setæ.

Male pores near the middle ventral line; the interval between these pores corresponds to $\frac{1}{7}$ of the segmental circumference, and bears no setæ. The bursæ copulatricæ are partially extruded as a wrinkled swollen margin around each male pore.

Female pore is a short transverse fissure on segment XIV.

Two pairs of spermathecal pores in the inter-segmental furrows VI./VII. and VII./VIII., in line with the male pores. Between these lines are present seven setæ on segment VIII. The lips of the spermathecal pores are slightly swollen.

Internal Anatomy.—Dissepiments IV./V. to VII./VIII. and X./XI. to XII./XIII. moderately thickened; the septa VIII./IX. and IX./X. are absent.

A strong gizzard is present in segments VIII. and IX. The sacculated intestine begins in segment XVI.; its lateral cæca are simple, and extend from segment XXVI. to XXIII.

Hearts paired in segments X.—XIII.

The seminal capsules are paired in segments X. and XI.; the two capsules of the same side communicate with each other through septum X./XI. The two capsules of the same pair do not seem to be in communication; if a communication is present, it may be limited to a narrow intraseptal lacuna.

The seminal sacs are paired in segments XI. and XII., the two pairs being of equal size. Each sac is provided with an apical finger-shaped appendix. A pair of rudimentary sacs is present in segment XIII.

The ovaries lie in segment XIII. and a pair of egg-sacs in segment XIV.

The spermiducal glands are very like those of *Pheretima (Parapheretima) hellwigiana* Cogn.*. The glandular portion is slightly lobulated and occupies the two segments XVII. and XVIII. The muscular duct is moderately thin and strongly bent; it opens in a little bursa copulatrix, which is partially extruded. In the bursa there also opens a tubular and strong-walled gland, which extends backwards from segment XVIII. to about segment XXIII. The surface of this gland is provided with lobules, which very probably are due to the cysts of Gregarines.

There are two pairs of spermathecæ in segments VII. and VIII. The muscular duct and the pear-shaped main pouch are of equal thickness, but the pouch is shorter than the duct. The duct is covered with villous glandular appendages, and is provided with a short stalked diverticulum in the middle line; the length of the diverticulum is less than that of the duct (text-fig. 41, B).

Camp 12, Uta'kwa Valley, 10,000 ft. (C. Boden Kloss coll.), Jan. 1913. A single specimen. (*Type of the species.*)

* 'Nova Guinea,' ix. pl. ix. fig. 29.

This new species is quite distinct from the other of the same subgenus. The spermiducal apparatus, as mentioned above, is like that of *Ph. (Paraph.) hellwigiana* Cogn., but the latter species is provided with unpaired spermathecæ on the middle ventral line, whereas in *Ph. (Paraph.) utakwana* the same organs are paired. *Ph. (Paraph.) hellwigiana* Cogn. is also a New Guinea species.

PHERETIMA (PARAPHERETIMA) BEAUFORTII, var. APOTREMA.

Pheretima (Parapheretima) beaufortii, var. *apotrema* Cognetti, Nova Guinea, ix. p. 297 (1912).

A single specimen, which agrees with my description in the majority of the characters referred to. The only differences are: greater size (length 215 mm., instead of 110 mm.; thickness 7 mm., instead of 3 mm.) and a smaller number of setæ between the male pores (10 setæ instead of 14). The type-specimen of this variety was collected in the neighbourhood of Etna Bay in southern Dutch New Guinea.

Camp 12, Utakwa Valley, 10,000 ft., Feb. 1913. A single specimen.