

ON A SMALL COLLECTION OF EARTHWORMS AND LEECHES (ANNELIDA) FROM THE SILENT VALLEY, KERALA, INDIA

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(With 9 Text-figures)

INTRODUCTION

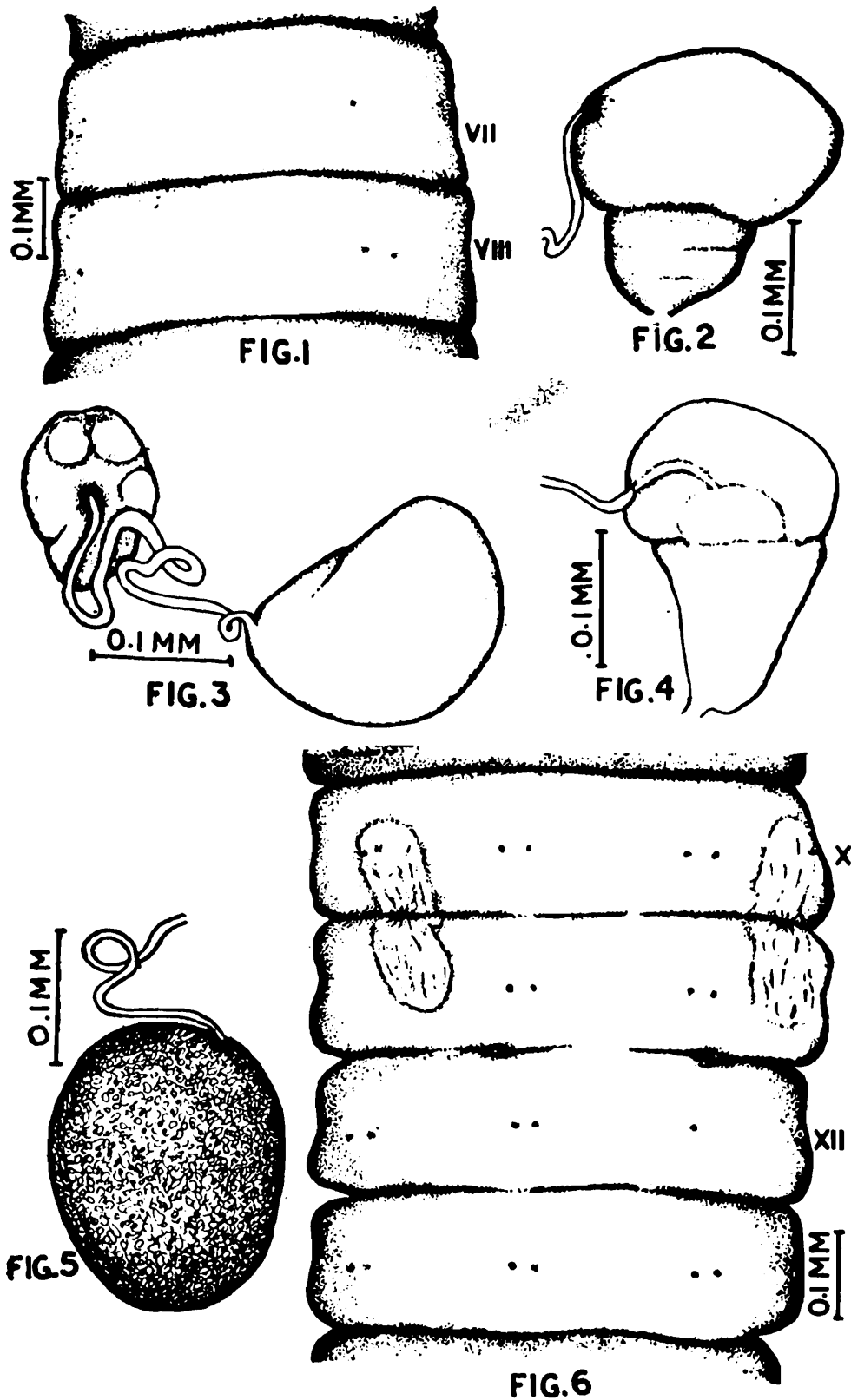
Earthworms and leeches are known from some areas of Kerala, South India through the works of Stephenson(1923) and Aiyer (1929), and Harding and Moore (1927) respectively. This article deals with the systematics of these groups collected by Drs. R.S. Pillai and K. R. Rao of Zoological Survey of India, Madras during the expeditions in 1980 to assess the faunal wealth of hitherto unexplored Silent Valley in Kerala. Included among this material are *Drawida ghatensis* Michaelsen and *D. grandis* (Bourne), the earthworm species, in which confirmation of some characters and information about others has been needed.

SYSTEMATIC ACCOUNT Class OLIGOCHAETAE Order MONILIGASTRIDA Family MONILIGASTRIDAE *Drawida ghatensis* Michaelsen (Figs. 1-3, 5-6)

1910. *Drawidag hatensis* Michaelsen, *Abh. Geb. Naturw., Hamburg*, 19 [5] : 52 ; Michaelsen, 1913, *Jb. hamb. Wiss. Anst.*, 30 : 77 ; Stephenson, 1915, *Mem. IndianMus.*, 6 : 49 Stephenson, 1923, *Fauna Br. India, Oligochaeta* : 138 ; Aiyer, 1929, *Rec. Indian Mus.*, 31 : 48.

Description. External characters : Length 177 mm, diameter 5 mm, 182 segments. Prostomium prolobic. Dorsal pores absent. Clitellum $x-xiii$. Setae lumbricine, $aa=7ab=1$. $1bc=7-10$. $5cd=0.25-0.30$ dd on ix , $aa=7.3-7.7ab=0.82-0.98bc=7.7-11cd=0.25-0.26dd$ on xv , $aa=9-11ab=0.88-0.93bc=9-14.7cd=0.29-0.30dd$ at middle of body.

Male pores paired, large transverse slits in 10/11, at *bc*, slightly median to *c* (Fig. 6). Female pores paired, minute, in



Figs. 1-3, 5-6. *Drawida ghatensis* Michaelsen, 1, spermathecal pore area ; 2, lateral view of prostatic capsule ; 3, spermatheca ; 5, dorsal view of prostate ; 6, male genital area. Fig. 4. *Drawida grandis* (Bourne), lateral view of prostatic capsule.

11/12, at *b*. Spermathecal pores paired, large transverse slits in 7/8, at *c* (Fig. 1). Nephridiopores minute, slightly dorsal to *d* lines on *ii-viii*, at *d* lines on *ix* and posterior segments. Paired tumescences on *x* and *xi* slightly anterior and posterior to male pores. Genital markings absent.

Internal characters : Septa 5/6-8/9 muscular. Gizzards 5 in *xv-xix*, intestine begins in *xxii*, typhlosole absent. Paired commissures from extra-oesophageal vessels to the dorsal vessel on posterior face of septum 8/9, subneural vessel extending anterior to *ii*.

Testis sacs paired, in *xii-xvi*, each connected to septum 9/10 through a narrow neck. Vas deferens coiled in a mass of hairpin loops, when stretched about 110 mm long, opening directly at the dorso-anterior face of prostotectate. Prostates paired, glandular (Fig. 5) shortly stalked, ovoidal, prostatic capsule (Fig. 2) oval, erect. Ovarian chamber complete, ovisacs paired extending posterior to *xvi*. Spermathecae (Fig. 3) paired in *viii*, adiverticulate ampulla pear-shaped, duct sinuous, 7.2 mm long, pierces through septum 7/8 to enter on the dorsal surface at about centre of atrium in *vii*, atrium oval, sessile, slightly projecting into *viii*, atrial cavity with 6 longitudinal ridges.

Distribution, INDIA, Kerala : Tenmalai, Maddathoray, Kullattupuzha, Kottayam, Ponnudi, Bonaccord, Kavalai, Mukkuni Reserve Forest, Thiruvella, Silent Valley (present record).

Specimens examined. Coll. R.S. Pillai, Silent Valley, Kerala : 1 acitellate, road to Valiaparathodu, 23. iv. 1980 ; 1 clitellate, 5 km down stream from dam site on left bank, 24. iv. 1980.

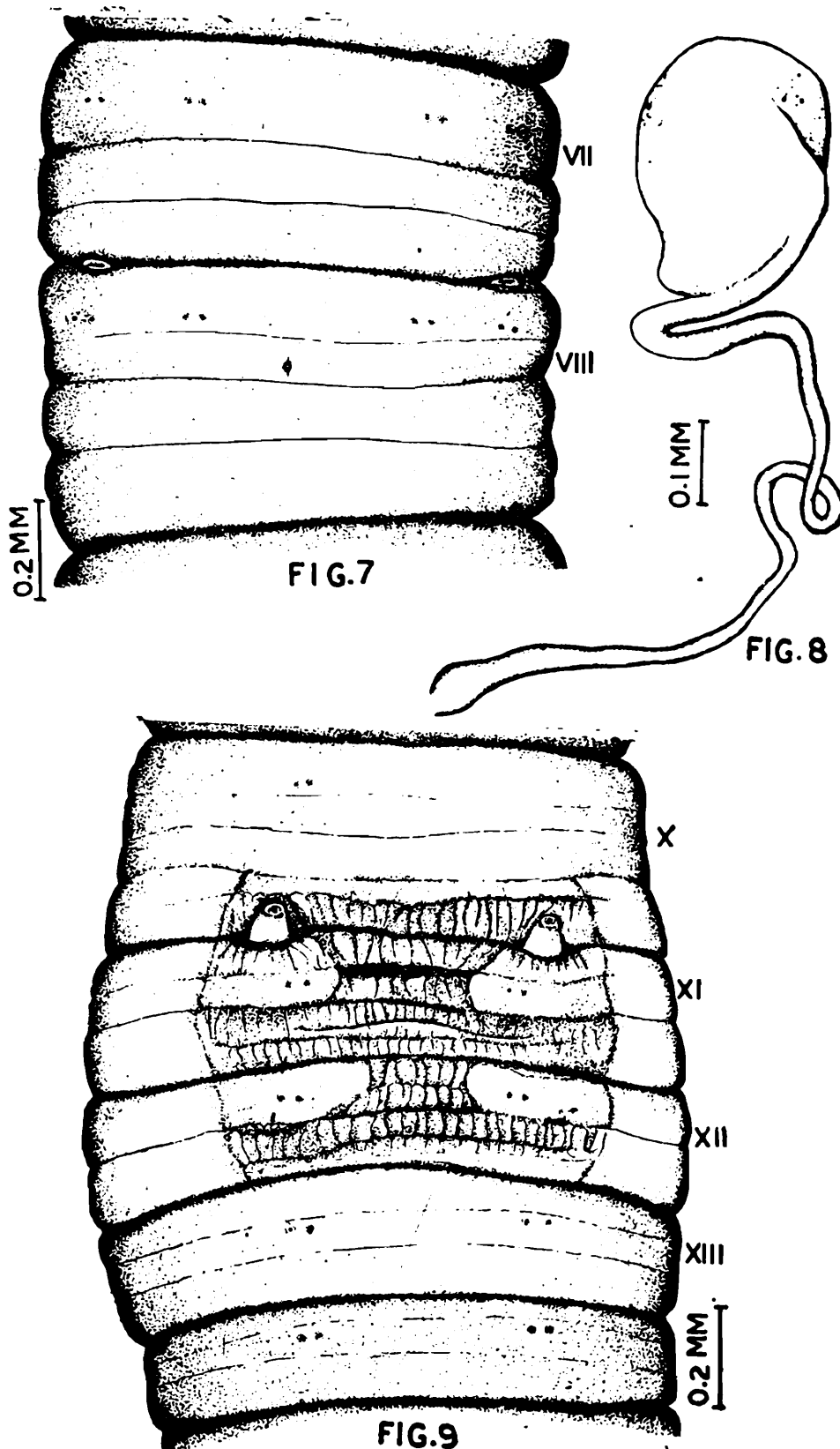
Drawida grandis (Bourne)

(Figs. 4, 7-9)

1886. *Moniligaster grandis* Bourne, *Proc. zool. Soc. Lond.*, 1886 : 671 ; Bourne, 1894, *Q Jl microsc. Sci.*, 36 : 307 ; Beddard, 1895, *A monograph of the order Oligochaeta* : 198.
1900. *Drawida grandis*, Michaelsen, *Tierreich*, 10 : 117 ; Michaelsen, 1910, *Abh. Geb. Naturw., Hamburg*, 19 [5] : 48 ; Stephenson, 1923, *Fauna Br. India, Oligochaeta* : 139 ; Gates, 1943, *Ohio J. Sci.*, 43 : 88.

Description. External characters : Length 234-396 mm, diameter 9-11.5 mm, 337-478 segments. Prostomium prolobic. Dorsal pores

absent. Clitellum $x-xiii$. lacking ventrally on $1/3x-xii$. Setae lumbricine, $aa=8.3-10.2ab=1-1.8bc=8.3-10.2cd=0.25-0.29dd$ on ix, $aa=11-15ab=0.7-1.1bc=11-15cd=0.26-0.31dd$ on xv, $aa=15.6-19ab=0.9bc=15.6-19cd=0.25-0.32dd$ at middle of body.



Figs. 7-9, *Drawida grandis* (Bourne), 7, spermathecal pore area ; 8, spermatheca ; 9, male genital area.

Male pores paired, minute, at the centre of distal ends of conical porophores eversible through large, transverse, secondary male pores in 10/11, slightly lateral to *b* (Fig. 9). Female pores paired, small transverse slits, in 11/12, at *b*. Spermathecal pores paired, transverse slits, at the centre of oval porophores in 7/8, at *c* (Fig. 7). Nephridiopores minute, presetal, slightly dorsal to *d* lines on *iii-viii*, at or close to *d* lines on *ix* and posteriad segments (not recognized on *x*). Paired, slight tumescences surrounding setae *ab* on *xi* and *xii*. Genital markings absent.

Internal characters : Septa 5/6-8/9 muscular, 9/10 delicate and displaced posteriorly. Gizzards 6 in *xvi-xxi*, intestine begins in *xxxi* (± 1), typhlosole absent. Paired commissures from extraoesophageal vessels to the dorsal vessel within septum 8/9, subneural vessel not recognized anterior to *x*.

Testis sacs paired, extending equally into *ix* and *x*. Vas deferens coiled in the form of a small mass of hairpin loops, when stretched about 170 mm long, opening directly at the antero-median face of prostate. Prostates (Fig. 4) paired, muscular, sessile, spheroidal, diameter 2.5 mm, prostatic capsule sessile, spheroidal, embedded in a glandular mass beneath the outer muscular layer of the prostates. Ovarian chamber horseshoe-shaped, ovisacs tubular, extending posterior to *xv*. Spermathecae paired, duct 19 mm long, ectal half within septum 7/8, slightly enlarged ectally beneath longitudinal muscle layer of the body wall.

Distribution. INDIA, Tamil Nadu : Widely spread on the Nilgiri Hills; Kerala : Silent Valley (present record).

Specimens examined. Coll. K.R. Rao, Silent Valley, Kerala : 1 clitellate, along Valiaparathodu and Kunti rivers, alt. 940 m, 22.i.1980. 1 clitellate, Mukkali Base Camp, alt. 1040 m, 27.i.1980.

Remarks. Stephenson (1923) gave altitudinal range for this species at 5000-8000 ft. (1524-2438 m). The present record at an altitude of 940-1040 m extends its range to lower elevations.

Order HAPLOTAXIDA

Suborder LUMBRICINA

Family MEGASCOLECIDAE

Megascolex sp.

Specimens examined. Coll. R.S. Pillai, Silent Valley, Kerala :

5 km from dam site down river Kunti on left bank, 24.iv. 1980.

Remarks. According to Stephenson's (1923) key of the Indian species of *Megascolex*, specimens from the Silent Valley come near to *Megascolex ratus* Cognetti. The specific identity is not possible due to paucity of the material. Moreover, *Megascolex* Templeton, 1895 with species in Sri Lanka, India, Australia, New Caledonia, New Zealand, Norfolk Island and Annam is a polyphyletic congeneries and requires extensive revision.

Class HIRUDINEA

Order ARHYNCHOBDELLAE

Family HAEMADIPSIDAE

Haemadipsa zeylanica cochini Moore

1927. *Haemadipsa zeylanica cochini* Moore, *Fauna Br. India, Hirudinea* : 266 ; Soos, 1967, *Acta zool. Hung.*, 13 (3-4) : 426 ; Chandra, *Rec. zool. Surv. India*, 80 : 286.

Specimens examined. Coll. R.S. Pillai, Silent Valley, Kerala : 1 ex, Dam site, 21.iv. 1980; 12 ex, road to Valiyaparathodu, 23.iv. 1980; 3 ex, Valiyaparathodu, 25.iv. 1980; 10 ex, halfway to Valiyaparathodu, 2.v. 1980.

ACKNOWLEDGEMENTS

The authors are grateful to the Director, Zoological Survey of India, Calcutta and the Officer-in-Charge, High Altitude Zoology Field Station, Z.S.I., Solan for providing necessary facilities. Thanks are also due to Shri Anil Gupta, Artist, Z.S.I., Solan for the help in preparing the illustrations.

SUMMARY

This paper deals with a small collection of earthworms and leeches from the Silent Valley, Kerala, India. Earthworm species, *Drawida ghatensis* Michaelsen and *D. grandis* (Bourne) are described in detail.

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