

## **Aquatic Oligochaeta in some tributaries of the Río de La Plata, Buenos Aires, Argentina**

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### **Abstract**

The Oligochaeta of some streams flowing into the Río de La Plata, Buenos Aires, Argentina, were investigated. Twenty nine taxa (twenty four naidids, five tubificids) were identified. Most species are cosmopolitan, but *Dero evelinae*, *Pristina leidy*, *Slavina isochaeta* and *Bothrioneurum* sp. are neotropical. *Bratislavia unidentata*, *Haemonais waldvogeli* and *Nais pardalis* are reported for the first time in Argentina. Variants occur in the shape of the distal end of the penial sheaths of *Limnodrilus hoffmeisteri*. The dominant Naidid genera are *Dero* and *Pristina*. In the polluted El Gato stream only *L. hoffmeisteri* and *L. claparedeianus* were found.

### **Introduction**

The freshwater Oligochaeta of Argentina were studied by Cernovitov, 1937; Gavrilov, 1970, 1977, 1981; Di Persia, 1973, 1974, 1975, 1976, 1977, 1978, 1980, 1981; and recently Gluzman de Pascas, 1984; Pujals, 1984 and Varela *et al.*, 1983. These contributions deal with the North-East and other isolated geographic areas of the country and there is no knowledge on the rest of Argentina. Yet, Buenos Aires Province has a rich net of rivers and a number of streams which are tributaries of the Río de La Plata. I here present the first results on the oligochaetes of Buenos Aires Province.

### **Study area**

Eleven running waters were studied. Ten are situated near the coast of the Río de La Plata, but one, El Azul stream, is located in the interior of the Province. They are shallow, but seasonally increase in volume after the rains. El Gato stream is heavily polluted by domestic sewage, cellulose waste from a paper industry and oil subproducts from large

steel works. In Rodriguez stream, a cold-storage house causes pollution (Fernández *et al.*, 1977).

### **Methods**

The littoral sediments were sampled bimonthly from November 1983 to June 1985 (nine samples per locality, at two different stations). In the laboratory, living specimens were sorted at 10X magnification and fixed in 5% formalin. Whole mounts were identified following Brinkhurst & Jamieson, 1971 and Harman, 1974, 1978.

### **Results**

#### *Systematic comments*

Twenty nine species of oligochaetes were identified (twenty four Naidids and five Tubificids). Representatives of the Aeolosomatidae, Enchytraeidae, Lumbriculidae and Opistocystidae were not identified to species. Table 1 gives a list of taxa and their distribution. The number of Naidi-

Table 1. List of taxa identified in eleven tributaries of the Río de La Plata. The number of sampling localities is given between brackets. An asterisk indicates new records for Argentina.

Taxon	
NAIDIDAE	
<i>Bratislavia unidentata</i> <sup>+</sup> Harman	(6-8-9)
<i>Dero digitata</i> Müller	(6)
<i>D. evelinae</i> Marcus	(8)
<i>D. nivea</i> Aiyer	(5)
<i>D. plumosa</i> Naidu	(5-6)
<i>Dero</i> sp. I	(6)
<i>Dero</i> sp. II	(10)
<i>Dero</i> sp. III	(8)
<i>D. (Aulophorus) furcatus</i> Müller	(3-6-8)
<i>D. (Aulophorus)</i> sp. I	(6)
<i>D. (Aulophorus)</i> sp. II	(8)
<i>Haemonais waldvogeli</i> Bretscher <sup>+</sup>	(6)
<i>Nais communis</i> Pigué	(6-9)
<i>N. elinguis</i> Müller	(11)
<i>N. pardalis</i> Pigué <sup>+</sup>	(6-7-11)
<i>Pristina breviseta</i> Bourne	(7-9)
<i>P. aequiseta</i> Bourne	(7-8-9)
<i>P. idrensis</i> Sperber	(2-3-5-6-8)
<i>P. leidy</i> Smith	(3-8)
<i>P. notopora</i> Cernosvitov	(10)
<i>Pristina</i> sp. I	(8)
<i>Slavina isochaeta</i> Cernosvitov	(6-11)
<i>Slavina</i> sp.	(9)
<i>Stephensoniana trivandrana</i> Aiyer	(3-9)
TUBIFICIDAE	
<i>Aulodrilus limnobius</i> Bretscher	(6-9)
<i>A. pigueti</i> Kowalewski	(6)
<i>Bothrioneurum</i> sp	(6)
<i>Limnodrilus claparedeianus</i> Ratzel	(1-6-9-11)
<i>L. hoffmeisteri</i> Clapárede	(1-3-4-5-6-7-8-9-11)
AELOSOMATIDAE	
ENCHYTRAEIDAE	
LUMBRICULIDAE	
OPISTOCYSTIDAE	

#### References

Streams- 1: El Gato; 2: La Guardia; 3: Rodríguez; 5: Martín; 5: El Carnaval; 6: Baldovino; 7: El Pescado; 8: Zapata; 11: El Azul.  
Canal- 9: La Balandra; 10: Atalaya, Río de la Plata.

dae is much higher than that of Tubificidae, and *Dero* and *Pristina* are the genera richest in species.

Most Naididae identified are cosmopolitan, but four are neotropical: *D. evelinae*, *P. leidy*, *S. isochaeta* and *Bothrioneurum* sp. Three species are new to Argentina: *Bratislavia unidentata*, *Haemonais waldvogeli* and *Nais pardalis* (Table 1). *P. idrensis* and *L. hoffmeisteri* had a wide distribution

in the lotic waters studied (Table 1). The highest species richness was found in El Baldovino stream (eighteen species), while, the number of species was particularly low in the Martín and El Gato streams (Table 1).

*Nais communis* was reported, without locality record, from Patagonia (Michaelsen & Bolt, 1932). Some specimens in El Baldovino stream and a large population in La Balandra canal, near the Río de La Plata, were found. *B. unidentata*, immature and mature, was collected from Baldovino and Zapata streams and from La Balandra canal. *H. waldvogeli* was found only in Baldovino stream, and *N. pardalis* inhabits Baldovino, El Pescado and El Azul streams. The Tubificidae were less varied and represented by five species (Table 1). *L. claparedeianus* and *L. hoffmeisteri* showed the widest distribution.

Specimens of *L. hoffmeisteri* with atypical sheaths were observed in El Gato and El Pescado streams (Fig. 1). The distal end of the sheaths differs from variants described by Maciorowski (1977). My *L. hoffmeisteri* presented in one case, a distal end lacking the reflected lobe, but possessing two deep incisions on the sheath wall. Another variant showed the two incisions and a small reflected lobe (Fig. 1), but the latter could be a mounting artifact.

Aelosomatidae occurred in El Gato, Rodríguez and Zapata streams and in La Balandra canal, and on the sands of the Río de La Plata at a side called Atalaya. Immature Lumbriculidae were found in Baldovino stream. Opisthocystidae were collected in La Balandra canal.

El Gato and Martín streams have only tubificids and lack naidids. Rodríguez stream with seven species cannot be considered highly polluted as did Fernández *et al.*

#### Taxonomic remarks

##### Family Naididae

##### *Bratislavia unidentata* (Harman, 1973)

Material examined: 20 immature and mature worms from Baldovino and Zapata streams and from La Balandra canal.

Length (preserved) 6–8 mm; living 2 c; diameter (preserved) 250 µm; 32 segments. Prostomium

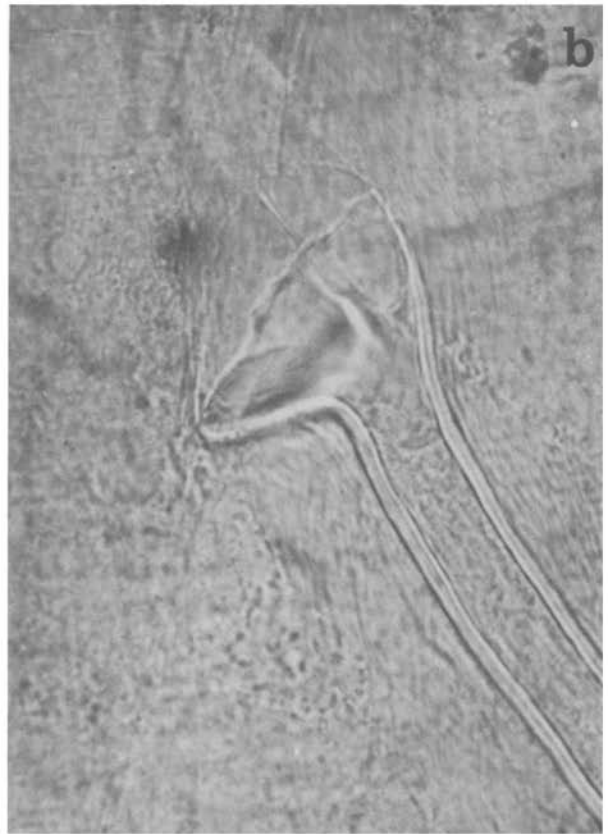
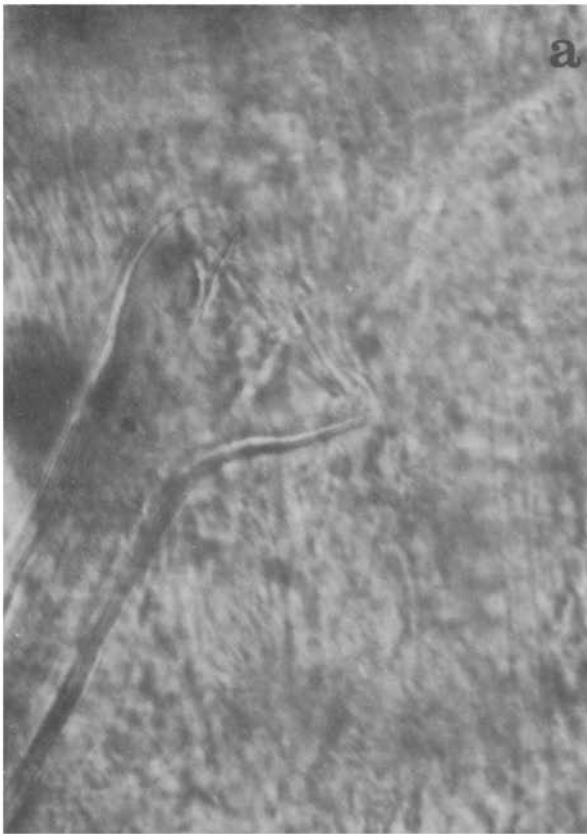


Fig. 1. Atypical penis sheaths of *L. hoffmeisteri*. 400×

a: distal end with two deep incisions without any reflected lobe; b: second variant with two deep incisions and a reflected lobe.

moderately triangular, without proboscis. Dorsal fascicles from II, one simple-pointed seta S-shaped, stout, with distal nodulus. Segments II-III and sometimes up to V without hair setae (Fig. 2). Dorsal fascicles posterior to V with 1 smooth hair setae, frequently absent in posterior segments. Ventral setae 2–4 per bundle; in II-V, 4 per bundle decreasing in number on posterior segments. Ventral setae on II-V slender, 90  $\mu\text{m}$  long; upper tooth thinner than lower. Ventral setae posterior to segment V stout with teeth equally long and upper tooth thinner than lower (Fig. 3).

Mature worms in February. Clitellum from the middle of segment V to VII-VIII. Spermathecae between segments IV-V; atria in VI, diffuse prostate surrounding atria and a large sperm sac from segments VII to IX. Penial setae 2–3 per bundle in segment VI, simple-pointed, hooked (Fig. 4).

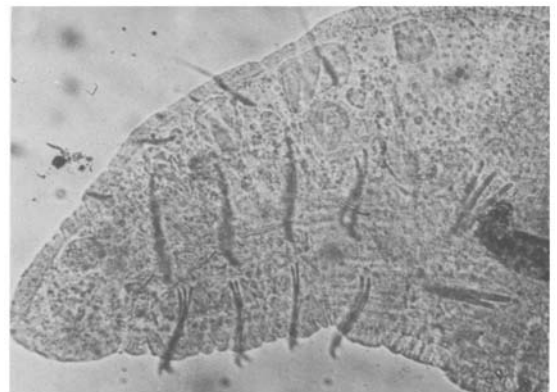


Fig. 2. *B. unidentata*: mature. Prostomium and first segments. Dorsal and ventral setae. 100×

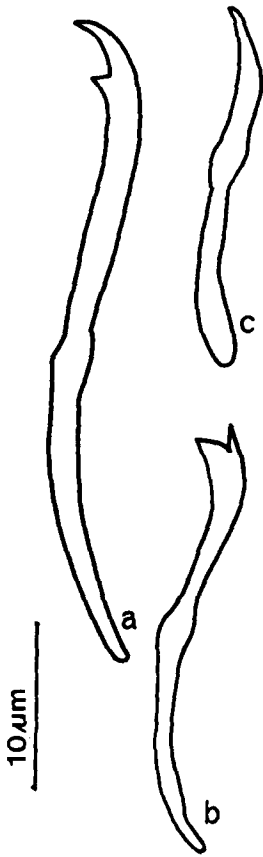


Fig. 3. *B. unidentata*: dorsal and ventral setae. 400×  
a: ventral seta from II; b: posterior ventral seta; c: dorsal needle from II.

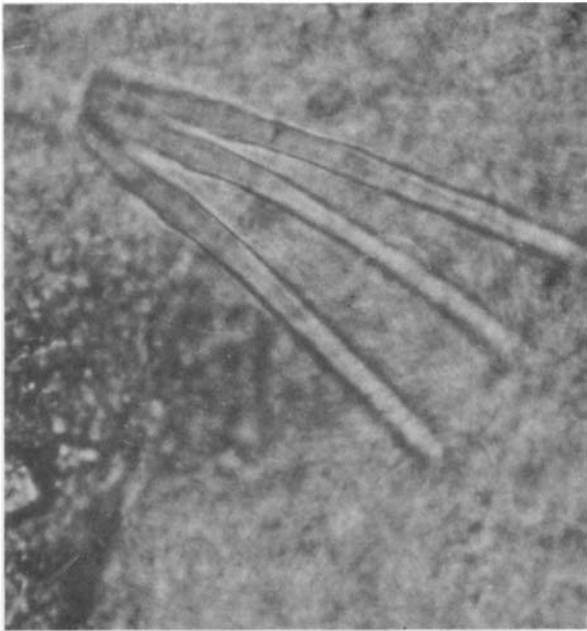


Fig. 4. *B. unidentata*. Penial setae. 400×

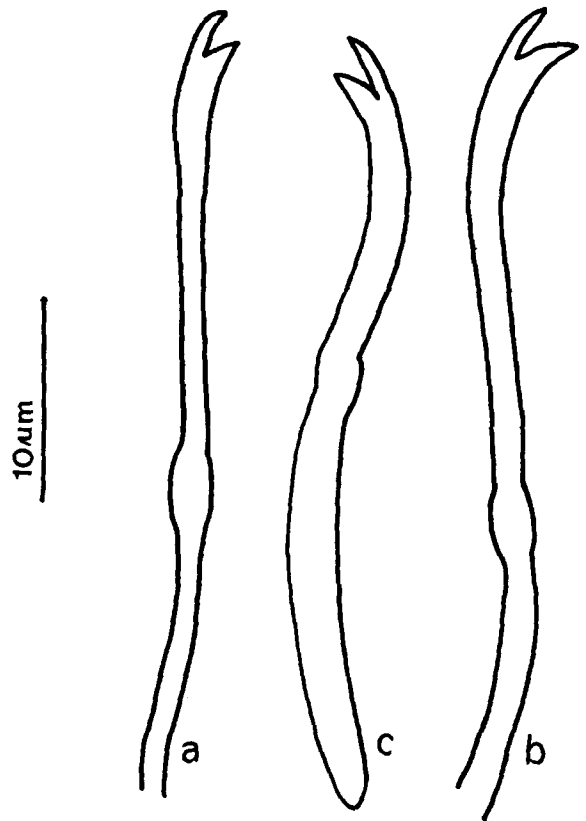


Fig. 5. *H. waldvogeli*: a, ventral seta of III; b, posterior ventral seta; c, dorsal seta of XII.

#### *Haemonais waldvogeli* (Bretscher, 1900)

Material examined: 2 immature worms from Baldovino stream.

Length (preserved) 10 mm; s: 20–49 (worms in budding). Dorsal setae bundles beginning on XII in one specimen and on XX in the other, usually with one short hair and one curved needle seta with distal nodulus and long teeth, the upper tooth longer. Ventral setae 2–6 per bundle, on anterior segments with proximal nodulus, and from XVII onwards more curved and slightly thicker, with teeth equally long but the lower thicker and stronger (Fig. 5).

#### *Nais pardalis* (Piguet, 1906)

Material examined: 16 immature worms from Baldovino, El Pescado and El Azul streams.

Lengths (preserved) 6–8 mm; 20 segments. Dorsal setae from VI. Needles 1–2 per bundle with nodulus about 1/3 from the tip and fine, equal

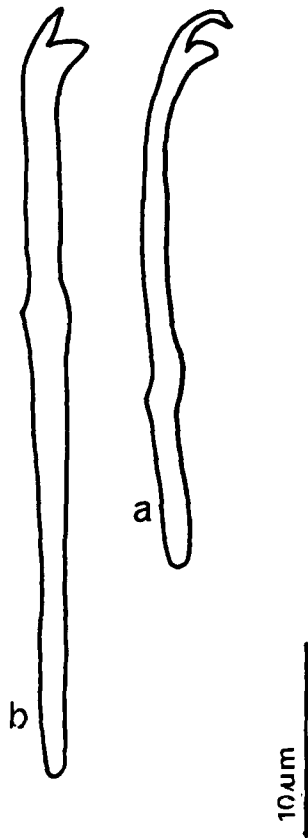


Fig. 6. *N. pardalis*. a: ventral seta of II; b: posterior ventral seta.

teeth; hairs usually one per bundle; when two are present, one is very short. Ventral setae of II-V, 5 per bundle with upper tooth  $1\frac{1}{2}$ –2 times as long as lower and nodulus median or slightly proximal; from VI on, 5 setae per bundle with distal nodulus and thick setae with equal teeth (Fig. 6).

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