

THE MARINE LEECH *Stibarobdella loricata* (HARDING, 1924) (HIRUDINEA, PISCICOLIDAE), PARASITIC ON THE ANGEL SHARK *Squatina* spp. AND SANDTIGER SHARK *Carcharias taurus* RAFINESQUE, 1810 (CHONDRICHTHYES: SQUATINIDAE, CARCHARIIDAE) IN SOUTHERN BRAZILIAN WATERS

SOTO, J. M. R.

Museu Oceanográfico do Vale do Itajaí, MOVI, Universidade do Vale do Itajaí, UNIVALI, Rua Uruguai, 458, CEP 88302-202, Itajaí, SC, Brazil

Correspondence to: Jules M. R. Soto, Museu Oceanográfico do Vale do Itajaí, MOVI, Universidade do Vale do Itajaí, UNIVALI, Rua Uruguai, 458, CEP 88302-202, Itajaí, SC, Brazil, e-mail: soto@bc.univali.br

Received April 1, 2002 – Accepted August 27, 2002 – Distributed December 31, 2003

(With 4 figures)

ABSTRACT

The presence of the marine leech, *Stibarobdella loricata* (Harding, 1924) (Hirudinea, Piscicolidae), is reported on the southern coast of Brazil, based on seven lots with 47 specimens, between 71 and 182 mm in total length, collected on the dorsal region of angel sharks, *Squatina argentina* (Marini, 1930); *S. guggenheim* Marini, 1936; *S. punctata* Marini, 1936 (Chondrichthyes, Squatinidae); and on the head of a sandtiger shark, *Carcharias taurus* Rafinesque, 1810 (Chondrichthyes, Carchariidae). This is the first record of *S. loricata* in the western Atlantic and of its parasitic association with *S. argentina*, *S. guggenheim*, *S. punctata*, and *C. taurus*.

Key words: *Stibarobdella loricata*, *Squatina* spp., *Carcharias taurus*, Hirudinea, Chondrichthyes, ectoparasitism.

RESUMO

É assinalada a presença da sanguessuga marinha, *Stibarobdella loricata* (Harding, 1924) (Hirudinea, Piscicolidae), na costa sul do Brasil, com base em sete lotes contendo 47 espécimes, entre 71 e 182 mm de comprimento total, coletados na região dorsal de tubarões-anjo, *Squatina argentina* (Marini, 1930), *S. guggenheim* Marini, 1936, *Squatina punctata* Marini, 1936 (Chondrichthyes, Squatinidae) e sobre a cabeça de um tubarão-mangona, *Carcharias taurus* (Rafinesque, 1810) (Chondrichthyes, Carchariidae). Estes são os primeiros registros de *S. loricata* no Atlântico ocidental e da associação parasitária com *S. argentina*, *S. guggenheim*, *S. punctata* e *C. taurus*.

Palavras-chave: *Stibarobdella loricata*, *Squatina* spp., *Carcharias taurus*, Hirudinea, Chondrichthyes, ectoparasitismo.

INTRODUCTION

Previous works on marine leeches in Brazilian waters are scarce and based on compilations (Pinto, 1923; Ringuelet, 1944) and single records (Soto, 2000), including hirudineans of Argentina, Brazil, Chile, Paraguay, and Uruguay. Between January 1991 and June 2001, several specimens of marine

leeches were collected which had adhered to the dorsal region of coastal sharks on the Rio Grande do Sul coast, and which were stored in the Invertebrate section of the Museu Oceanográfico do Vale do Itajaí (MOVI). All leeches are males 71 to 182 mm in total length; the hosts are subadults and adults of common sharks of the southern Brazilian coast (Table 1).

TABLE 1
Lots of *Stibarobdella loricata* collected of the coast of Rio Grande do Sul, southern Brazil.

Coll. N° MOVI	n	TL (mm)	Locality	Latitude/ Longitude	Fishing modality	Depth (m)	Date	Fishing Vessel	Hosts
01133- 01134	2	124-130	Off coast of Imbé	29°53'S 49°45'W	Botton gillnet	27	-/i/ 1991	Laureano V	<i>Squatina punctata</i>
01724	1	120	Off coast of Imbé	29°54'S 49°35'W	Botton gillnet	38	-/ix/ 1991	Laureano V	<i>Carcharias taurus</i>
01735- 01737	3	162	Off coast of Tramandaí	29°34'S 49°35'W	Botton gillnet	52	-/ii/ 1992	Laureano IV	<i>Squatina punctata</i>
03873	1	182	Off coast of Torres	29°34'S 49°10'W	Botton gillnet	52	-/ix/ 1993	Laureano IV	<i>Squatina punctata</i>
10780- 10808	29	71-171	Off coast of Chui	34°05'33"S 51°26'30"W	Baited trap	~200	31/vi/ 1995	Iporanga	<i>Squatina argentina Squatina guggenheim</i>
10809- 10818	10	72-137	Off coast of Mostardas	30°57'05"S 50°10'04"W	Baited trap	90	24/vii/ 1995	Iporanga	<i>Squatina argentina Squatina guggenheim</i>
19521	1	83	Off coast of Rio Grande	32°34'17"S 50°19'09"W	Botton trawl	300	3/vi/ 2001	Saga de Thor	<i>Squatina argentina</i>

The nomenclature of the angel sharks of the *Squatina* complex follows Soto (2001). The ectoparasite was identified as *Stibarobdella loricata* (Harding, 1924) (Clitellata, Piscicolidae, Ichthyobdellinae) (Fig. 1), a typical genus and species of leech ectoparasitic on elasmobranchs, based on a dichotomous key of Llewellyn (1966) and some other particular characters presented by the same author.

The species is characterized by a fusiform body tapering gradually towards the anterior end long and circular in cross-section when fully gorged, but somewhat flattened dorso-ventrally in starved specimens. The anterior sucker is cup-shaped and attached eccentrically so that the dorsal surface is longer than the ventral. It is generally circular but may be slightly flattened laterally, so that its opening becomes slit-like. It possesses a marginal fringe and generally three pairs of inconspicuous papillae on each side. The anterior sucker is often about equal in size to the posterior sucker, but when both are fully expanded the latter is slightly larger.

The anterior sucker is usually three times the diameter of its point of attachment but never exceeds the greatest diameter of the body.

The posterior sucker is cup-shaped when contracted and its diameter is then less than the greatest diameter of the body, but approximately equals it when expanded. This sucker is attached centrally and is greater in diameter than its point of attachment. The color of all specimens examined is olive green (fresh) or pale yellow (fixed). A diagram illustrating the annulation, tuberculation, and suckers of a single specimen of *S. loricata* is shown in Figs. 2 and 3.

The spectrum of the fish hosts include unidentified oceanic sharks and the distribution is large in circumglobal tropical waters (Llewellyn, 1966) (Fig. 4). The present paper reports the first record of *Stibarobdella loricata* in the western Atlantic (southern Brazilian coast) and the first identified hosts, *Squatina argentina*, *S. guggenheim*, *S. punctata*, and *Carcharias taurus*, for this marine leech.



Fig. 1 — *Stibarobdella loricata* MOVI 03873 (male, 182 mm TL) collected on the dorsal region of the *Squatina punctata*, off the coast of Rio Grande do Sul, southern Brazil.

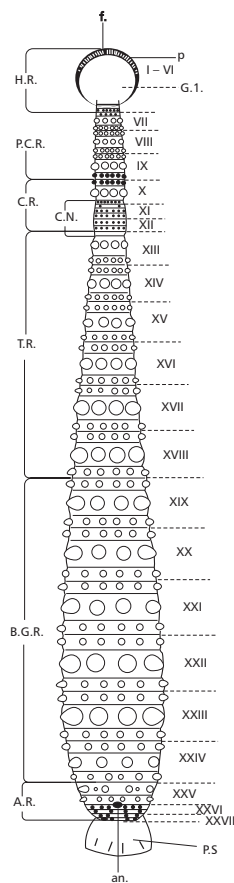


Fig. 2 — A typical *Stibarobdella loricata* in dorsal view, according to Llewellyn (1966). See the same author for abbreviations of annulation, tuberculation, and suckers.

	H.R.						P.C.R.						C.R.						T.R.			
Somites	I – VI						VII						VIII						IX			
Dorsal.	6	6	6	6	6	6	6	4	6	6	4	6	6	4	0	2	6	6	6	6	6	6
Ventral.	0	0	4	4	4	4	2	4	4	5	4	4	6	4	0	0	7	8	7	8	0	4
Size 1–3.	1	1	2	2	3	2	2	3	2	2	3	2	2	3	2	1	2	2	2	2	1	3
	N.R.						C.N.															
													♂						♀			
	B.G.R.						A.R.															
Somites	XXIII						XXIV						XXV						XXVI			
Dorsal.	6	4	6	2	6	4	6	4	6	6	6	6	4	4	4	4	2	0	4	4	4	4
Ventral.	6	2	4	4	6	4	5	4	4	4	4	4	2	0	1	1	1	1	1	1	1	1
Size 1–3.	2	3	2	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Fig. 3 — Diagram of a typical *Stibarobdella loricata*, according to Llewellyn (1966). See Fig. 2 to localize the structures.



Fig. 4 — Global distribution of *Stibarobdella loricata*, including the new record for the southern Brazilian coast.

Acknowledgements — I am grateful to Michael Maia Mincarone, for comments on the manuscript, and Rafael de Alcantara Brandi for his work on the figures.

REFERENCES

- LLEWELLYN, L. C., 1966, Pontobdellinae (Piscicolidae: Hirudinea) in the British Museum (Natural History) with a review of the subfamily. *Bull. Brit. Mus. (Nat. Hist.)*, Zool., 14: 389-439.
- PINTO, C., 1923. Ensaio monographico dos hirudíneos. *Rev. Mus. Paulista*, 13: 853-1118.
- SOTO, J. M. R., 2000, Marine leech, *Stibarobdella macrothela* (Schmarda, 1861) (Hirudinea, Piscicolidae), parasitic on the whaler shark, *Carcharhinus brachyurus* (Günther, 1870) (Chondrichthyes, Carcharhinidae), in southern Brazilian waters. *Rev. Brasil. Biol.*, 60(4): 713-714.
- SOTO, J. M. R., 2001, Annotated systematic checklist and bibliography of the coastal and oceanic fauna of Brazil. I. Sharks. *Mare Magnum*, 1(1): 51-119.
- RINGUELET, R., 1944, Sinopsis sistemática y zoogeográfica de los hirudíneos de la Argentina, Brasil, Chile, Paraguay y Uruguay. *Rev. Mus. La Plata, Nueva Serie 3, Zool.*, 22: 163-232.