

**SPIRURA DELICATA SP. N. (SPIRURIDAE, SPIRURINAE) FROM  
LEONTOCEBUS MYSTAX (CALLITHRICHIDAE) AND A CHECK LIST OF OTHER  
NEMATODES OF SOME BRAZILIAN PRIMATES**

J. JULIO VICENTE/\*; R. MAGALHÃES PINTO/\* & ZARA FARIA

Departamento de Helminologia, Instituto Oswaldo Cruz, Av. Brasil, 4365, 21045-900 Rio de Janeiro, RJ, Brasil

*Spirura delicata* sp. n. from *Leontocebus mystax* (Spix) is proposed and compared to *S. guianensis* (Ortlepp, 1924) Chitwood, 1938, *S. michiganensis* Sandground, 1935 and *S. narayani* Mirza & Basir, 1938. Their differentiation is based mainly on the size and shape of spicules. Identification of nematode samples recovered from primates along 60 years and presently deposited in the Oswaldo Cruz Helminthological Collection is provided herein through a check list. Some of them are reported in new hosts and/or geographical regions.

Key words: Nematodes – *Spirura delicata* sp. n. – *Leontocebus mystax* – primates – Brazil

Primates, as widely known, are generally regarded as one of the most suitable hosts in the course of infective processes, mainly those related to helminths, in the evaluation and understanding of specific and various parameters due to the close physiological relationship they share with humans.

The screening of endoparasites harboured by these hosts, occurring as natural, experimental or accidental infections may be considered of effective relevance, supporting, in this way, the aim of this survey, scheduled in order to add partial data regarding the nematode fauna of some Brazilian primates and to be further accomplished with the report of other helminth groups.

#### MATERIALS AND METHODS

The 121 studied samples recovered from 20 species of primates captured in different localities of Brazil from 1910 to 1970, were deposited in the Oswaldo Cruz Helminthological Collection (CHIOC) and preserved in Railliet & Henry's solution.

Specimens were stained with carmine, dehydrated in ethanol (70° – 100°) cleared in beechwood creosote or phenol and returned to

the vials as wet material and a very few were mounted in balsam as whole mounts (\*).

Drawings were made with the aid of a tubular camera lucida. Measurements are in millimeters. NHR and/or NGD are to express New Host Record and/or New Geographical Distribution, respectively, as indicated elsewhere.

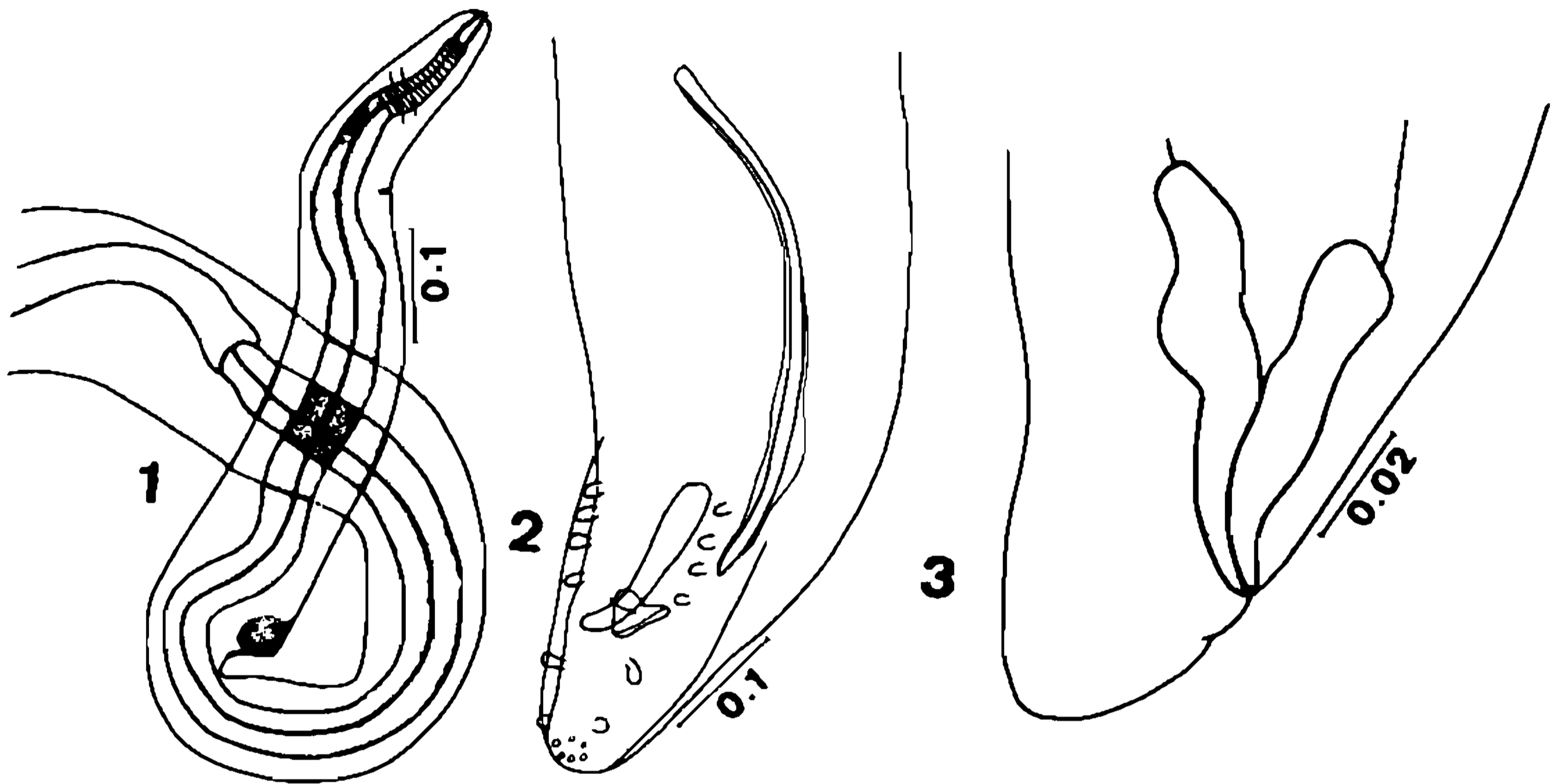
#### RESULTS

SPIRURIDAE Oerley, 1885  
SPIRURINAE Railliet, 1915  
SPIRURA Blanchard, 1849  
*Spirura delicata* sp. n.

Description: Based on one adult male and one immature female.

*General* – Small and slender worms, brownish in color when preserved. Cuticle with fine transverse striations and with a prominent ventral hump or boss 1.12 from anterior extremity in the male and 1.05 in the female. Mouth elongated dorso-ventrally, surrounded by the chitinous prolongation of the thickened vestibule, 0.04 in both sexes. The two small lips possess a lateral and two sub-median papillae each. There are about five very small and feeble bifid denticles arising and extending anterior to the mouth, parallel to the long axis of the worm. Esophagus with short anterior portion, 0.16 in both sexes; remainder glandular cylindrical, 2.03 in the male and 1.89 in the female. Nerve ring 0.19 from the anterior

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*Spirura delicata* sp. n. Fig. 1: male, holotype, anterior portion, lateral view. Fig. 2: male, holotype, posterior portion, partial frontal view. Fig. 3: female, posterior portion with rectum, lateral view.

end in both sexes. Excretory pore in cervical region 0.34 from anterior end in the male and 0.29 in the female. Anus 0.08 from posterior end in both sexes.

**Male** (Figs 1, 2) – Body 4.34 long by 0.26 wide. Caudal region moderately directed towards the ventral surface; caudal alae somewhat wide and not continuous across ventral surface. Four pairs of pre-anal and two pairs of post-anal pedunculated papillae, followed by six unpaired and smaller sessile papillae. Spicules very unequal and dissimilar; the right measures 0.40 in length and is longer, narrower and winged; the left, 0.14, is shorter, broader and stouter. Gubernaculum 0.04 long, has a tapering scoop shape with two curved lateral flanges at the tip. **Female** (Fig. 3) Body 3.37 long by 0.22 wide. The vulva lies at a distance of 1.58 from the anterior end, levelled to the posterior end of the glandular esophagus.

Host: *Leontocebus mystax* (Spix)

Site: Esophageal mucosa

Locality: Manaus, Amazonas State

Types deposited: CHIOC no. 13.492

The following species are well known, deserving no further comments. Some specific diagnosis regarding to the nematodes were not

achieved due to the bad condition of those studied samples.

Nematode species – hosts – site – localities – CHIOC deposited numbers: *Dipetalonema gracilis* (Rud., 1819) Diesing, 1862 – *Callithrix jacchus* (L.) (NHR) – body cavity – Belém – Pará State – no. 27,231; *Cebus capuccinus* (L.) – Mato Grosso do Sul State – no. 8,703; *C. sp.* – Anápolis – Goiás State – no. 29,840; Batista, Maracajú, Mato Grosso do Sul State – no. 29,841; Jacaré, Alto Xingú – Pará State – no. 29,842; Fordlândia, Itaituba Pará State – no. 29,846. *Dipetalonema* sp. – *Alouatta guariba guariba* (Humb.) (NHR) – body cavity – Barra Seca, Espírito Santo State (NGD) – no. 29,524; *Cebus apella macrocephalus* (Spix) – Cachoeira da Paciência, Pará State – no. 9,032; *C. a. paraguayanus* Fischer – Salobra, Mato Grosso do Sul State – nos. 29,843, 29,847; *Saimiri sciureus* (L.) – Belém, Pará State – no. 27,232. *Filariopsis barreto* (Travassos, 1921) Rego, 1974. *Callithrix jacchus* (L.) – lungs – Bahia State – nos. 3,143, 31,038 a-e (\*), 31,039 a-c (\*); *Cebus apella paraguayanus* Fischer – Salobra, Mato Grosso do Sul State – nos. 11,453, 11,456, 32,415 a-c (\*), 32,416 (\*); Rio de Janeiro State (?) – no. 6,169; *Cebus capuccinus* (L.) (NHR) – Rio de Janeiro State (?) – nos. 6,158, 6,159, 10,307; Mato Grosso do Sul State – nos. 8,583, 10,307; *Saimiri sciureus* (L.) – Rio de Janeiro State (?) – nos. 3,143-3,146,

3,291, 3,391, 3,392. *Molineus torulosus* (Molin, 1861) Yorke & Maplestone, 1926 – *Cebus apella paraguayanus* Fischer – small intestine – Salobra, Mato Grosso do Sul State – nos. 11,205, 11,449, 11,450, 11,452, 11,457, 13,023, 14,136-14,138, 14,158-14,160, 14,176, 14,388, 15,177-15,180, 15,196, 15,903; *C. capuccinus* (L.) – nos. 7,903-7,906, 8,005, 8,037; *C. frontatus* (?) – Linhares, Espírito Santo State – nos. 16,909, 16,688, 17,670; *C. sp.* – Manaus, Amazonas State – nos. 31,310 a (\*), 32,413 a-b (\*), 32,414 (\*); *Saimiri sciureus* (L.) (NHR) – Rio de Janeiro State (?) – nos. 3,207, 3,209, 3,212, 3,218, 3,225, 3,332, 3,336, 3,338; Belém, Pará State (NGD) – no. 13,407. *Necator* sp. – *Cacajao calvus* (Geoff.) – small intestine – Japurá, Amazonas State – no. 5,842. *Parabronema bonnei* (van Thiel, 1925) Baylis, 1926 *Alouatta caraya* (Humb.) – stomach – Pacaú, Minas Gerais State (NGD) – no. 21,481, 27,227 a-e (\*). *Physaloptera* sp. – *Cacajao calvus* (Geoff.) (NHR) – stomach – Japurá, Amazonas State – no. 5,846 *Cebus apella* (L.) – Maracajú, Mato Grosso do Sul State – no. 18,062; *C. apella macrocephalus* (Spix) – Cachoeira da Paciência, Pará State – no. 9,033; *C. a. paraguayanus* Fischer – Salobra, Mato Grosso do Sul State – nos. 11,198, 11,455, 13,030, 14,997; *C. capuccinus* (L.) (NHR) – Mato Grosso do Sul State – nos. 9,437, 9,438, 9,440, 9,441, 9,445; *C. sp.* Manaus, Amazonas State – no. 31,432 a-d (\*); *Lagothrix lagotricha* (Humb.) (NHR) – Belém, Pará State (NGD) – no. 21,384; *Leontideus rosalia* (L.) (NHR) – (?) – no. 13,600. *Spirura delicata* sp. n. – *Leontocebus mystax* Spix – esophageal mucosa – Manaus, Amazonas State – no. 13,492. *Subulura distans* (Rud., 1819) Railliet & Henry, 1912 – *Callithrix jacchus* (L.) – intestine – Lassance, Minas Gerais State – no. 337, 342. *Subulura jacchi* (Marcel, 1857) Railliet & Henry, 1913 – *Callithrix argentata melanura* (Geoff.) (NHR) – large intestine Urucum, Mato Grosso State – nos. 20, 560, 20,732; *C. aurita coelestis* (M. Ribeiro) – small intestine – Gaspar Lopes, Alfenas, Minas Gerais – nos. 30,520 a-m (\*), 30,521 a-d (\*); *C. jacchus* (L.) – large intestine – Maricá, Rio de Janeiro State (NGD) – no. 18,077; *C. penicillata* (Geoff.) (NRH) – Lassance, Minas Gerais State – no. 13,546. *Subulura* sp. – *Cebus apella paraguayanus* Fischer (NHR) – intestine – ? – no. 16,120. *Trypanoxyuris* (T.) *minutus* (Schneider, 1866) Inglis & Diaz-Ungria, 1959 – *Alouatta caraya* (Humb.) – small intestine – Barranquinho, Mato Grosso do Sul State (NGD) – nos. 12,889, 13,436, 13,449, 13,469, 13,617, 13,619, 13,766;

*A. belzebul* (L.) (NHR) – Cecum – Piratuba, Pará State (NGD) – no. 10,093; *A. guariba guariba* (Humb.) (NHR) – Barra Seca, Espírito Santo State (NGD) – no. 29,503; *A. senicola straminea* (Humb.) – large intestine – Igarapé do Ouro, Serra do Navio, Amapá Territory – no. 31,909 a-g (\*). *A. sp.* – small intestine – Cantareira, Rio de Janeiro State (NGD) – no. 12,288; *Saimiri sciureus* (L.) (NHR) – Belém, Pará State – no. 21,330. *Trypanoxyuris* (H.) *callithricis* (Solomon, 1933) – *Callithrix jacchus* (L.) – intestine – Lassance, Minas Gerais State – no. 2,465. *Trypanoxyuris* (T.) sp. – *Alouatta caraya* (Humb.) – intestine Barranquinho, Mato Grosso do Sul State – no. 13,766; *Saimiri sciureus* (L.) (NHR) – large intestine – Maicuru, Pará State – no. 13,511; Rio de Janeiro, Rio de Janeiro State (?) – nos. 3,393, 3,394, 7,662.

Concerning to the hosts specific names they were updated according to Cabrera (1957) and those remaining under generic status, preserved as appear on the original deposited files.

#### DISCUSSION

##### *Spirura delicata* n. sp.

Although only a specimen of each sex was available *Spirura delicata* sp. n. has obvious characters of *Spirura* Blanchard, 1849 and, for this reason, is placed under this genus.

Morphologically, as for the very unequal and dissimilar spicules, only two species can be taken into account in the comparison with the species now erected: *S. michiganensis* and *S. narayani*. The former was proposed by Sandground (1935) from a sciurid host and its affinities with *S. delicata* sp. n., lay only in the spicular relation, since the male caudal papillar distribution does not even agree with that of the original generic diagnosis.

In fact, the most related species to the new one is that of Mirza & Basir (1938), *S. narayani*, recovered from *Herpestes mungo*, presented in a study of nematode samples collected in India from some hosts. Although the relation right/left spicule is quite the same when compared to *S. delicata* sp. n. there is, conversely, a morphological change, since in the new species, the stouter one is exactly the shorter, instead of the longer, in disagreement with the description of the latter authors. Moreover, there is no mention of a gubernaculum.

culum, present in the new species, and also, *S. delicata* sp. n. is promptly distinguished from them, mostly for the other appraised parameters.

As for *S. guianensis*, diagnosed by Ortlepp (1924), with subequal and moderately dissimilar spicules, was the first species to be recovered from a primate host, since *S. tamarini* described by Cosgrove et al. in 1963 was later (Thatcher & Porter, 1968) considered a synonym of *S. guianensis*.

The most actual redescription of *S. guianensis* in Brazil is that of Pinto & Gomes (1980) when this species was found parasitizing some Amazonian marsupials.

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