

**TRACHYPHARYNX CIBODASI SP.N. (STRONGYLOIDEA :
CYATHOSTOMIDAE), A NEW STRONGYLID FROM A RAT,
RATTUS TIOMANICUS FROM CIBODAS, WEST JAVA,
INDONESIA**

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ABSTRACT

Trachypharynx cibodasi sp.n. a new strongylid from a rat, *Rattus tiomanicus* from Cibodas-West Java, Indonesia is described. It differs from other species of *Trachypharynx* in having less number corona radiata internal elements (20), smaller body measurements and esophageal structure.

INTRODUCTION

Leiper (1911) and Yamaguti (1961) reported the first species of *Trachypharynx* from the giant rat, *Thryonomis swinderianus* (Temminck) from Nigeria, with *T. nigeriae* being the type of the genus. A second species, *T. natalensis* was later described by Ortlepp (1962). This species was also recovered from the same host species from Zululand, Natal. Besides the African records no other species of *Trachypharynx* has ever been recorded from elsewhere. The strongylid reported in this article was collected from the intestine of *Rattus tiomanicus* in Cibodas, a mountain botanical garden at 1400 m above sea level, W. Java. This discovery is worth describing since it differs in many distinct morphological features with the previously reported species.

Trachypharynx cibodasi sp.n. (Fig 1-6)

Stout worm, creamy white in color, cuticle transversely striated. Corona radiata interna with 20 elements. Esophagus short, bulbous at anterior and posterior regions. Cephalic papillae conspicuous, 1 pair (amphid), large, lateral, and two pairs small, sublateral (fig. 2).

Female : Body 6137 (5825-6450) μ long by 125 (120-130) μ wide at head, body width increasing posteriorly, 265 (260-270) μ at nerve ring, 285 (260-310) μ at neck, 303 (285-320) μ at esophago-intestinal junction, 362 (348-375) μ at mid body; gradually decreasing to 98 (90-105) μ at anus, 81 (80-82) μ at tail. Width of corona radiata interna 130 (120-140) μ , length 40 μ . Buccal capsule cup shaped (fig. 6), with thick wall diameter 65 (60-70) μ , depth 41.25 (40-42.5) μ .

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Nerve ring 205 (190–220) μ , esophago-intestinal junction 477.5 (475–480) μ from anterior end. Esophagus long 436.3 (432.5–440) μ by 125 (110–140) μ wide at anterior part of esophageal bulb, 65 (60–70) μ at mid region, and 137.5 (125–150) μ at posterior. Anterior uterine coil 1675 (1600–1750) μ , posterior uterine coil 5385 (5045–5670) μ , anus 5438 (5605–6270) μ from anterior end respectively. Vulva 378 μ anterior to anus. Tail curved dorsally, its diameter decreasing abruptly at one third posterior, blunt without spike (fig. 5), tail length 202.5 (185–220) μ . Uterus double, opistodelphic, eggs with thin shell, ellipsoidal, blunt at both end (fig. 3), length 63.8 (63–70) μ by width 38.3 (30–50) μ morulated stage.

Male : Body 4375 (4000–4750) μ long by 120 μ wide at head, body width increasing posteriorly, 185 (180–190) μ at nerve ring, 250 (230–270) μ at neck, 275 (270–280) μ at mid body; gradually decreasing to 178 (170–185) μ at anus. Width of corona radiata 105 (100–110) μ , length 33 (30–36) μ . Buccal capsule diameter 47.5 (40–55) μ , depth 35 (32.5–37.5) μ . Nerve ring 135 (130–140) μ , esophago-intestinal junction 369 (345–393) μ from anterior end. Esophagus long 328 (304–352) μ , by 112.5 (110–115) μ wide at anterior part of esophageal bulb, 62.5 (60–65) μ at mid region, 130 (125–135) μ at posterior. Anus 4224 (3813–4635) μ from anterior end. Bursa copulatrix three lobes, two ventral rays (ventroventral and lateroventral) is smallest, parallel, close together, with cleft along ray, tip of ray reach bursal margin. Externolateral separated, divergent, shorter than other lateral rays. Mediolateral and posterolateral rays equal in length, parallel, close together, cleft at one half of ray. Two externodorsal ray large, arising from two third anterior of dorsal ray, not reach bursal margin. Dorsal ray bifurcation at two third posterior and each branch bidigitated, convergent with externodorsal. Two spicules long, equal, width gradually decreasing to posterior end, bifurcated at the tip. Length of right spicule 450 μ and left spicule 422 μ , having same width 7.5 (fig. 1). From lateral ray the gubernaculum appears boat shaped, is 55–60 μ long by 17.5–20 μ wide (fig. 1).

The holotype (male : MZB Na 227a) and paratype (2 males and 1 female : MZB Na 227b) are deposited in the collection of Museum Zoologicum Bogoriense, Research and Development Centre for Biology, Bogor.

Etymology : The specimen is named after Cibodas, West Java, the location from where the host species was collected.

In many characters, *T. nigeriae* and *T. natalensis* are two and a half or three times longer than *T. cibodasi* (Table 1). Its corona radiata interna has 20 elements, that of *T. natalensis* with 30–35 elements. Cephalic papillae conspicuous, inconspicuous in *T. natalensis*. Tip of the tail blunt without any spike, tail longer than that of *T. natalensis* which has a longer body. This species is different from *T. natalensis*,

also in the ratio of width and depth of buccal capsule and diameter of anterior esophageal bulb (Tabel 1). Because of the incomplete description of *T. nigeriae*, a comparison with this species is based on the length of its body and esophagus. All these differences justify the designation of the new species, *Trachypharynx cibodasi*.

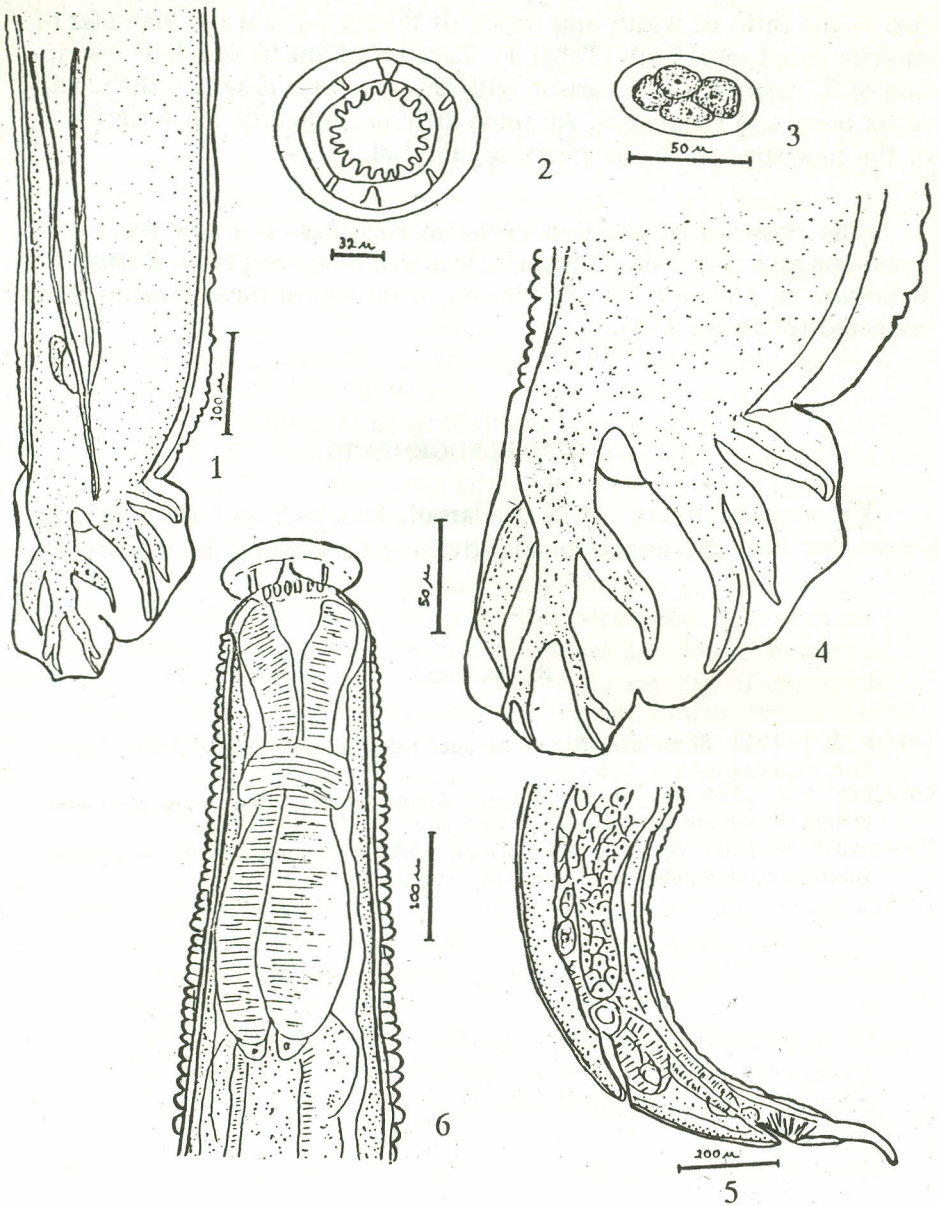
The presence of *Trachypharynx* in West Java is a new record for Indonesia and also Asia. This genus was also recovered from *Rattus makassarius*, an endemic rat of Sulawesi, from where three females were collected (MZB Na 238).

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Figs. 1 — 6 *Trachypharynx cibodasi*

1. Posterior extremity of male : showing the two spicules and gubernaculum.
2. Head, on face view : showing the arrangement and number of corona radiata internal elements.
3. Egg with thin shell and morulated stage.
4. Bursa copulatrix of male : showing the arrangements of bursal rays.
5. Posterior extremity of female, lateral view : showing the position of vulva
6. Anterior extremity of female : showing the corona radiata and esophagus.

Table 1. The main characteristic differences among *Trachypharynx nigeriae*, *T. natalensis* and *T. cibodasi sp.n.* (in micrometers/u)

Characters	<i>T. nigeriae</i> Leiper, 1911	<i>T. natalensis</i> Ortlepp, 1962	<i>T. cibodasi sp.n.</i> present study
FEMALE			
Body length	15000	14000 — 16000	5825 — 6450
Body width	460	480 — 500	348 — 375
Esophagus length	1250	1320 — 1510	433 — 440
Anterior esophageal bulb (max diameter)	?	390 — 410	110 — 140
Posterior esophageal bulb (max. diameter)	?	300 — 320	125 — 150
Corona radiata : width	?	320 — 340	120 — 140
Buccal capsule : wide	?	300 — 340	60 — 70
deep	?	80 — 85	40 — 43
Nerve ring from anterior end	?	480 — 530	190 — 220
Vagina uterina length	?	600 — 750	168 — 213
Tail length	?	120 — 140	185 — 220
Egg	?	78—84 x 44—48	63—70 x 45—50
MALE			
Body length	11000	12000 — 13000	4000 — 4750
Body width	?	440 — 480	290 — 310
Esophagus length	?	1050 — 1300	304 — 352
Anterior esophageal bulb (max diameter)	?	330 — 360	110 — 115
Posterior esophageal bulb (max diameter)	?	260 — 270	125 — 135
Corona radiata : width	?	300 — 330	100 — 110
Buccal capsule : wide	?	280 — 310	40 — 45
deep	?	75 — 80	33 — 38
Nerve ring from anterior end	?	480 — 530	130 — 140
Spicules	1300 — 1500	1740 — 1800	422 — 450
Gubernaculum	?	1300 — 1500	50—60 x 18—20