

TULISAN PENDEK

Nematodes of *Otus lempiji* (Horsfield, 1821) and *Gonocephalus kuhlii* From Ciremai Mountain, West Jawa

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The host animals were obtained from Ciremai Mountain region by research group of Ciremai, organized by Research Centre for Biology- Indonesian Institute of Sciences (LIPI) in 2006. This survey was intended to provide further data on morphometrics, host records and geographical distribution of the nematode parasites in Indonesia. There is no previous report on nematode from this region.

All organs of the digestive tract and liver of hosts were removed and opened with the aid of a scissor. All worms that visible to the naked eye were removed. Scrapings were also taken from the mucosae of the upper, middle and lower intestine and cecum under the microscope dissection. Then nematodes that found were examined by scanning electron microscope type JSM. 5310LV microscope. Specimens were fixed in glutaraldehyde, dehydrated with ethanol series and freeze dried. The dried specimens were then coated with gold before observation. Measurements were made with an ocular micrometer and software Image J, version 3.7 and given in micrometers unless otherwise stated.

Procyrnea sp.

(Spirurida, Habronematoidea,
Habronematidae)

(Figs. 1-10, measurement in μm)

Host : *Otus lempiji* (Horsfield, 1821)

Site of infection: under lining gizzard

General

Tiny worm and slender with transverse striation. Anterior region of males and females presents similar morphological features although males relatively smaller than female. Labial region with a small pair pseudolabial, a large dorsal and ventral labial, two pairs small dorsal and ventral labial; at each labial laying a big papillae. Base of pseudolabial as wide as at mouth; large lip wider at mouth than at base, amphid located on base of pseudolabial. Cephalic end with dorsally placed hook. Pharynx short with thick sclerotized lining, 0.58-0.74% of total body length (TBL). Lateral alae absent. Oesophagus simple, clearly divided into two portion; short anterior muscular and long posterior glandular region. Muscular esophagus 4.07-4.87% of TBL, glandular esophagus 26.55-35.58% of TBL. Nerve ring located at the middle of

muscular oesophagus, cervical papillae anterior to nerve ring. Excretory pore immediately posterior to nerve ring.

Male

Total length 7440-8088 maximum width 240-288. Head width 32-35. Pharynx 50-60 long. Nerve ring and excretory pore 150-190 and 220-260. Cervical papillae 8.46 by 4.74, 110.56 from anterior end. Muscular and glandular esophagus 325-340 and 2540-3120 long. Dorsal striation at middle body 5.65-6.13. Ventral surface of the posterior end of the male with longitudinal striations extended from just anterior to cloaca for 699.7 (specimen) towards anterior end of body. Caudal alae well developed and symmetrical. Four pairs pedunculate precloacal papillae comprising three pairs spherical shape precloacal papillae, one pairs mushroom shape precloacal papillae, between the mushroom papillae pairs laying the biggest club shape papillae. The first, second and fourth pairs precloacal papillae from anterior end placed lateral, but the third sub lateral, the fourth pairs slightly anterior from cloaca. One single left sub lateral adanal spherical papillae. One pair spherical post cloacal and between the pair laying a big median papillae. Three pairs of sessile papillae placed near tail tip. Tail 190-210 bluntly rounded and terminal spike. Spicules unequal and dissimilar. Left spicule short 310-450 long. Right spicule long, 1350-1630 in length. Ratio left-right spicule 1: 3.62-4.35, gubernaculum tonque shape.

Female

Total length 8630-10810, maximum width 242-385. Head width 35-40. Pharynx 50-64 long. Nerve ring and excretory pore 210 and 330-340 from anterior end. Muscular and glandular esophagus 420-440 and 2430-2870. Vulva situated in posterior of body 387 from posterior extremity. Uterine branches parallel. Vagina vera and vagina uterina 30 and 330 long (one specimen). Cloaca open, 26.6 by 44.0. Tail bluntly rounded with terminal spike and two sessil left papillae, 140-161 long. Eggs oval with smooth thick shell, 7-8 wide by 15-17 long, unembryonated in uterine.

Remarks

Chabaud proposed *Cyrnea* to accommodate nematode species assigned traditionally *Habronema*, but inhabiting avian hosts and having dorsal and ventral median internal oral processes. He further proposed the sub-genus *Procyrnea* for species of *Cyrnea* having lateral teeth inserted near the anterior border of the pseudolabial, and cervical papillae anterior than posterior to the nerve ring. Then he raised *Procyrnea* to generic rank. At present, more than 40 species have been described (Zhang, L., DR. Brooks & D. Causey, 2004. *Procyrnea* Chabaud, 1958 (Nematoda: Habronematoidea) in Birds from the Area de Conservacion Guana-caste, Costa Rica, Including Descriptions of 3 New Species. *J. Parasitol.* 90(2):364-372)

Procyrnea that obtained in this survey is the first record in Indonesia. *P. brevicaudata* Zhang, Brooks & Causey,

2004 differ from this species by in having pseudolabia wider at mouth than at base, and in having unequal and dissimilar spicule. This species can be distinguished from *P. mawsonae* in having two pairs of asymmetrically arranged pedunculate postanal papillae, in having unequal and dissimilar spicula. *P. mclennae* Zhang, Brooks & Causey, 2004 differ from this species by in having gubernaculums. *P. antervulvata* Pinto, Vicente & Noronha, 1996 differ from this species by in having eleven pairs of pedunculate papillae.

***Spinicauda* sp.**

(Ascaridida, Heterakoidea,
Heterakidae)

(Figs 11-16, measurement in μm)

Host : *Gonocephalus* sp.

Site of infection: intestine

General

Cephalic set off from body by a slight constriction, mouth with three large developed lips, one dorsal and two subventral, dorsal lip largest than subventral lips. Dorsal lips with two large papillae and a amphid. Subventral lips with a big papillae, a small papillae and a big amphid, respectively. Amphid of subventral lip having thick cuticular lining. Oral opening large, triangular. Outer of each lip become thick and the tip having three small ridges. Oesophagus divided into short anterior pharyngeal part, elongate corpus and a well-developed posterior bulb with large valve. Oesophagus 14.13-19.74% TBL.

Male

Body 4275-4357 long 710-820,

width at head. 52-72 maximum width 200-309. Pharynx 60-72. Nerve ring and excretory pore 220-285 and 340-420 from anterior end respectively. Cervical papillae not observed. Oesophagus 604-820, bulb 130-160 by 160-165. tail 142.0. Preanal sucker circular, sclerotized, diameter 32.2-51. Cloacal sucker from anus 42.5 (measurement from base of cloacal sucker). At the caudal sucker laying two preanal lateral big pairs, two small pairs preanal papillae, between caudal sucker and cloacal laying two pairs small asymmetrically and one right small papillae. Adanal papillae comprising one small left sublateral, one big pair at the anterior median edge of anus, two big submedian pairs, one left small more lateral and one small sub median pair and the postadanal papilla comprising one left small papillae and two small right papillae respectively from anterior, and one pair ventral and one pair distal postanal papillae near tail tip. Spicule equal and similar 597-752 long, 13.96-17.26% of TBL. Gubernaculum present.

Female

Body 3743 – 4058 long, width at head 41.2-52.0 maximum width 326-330. Pharynx 65-78 Oesophagus 670-801 long, bulb 152-180 by 180-220. Nerve ring, excretory pore and cervical papillae 227-237, 299-359 and 299-459 respectively from anterior end; vulva 134-169 from anterior end; vagina uterina and vagina vera 247-268 and 92 long, respectively. Tail conical 330-402; eggs rounded, thick and smooth shell, very variable in measurement 7-11 by 42-62, unembryonated in uteri.

Remarks

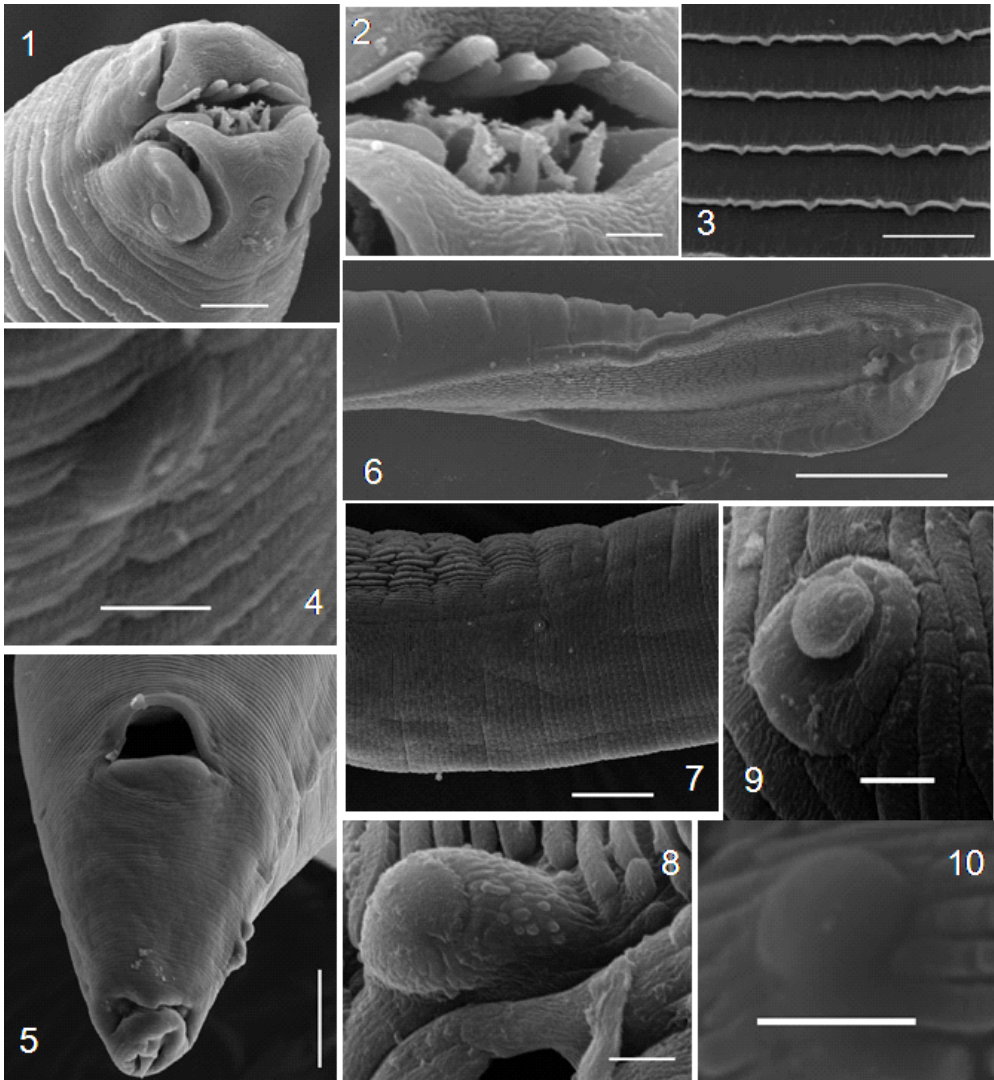
Two species of *Spinicauda* were recorded in Indonesia. The first was *S. longispiculata* Baylis, 1929, occurred in the intestine of *Gekko gecko* (Linnaeus, 1758) from Semarang and the last was *S. komodoensis* Pinnell & Schmidt, 1977 that was obtained from *Psammodynastes pulverulentus* Boei, 1827 from Komodo Island and no record of *Spinicauda* from Indonesia after that time. This *Spinicauda* is first collection of MZB.

This species differ from both of *Spinicauda* that had been described before by having lateral alae that begin more anterior, from end of head up to

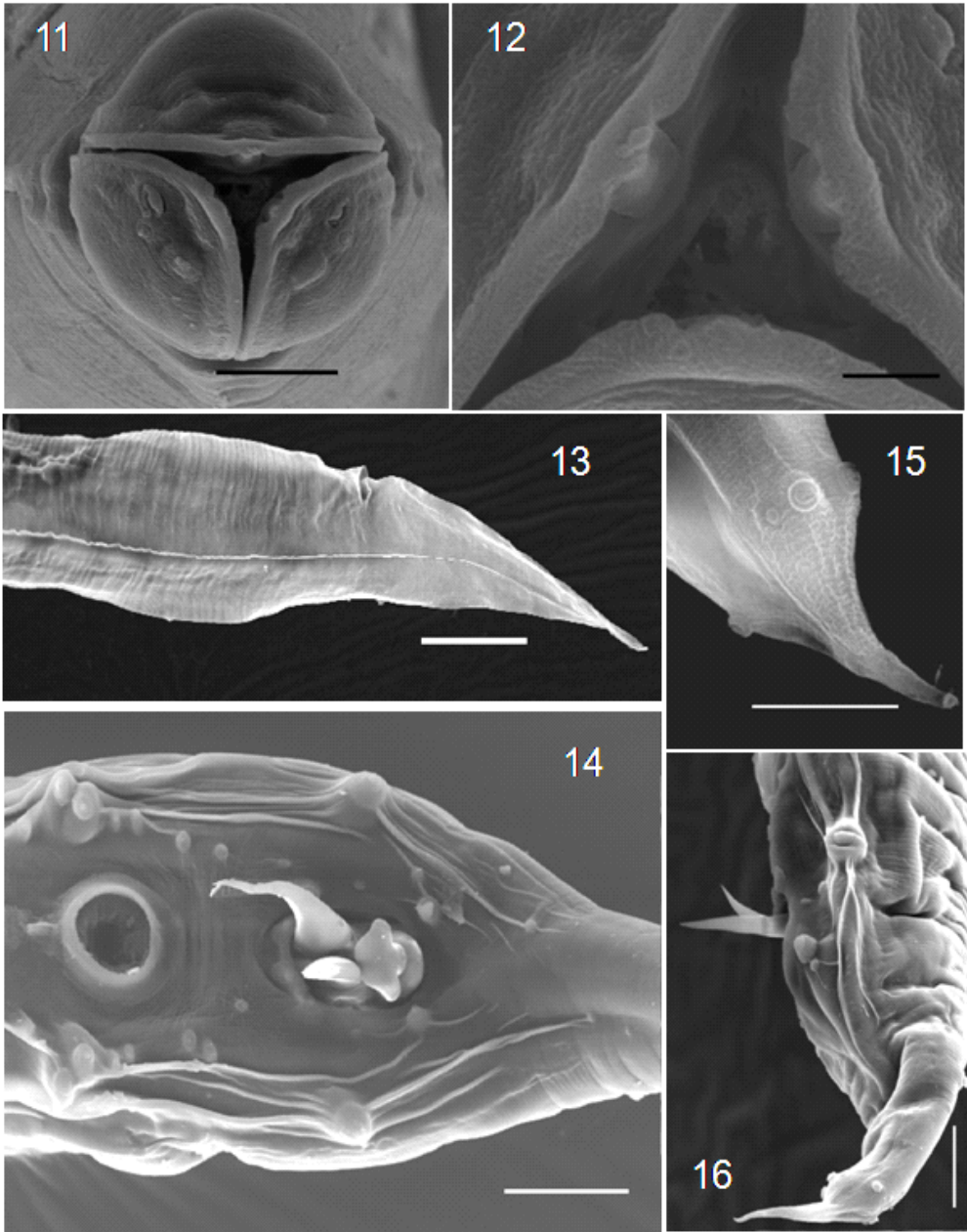
slightly posterior cloaca than at *S. longispiculata* and *S. komodoensis* that begin from nerve ring up to end of posterior. The other, this species having different in number and size of caudal papilla. This species having smallest body size than both of *Spinicauda*.

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Figs 1- 10. *Procyrnea* sp. 1. Cephalic region of male, ventral view; 2. Apical view, showing lips with tooth-like longitudinal ridges; 3. Transverse striations in mid-body region, dorsal view; 4. cervical papillae; 5. Posterior end of female with opening cloaca (dorsal view); 6. Posterior end of male (dorsal view); 7. End of longitudinal striations on ventral surface of posterior end of male; 8. Biggest club shaped pitted caudal papillae; 9. Mushroom shape caudal papillae; 10. Spherical shape caudal papillae.
 Bars: 1,3,10 μm ; Figs. 2,4,8,9,5 μm ; Figs. 5, 7,50 μm ; Figs. 6, 200 μm



Figs. 11-16. *Spinicauda* sp. 11. Cephalic region of male with three well developed lips, apical view; 12. each tip of three lips with three ridges; 13. female tail, lateral view; 14. male posterior with spicule protruding from cloaca and gubernaculum, ventral view; 15. tip of male tail; 16. male tail, lateral view.

Bars : fig 11,15, 20 μ m; 12, 5 μ m; 13, 100 μ m; 14, 50 μ m; 16, 30 μ m