NEW RECORD OF *Synhimantus (Dispharynx) nasuta* (RUDOLPHI, 1819) CHABAUD, 1975 (NEMATODA, ACUARIOIDEA) IN THE YELLOW VENTED BULBUL (*Pycnonotus goiavier*) FROM EAST KALIMANTAN, INDONESIA

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The occurrence of *S. (D) nasuta* is recorded for the first time in Indonesia from the Yellow-vented Bulbul, (*Pycnonotidae*) *Pycnonotus goiavier*. *S. (D) nasuta* occurs in many avian families (Baylis 1939; Yamaguti 1961; Soulsby 1982; Foster et al. 2002; Rodrigues et al. 2003; Zhang et al. 2004). Thus, the occurrence of this parasite on the family Pycnonotidae is a new host record.

Zhang et al. (2004) treated *Dispharynx* as a subgenus of *Synhimantus* Railliet, Henry and Sisoff, 1912. They stated that when Railliet et al. (1912) revised the genus *Acuaria* Bremser, 1811, her erected the sub-genus *Dispharynx*, with *A. (D.) nasuta* as the type species. Skrjabin et al. (1965) raised *Dispharynx* to generic rank. Chabaud (1975) considered *Dispharynx* a subgenus of *Synhimantus*. Mawson (1982) accepted Chabaud’s subgeneric designation, but on the other hand, Gogoi and Sarmah (1988) considered *Dispharynx* a distinct genus. In this paper we treated *Dispharynx* as a subgenus of *Synhimantus*.

The bird was collected from East Kalimantan, Indonesia (PT. INHUTANI, Sei Merdeka Unit, Km 29, 1°02’S, 116°20’E) in November, 2005. The nematodes were removed from the oesophageal lining, comprising 127 females and 133 males.

Examination was carried out by two methods; using light microscope and scanning electron microscope (SEM). For light microscopy study, the specimens were cleared in lactophenol. Drawings were made with a camera.
lucida attached to an Olympus BH microscope. In the case of SEM study, specimens were examined with a JSM. 5310LV microscope. The specimens were fixed in glutaraldehyde, dehydrated with ethanol and freeze dried. The dried specimens were then coated with gold before examining. All of measurements were presented in micrometers being the range of the mean of the standard deviation, when more than two specimens were measured.

The present description is to supplement existing studies previous, published by other research workers. The descriptions were based on 17 males and 10 females, selected randomly from the entire collection.

**General.** Small nematodes, body relatively stout and usually curled ventrally towards the posterior end with fine transverse annulations striations. Anterior region of males and females presents similar morphological features although males are relatively smaller than females. Lips small, conical. One pair of pseudolabia present. Oral aperture oval-elongate, near which originates two pairs of cephalic cordons. Cordons undulating, transversely striated, recurrent, thick, not anastomosing, formed from modified cuticle, with thin transverse striations. Excretory pore situated anterior to posterior limit of cordons. Cervical papillae between recurrent cordons, simple, bicuspid. Oesophagus simple, claviform, lining not ornamented, consisting of two parts, short anterior muscular and long posterior glandular region. Muscular oesophagus 9.97-14.69% of total body length (TBL), glandular esophagus 26.67-39.52% of TBL. Pharynx 2.22-2.67% of TBL.

**Male.** Body 3010 - 4240 µm long, 170-260 in maximum width. Head width 22-35. Cordons extend 287-393 from anterior extremely. Pharynx 80-100 long. Oesophagus 1,270-1,770, divided into anterior muscular region 410-520 long and 60-90 long maximum width and posterior glandular region 860-1,250 long and 70-100 maximum width. Nerve ring and excretory 190-260 and 246-290 from anterior end, respectively. Cervical papillae 180-245 from anterior end. Transverse annulations 24-33 (one specimen, the annulations from the middle of the body).

Caudal end of male spirally coiled. Tail 22-31 long. Spicules unequal, dissimilar. Left spicule slender, 240-390 long. Right spicule stouter and boat shape 82 - 142 long. Ratio of right spicule - left spicule 1 : 2.75 - 2.95, gubernaculum absent. Nine pairs of pedunculate caudal papillae, four pre and five post - cloacal. Pattern of papillae: one pair, two pairs, two pairs post-cloacal and fours pairs pre-cloacal, respectively. First pedunculate papilla from the posterior end was the smallest; tip of papillae rounded.
Ventral surface of the posterior end of the male with longitudinal striations extending from just anterior to cloaca for 344 (one specimen) towards anterior end of body.


Vulva situated in posterior of body 740 - 962 from posterior extremely. Vulva diameter 45.57 (one specimen). Vagina forms muscular ovejector running at first posteriorly from vulva and then bending anteriorly. Vagina vera and vagina uterine 54 and 106, respectively (one specimen). Uterine branches opposed, containing many small eggs. Didelphic. Eggs 20.8 - 21.01 (wide) by 38.94 - 39.26 (long); thick-shelled with larva when laid. Tail conical, with button-like termination, measures 120 - 130 in length.

In the past, classification of the Acuariinae depended largely on the pattern of the cordons on the surface of the anterior end of the body (Mawson 1982). Shang *et al.* (2004) reported that the cordon length and the structure of the cervical papillae were the most variable features in *S. (D) nasuta*. The shape and length and the spicules, number of caudal papillae and pharynx length were stable characters for distinguishing the species.

The morphology of *S. (D) nasuta* found in *P. goiavier* showed no differences from *S. (D) nasuta* found in other bird species. Although, slight differences in measurements were apparent among different hosts recorded by Baylis (1939), Rodrigues *et al.* (2003) & Zhang *et al.* (2004) (Table 1). These variations in measurements might be related to the host differences.

*S. (D) nasuta* has woodlice and sow bugs as its intermediate hosts (Soulsby 1982). The first-stage larvae develop to the infected third-stage larvae in 26 days after the ingestion of the eggs. When infested woodlice are eaten by birds, the worms reach maturity after 27 days. Based on faecal analysis, however, Yellow-vented bulbuls fed a lot of seeds of *Acacia mangium* and *Melastoma* sp. There were no remains of insects or other invertebrates.
Therefore, we assumed that the infection could have occurred before they switched their diet from insects to seeds.

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REFERENCES


<table>
<thead>
<tr>
<th>Region</th>
<th>Host</th>
<th>Male</th>
<th>Female</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costa Rica</td>
<td>Thysanoptera sp.</td>
<td>5,300-8,360</td>
<td>6.77-6.90</td>
<td>1.2-7.3</td>
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<td>Turkey group</td>
<td>Turinma sp.</td>
<td>4,250-5,990</td>
<td>7.41-7.28</td>
<td>1.2-6.2</td>
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<tr>
<td>Venezuela</td>
<td>Vermicula sp.</td>
<td>4,990-5,709</td>
<td>7.13-7.55</td>
<td>1.2-7.2</td>
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<tr>
<td>Costa Rica</td>
<td>Orchopteryx sp.</td>
<td>3,610-5,850</td>
<td>5.69-5.79</td>
<td>1.25</td>
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<td>India</td>
<td>Metopius sp.</td>
<td>4,500-6,500</td>
<td>6.26-9.33</td>
<td>1:2.6-2.67</td>
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<tr>
<td>Brazil</td>
<td>Odorus sp.</td>
<td>3,010-4,200</td>
<td>9.27-9.53</td>
<td>1:2.5-2.95</td>
</tr>
</tbody>
</table>

TBL.: Total Body Length
Figs a - e. a. Anterior end of female, ventral view. b. vulva and uteri, ventral view. c. posterior end of male, lateral view. d. left spicule (1) and right spicule (2). e. posterior end of female, ventral view. Bars: a, c, e: 50µm, b, d: 25µm