

PARONCHOCERCA THAPARI SP. N. FROM *FRANCOLINUS FRANCOLINUS*

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Abstract. At the present the genus *Paronchocerca* Peters, 1936 received 8 species. Because *Paronchocerca thapari* sp. n. exhibits a different arrangement of caudal papillae, we consider it to be new for science. We compared it with the eight known species and added a key to the species of *Paronchocerca*. *P. sanguinardeae* is not included in the key as its description is inadequate.

The genus *Paronchocerca* was erected by PETERS in 1936 for the worm *Paronchocerca ciconiarum* found in the saddle billed stork. He also transferred *O. bambusicolae* Li, 1933 into his genus and renamed as *P. bambusicolae*. Since then the following species have been added: 1. *P. sanguinardeae* (Leger et Noc, 1921) Chabaud et Biocca, 1951 proposed for *Filaria sanguinis-ardeae goliath*; 2. *P. tonkinensis* (Chow, 1939); 3. *P. rousseloti* Chabaud et Biocca, 1951; 4. *P. mirzai* Ali, 1956; 5. *P. straeleni* Chabaud et Ball, 1964; 6. *P. mansonii* Faust, 1966.

CHABAUD and BALL (1964) transferred *Aproctoides papillatus* Ali, 1956 and *Filaria helicinum* (Molin, 1858) Walton, 1927 redescribed by WEHR and HWANG (1957) as *Aproctoides helicina* to the genus *Paronchocerca*. Of these *Filaria helicinum* has a checkered history. WYMAN (1868) synonymised it as *Filaria anhingae*. LEIDY (1882) named it *Filaria wymani*. WEHR and HWANG (1957) proposed a new genus *Wymania* for this species and a new subfamily for *Anhingofilariinae*, renaming it *Wymaniinae*. ANDERSON (1958) stated that "*Wymania* is a member of *Onchocercinae*". YAMAGUTI (1961) included in under *Serratospiculum* Skrjabin, 1915; while CHABAUD and BALL (1964) assigned it to *Paronchocerca*.

In most species of *Paronchocerca* the vulva is either postoesophageal or near the posterior end of the oesophagus, while in this species the vulva is reported as "far anterior". *A. papillatus*, reported by ALI, does not possess the characters described for *Paronchocerca*. It has neither rugae so typical for the cuticle of *Paronchocerca* nor circumanal papillae, but only postcloacal papillae. The spicules of *A. papillatus* are also distinctly different from the spicules reported in species of *Paronchocerca*. There are also differences in the position of the vulva. Hence the author does not feel inclined to include *A. papillatus* under *Paronchocerca*. For reasons stated above both the species are not included in the key.

At present the following species are included under the genus *Paronchocerca*: 1. *P. ciconiarum* Peters, 1936; 2. *P. bambusicolae* (Li, 1933) Peters, 1936; 3. *P. san-*

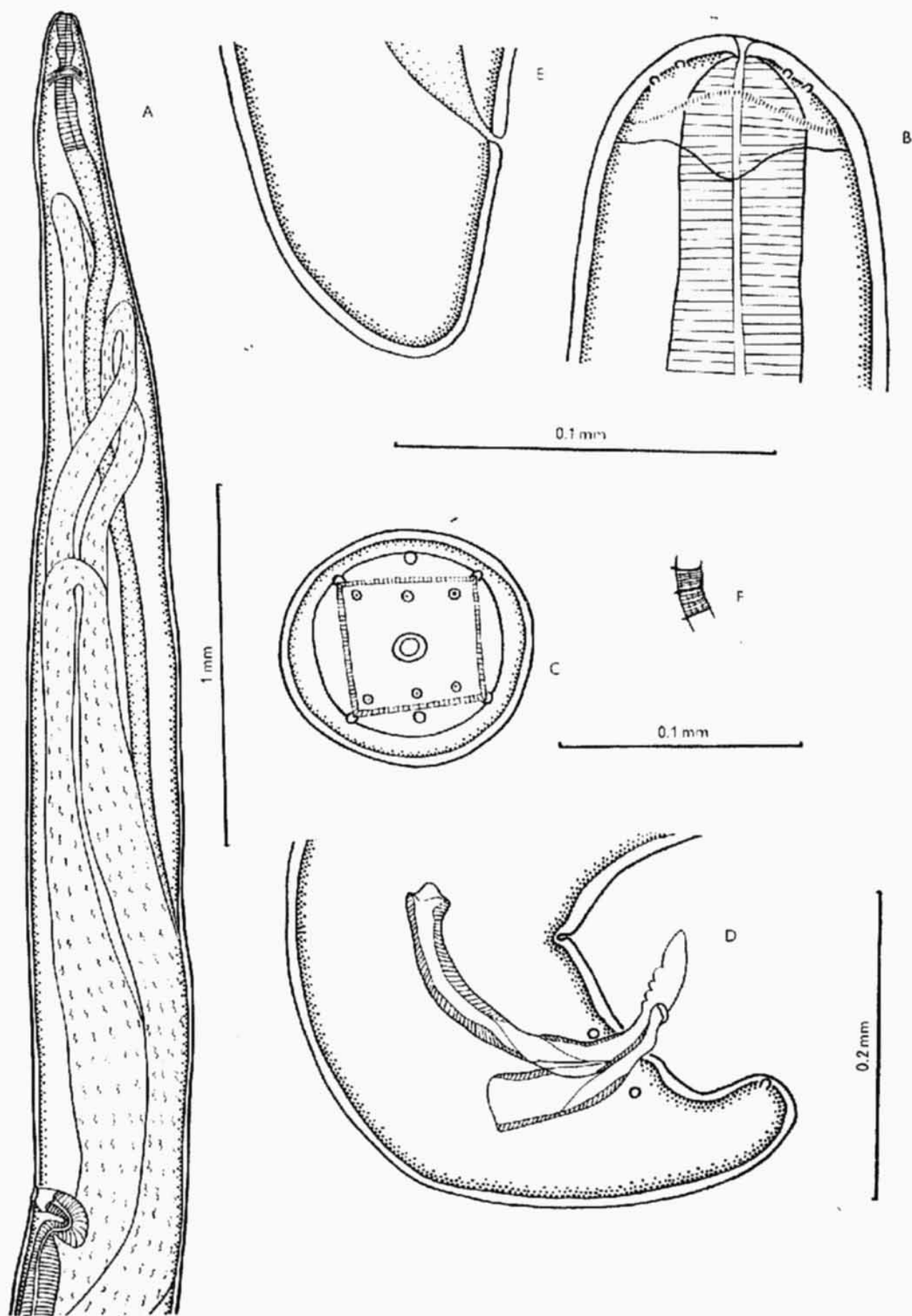


Fig. 1. *Paranchocerca thapari* sp. n. A — Female: Anterior end, lateral view; B — Male: Head end, magnified; C — End-on view; D — Male: Posterior end, lateral view; E — Female: Tail end, lateral view; F — Rugae.

guinisardeae (Leder et Noc, 1921) Chabaud et Biocca, 1951; 4. *P. tonkinensis* (Chow, 1939); 5. *P. rousseloti* Chabaud et Biocca, 1951; 6. *P. mirzai* Ali, 1956; 7. *P. straeleni* Chabaud et Ball, 1964; 8. *P. mansonii* Faust, 1966. The description of *P. sanguinisardeae* is very inadequate and not even supported by a figure. Hence it is not included in the key.

***Paronchocerca thapari* sp. n.**

Fig. 1

Three males and three females of this worm were collected once from *Francolinus francolinus*. The worms were found entangled in the lung tissue.

The worms are cylindrical with attenuated head and tail ends. The cuticle is 9—11 μ thick and bears annular rugae. The rugae are superficial and do not form continuous rings, intercepted at lateral fields. The cuticle is further reinforced by closely set fine transparent striae at intervals of 5—7 μ . In the posterior region, short rod-like cuticular projections are arranged in transverse rows.

The head is slightly globular. The mouth is surrounded by cephalic papillae arranged in two circles, each having two pairs of submedian papillae. The amphids are at the level of the outer circle. The nerve ring surrounds the muscular portion of the oesophagus at 0.14—10.5 mm from the anterior end in the male and 0.15 to 0.18 mm in the female. The oesophagus is short, in the male 1.07—1.34 mm long, in the female 1.47—1.61 mm. The muscular and glandular portions are 0.34 to 0.36 mm and 0.73—0.98 mm long in the male and 0.38—0.46 mm and 1.09—1.15 mm in the female.

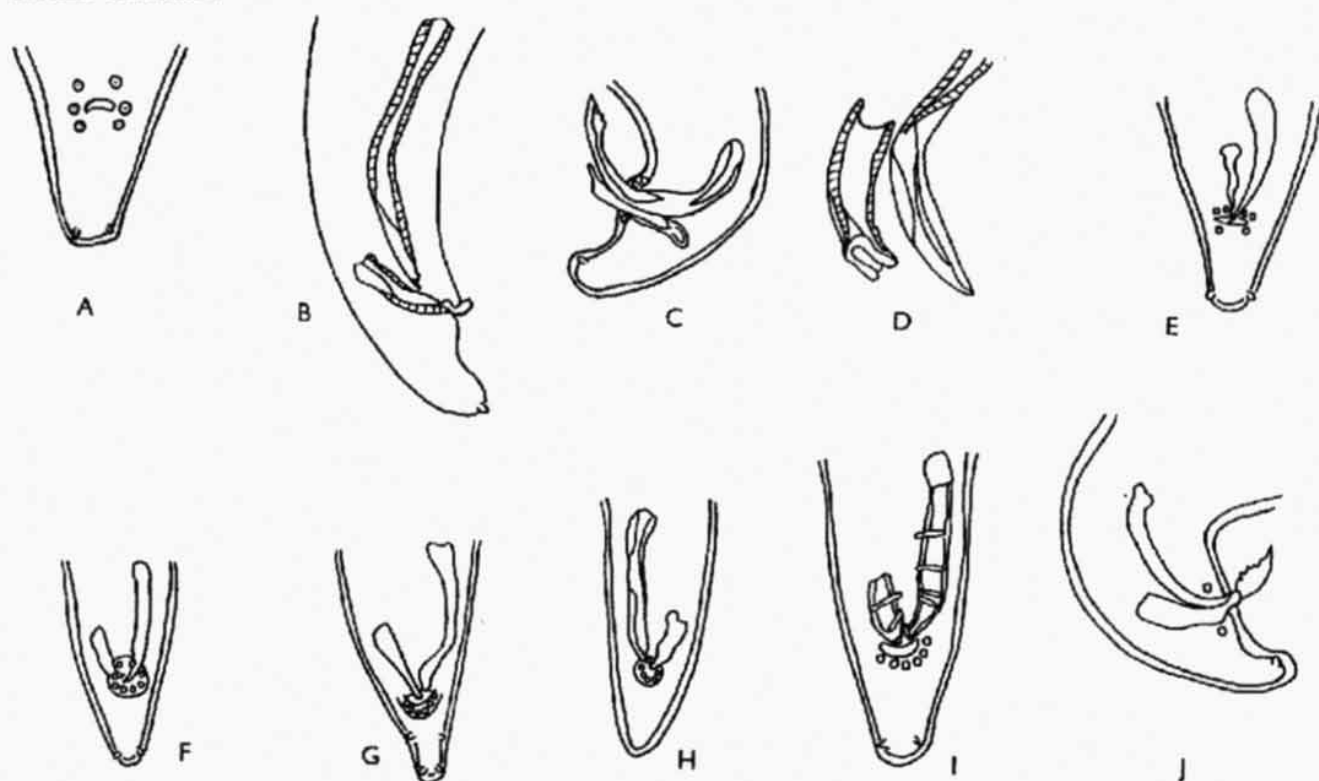


Fig. 2. A, B — *Paronchocerca ciconiarum* Peters, 1936; C, D — *Paronchocerca rousseloti* Chabaud et Biocca, 1951; E — *Paronchocerca mansonii* Faust, 1966; F — *Paronchocerca bambusicolae* (Li, 1933) Peters, 1936; G — *Paronchocerca tonkinensis* (Chow, 1939); H — *Paronchocerca mirzai* Ali, 1956; I — *Paronchocerca straeleni* Chabaud et Ball, 1964; J — *Paronchocerca thapari* sp. n.

Male: The male is half the size of the female, its posterior extremity is very coiled but devoid of caudal alae. The body of the male is 24.26–26.33 mm long and 0.26–0.28 mm wide. The tail is 0.10–0.12 mm long. There are two pairs of caudal papillae. One pair is immediately in front of the cloaca, the other behind it. Another, comparatively smaller, pair of papillae lies near the tip of the tail. The spicules are unequal in length and dissimilar in shape being 0.29–0.31 and 0.12–0.16 mm long. The left spicule is relatively equal in breadth throughout its length with a blade-like proximal end, its anterior margin being serrated. The right spicule has a wide rectangular distal end, its knob-shaped tip being closely preceded by a narrow depression.

Female: The female is twice as long as the male, measuring 50–54 mm in length and 0.37–0.40 mm in width. The tail is 0.13–0.16 mm long, its tip is rounded. The vulva is flush with the body surface and lies at 3.41–3.96 mm from the head end. The vagina runs posteriorly from the vulva and turns into uteri. The uteri

Table 1. Statement as given by FAUST (1966) and emended. (All measurements in mm.)

	<i>P. ciconiarum</i>	<i>P. bambusicolae</i>	<i>P. tonkinensis</i>	<i>P. rousseloti</i>
Body length Male Female	40–41 68–70	31–35 53	29 45.5	28–35 58
Spicules L.S. R.S.	0.34–0.37 0.16–0.17	0.19–0.21 0.14–0.15	0.23 0.14	0.3–0.34 0.14–0.17
Caudal papillae	3 pairs	4 pairs	5 pairs	4 pairs
Position of vulva in body length	4.25–4.70	4	2.4–2.5	4.1
	<i>P. mirzai</i>	<i>P. straeleni</i>	<i>P. mansonii</i>	<i>P. thapari</i> sp. n.
Body length Male Female	24–30 40–48	24 38	17 35.8	24.26–26.33 50–54
Spicules L.S. R.S.	0.23 0.11	0.26 0.11–0.13	0.22 0.16	0.29–0.31 0.12–0.16
Caudal papillae	4 pairs	3 pairs	4 pairs	3 pairs
Position of vulva in body length	3.15–3.5	2.7–3.3	2.0	3.41–3.96

are very coiled and occupy a greater part of the body. The microfilariae are 140 to 145 μ long and 5—6 μ wide.

Discussion: The present species resembles *P. mirzai*, *P. rousseloti*, *P. tonkinensis* and *P. bambusicolae*, as far as the body range is concerned, but differs from them in the number and arrangement of the caudal papillae. In *P. bambusicolae* and *P. mirzai* the four pairs of cloacal papillae are arranged in ring fashion. In *P. tonkinensis* three pairs of papillae are arranged in a semicircle immediately behind the cloaca. In addition to these, two pairs of papillae are found on the tail (Fig. 2). In *P. rousseloti* two pairs of precloacal papillae and one pair of postcloacal papillae are present. There is also one pair of subterminal papillae. As against these the present form has one pair of precloacals, one pair of postcloacals and one pair of subterminal caudal papillae. In addition to these the shape of the spicules in the two species differs markedly as shown in Fig. 2 (D2 and 11). In the present worm the tip of the larger spicule is serrated and the smaller spicule ends in a knob; while in *P. rousseloti* the longer spicule has a sharp pointed knife-blade tip and the tip of the right spicule is bifurcated like a horse-shoe. Thus the two differ markedly. The following table indicates the differences between the various species.

CHABAUD and BALL (1964) reported in *P. straeleni* three pairs of papillae following close behind the cloacal and also precloacal pedunculated papillae. The description is based on two specimens and of these only in one the pedunculated papillae, one on the right and four on the left side were observed. This type of papillae has not yet been recorded from any species of this genus.

In view of these facts, the present form is regarded as new and is named as *Paronchocerca thapari* sp. n. after professor Thapar, G.S. The hosts *Francolinus francolinus* were captured at Aurangabad (Maharashtra). The worms were extracted from the lung tissues.

KEY TO THE SPECIES OF THE GENUS *PARONCHOCERCA* PETERS, 1936

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| 1 Caudal papillae both sessile and pedunculated | <i>P. straeleni</i> Chabaud et Ball, 1964 |
| Caudal papillae sessile only | 2 |
| 2 Precloacal papillae absent | <i>P. tonkinensis</i> (Chow, 1939) |
| Precloacal papillae present | 3 |
| 3 Circumanal papillae four pairs | 4 |
| Circumanal papillae less than four pairs | 5 |
| 4 Spicules 0.19—0.21 mm and 0.14—0.15 mm | |
| | <i>P. bambusicolae</i> (Li, 1933) Peters, 1936 |
| Spicules 0.23 and 0.11 mm. | <i>P. mirzai</i> Ali, 1956 |
| 5 Circumanal papillae two pairs, one pair near the tip of the tail | <i>P. thapari</i> sp. n. |
| Circumanal papillae more than two pairs | 6 |

- 6 Two pairs of precloacal papillae 7
 One pair of precloacal papillae *P. ciconiarum* Peters, 1936
 7 Spicules stout, right spicule forked at tip . . . *P. rousseloti* Chabaud et Biocca, 1951
 Spicules slender right spicule with pointed tip . . . *P. mansonii* Faust, 1966

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