

ON FOUR NEW SPECIES OF AVIAN NEMATODES  
FROM ORISSA, INDIA

By

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INTRODUCTION

In the course of an Avifaunistic Survey in Koraput district, Orissa, during February-March, 1977, the authors came across a number of new species of nematodes. The present paper deals with the descriptions of four new avian nematodes. One each belonging to the genera *Thelazia* (*Thelaziella*) Travassos, 1918, *Oxyspirura* (*Cramispirura*) Skrjabin, 1931, *Ceratospira* Schneider, 1866 and *Squamofilaria* Schmerling, 1925.

SYSTEMATIC ACCOUNT

Order SPIRURIDA

Superfamily THELAZIOIDEA

Family THELAZIIDAE Skrjabin, 1915

Genus 1. *Thelazia* (*Theiaziella*) Travassos, 1918

*Thelazia* (*Thelaziella*) *orissae* n. sp.

One male and three female nematodes were collected from under the nictitating membrane of a bird, the Crested Honey Buzzard, *Pernis ptilorhynchus ruficollis* Lesson. The parasites belong to the family Thelaziidae and the genus *Thelazia* (*Thelaziella*) Travassos, 1918. The present specimens do not agree with any of the known species of the genus *Thelazia* and therefore, a new specific name is proposed to accommodate them.

*Host* : *Pernis ptilorhynchus ruficollis* Lesson

*Location* : Eye

*Locality* : Chitrakonda, Koraput district, Orissa, India,

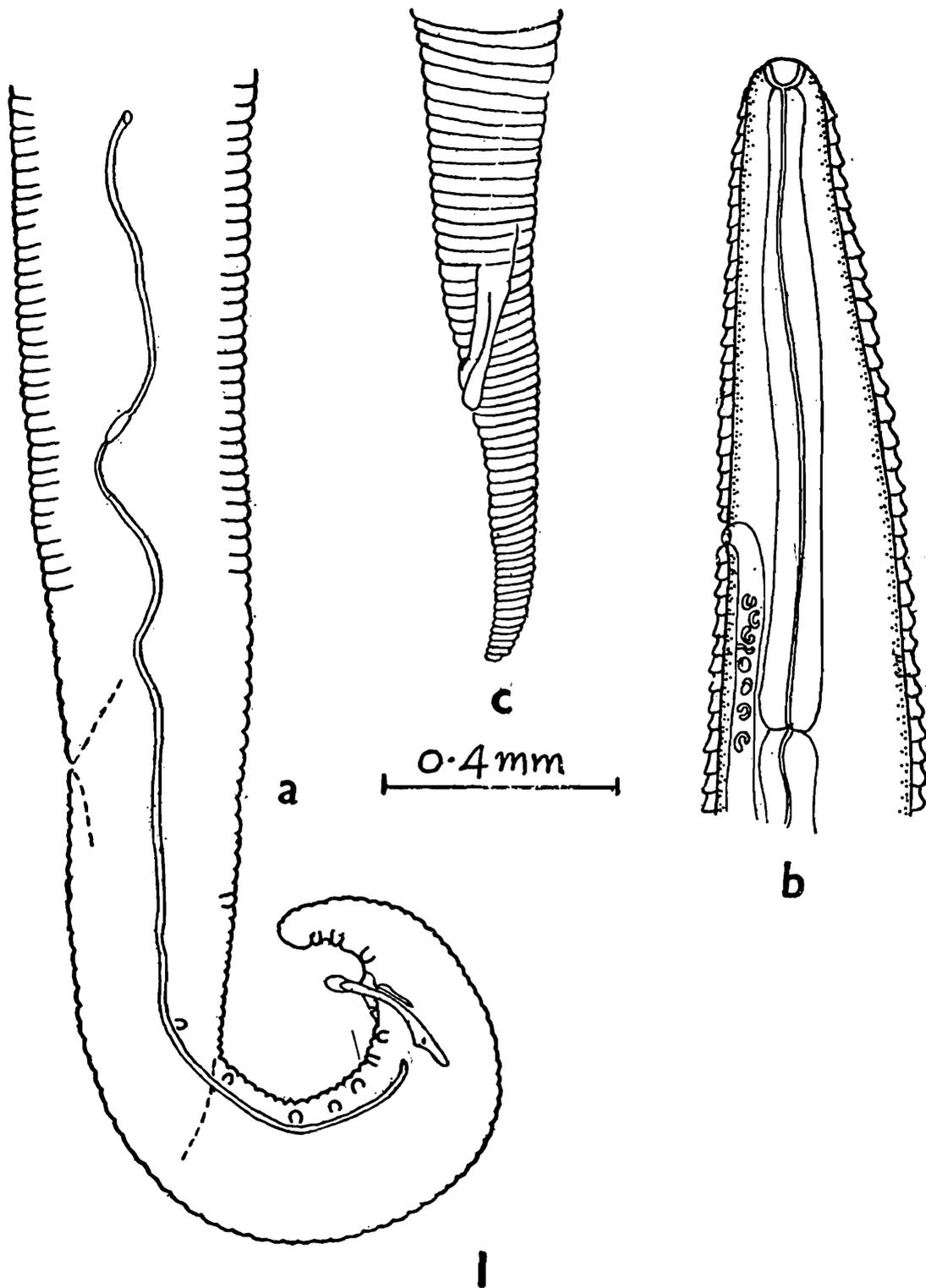


Fig. 1. *Thelazia (Thelaziella) orissae* n. sp. (a) Posterior end of a male, lateral view. (b) Anterior end of a female, lateral view. (c) Posterior end of a female, lateral view.

#### DESCRIPTION

The body is finely striated in transverse direction. Mouth without lips. A small buccal capsule is present. Oesophagus is short.

*Male* : The tail is curved ventrally and bluntly rounded. A very small caudal ala is limited to cloacal region. The number of caudal papillae is 12 pairs, of which three are postanal and nine preanal in position. The spicules are unequal and dissimilar. The right spicule is alate, rounded distally with a bulbular swelling while the left one slender, simple, and pointed, with a slight swelling at a distance 0.54 mm from the proximal end. The gubernaculum is poorly developed.

*Female* : The tail is long, rounded and curved ventrally. The vulva is located in the oesophageal region of the body. The uteri are opposed.

#### AFFINITIES

The present parasite belongs to the genus *Thelazia* (*Thelaziella*) Travassos, 1918, in having mouth without lips, short buccal cavity, two lateral and four submedian cephalic papillae, and moderately short oesophagus. The present parasite does not agree with any other species so far described under the genus *Thelazia* (*Thelaziella*) in the presence of small alae, supported by paired pedunculated papillae.

Specific diagnosis of *Thelazia* (*Thelaziella*) *orissae* : Body with striae, a very small caudal ala limited upto cloaca in male ; unequal and dissimilar spicules ; nine pairs of preanal papillae, eight of them being sessile and one paired pedunculated at the alated region of the cloacal aperture, and three pairs of sessile postanal papillae ; gubernaculum poorly developed. Tail bluntly rounded in both sexes ; vulva on a prominence ; vagina anteriorly directed. Viviparous.

#### Measurements in mm of *Thelazia* (*Thelaziella*) *orissae*

	<i>Male</i> (1 ex)	<i>Female</i> (3 ex)
Length of body	13.50	17.90-20.25
Breadth of body	0.54	0.47-0.49
Length of buccal capsule	0.36	0.027-0.036

	<i>Male</i> (1 ex)	<i>Female</i> (3 ex)
Nerve ring from the tip of the anterior end	0.14	0.18-0.2
Length of oesophagus	1.00	1.03-1.08
Breadth of oesophagus	0.09	
Length of tail	0.14	0.36-0.38
Length of left spicule	1.85	
Length of right spicule	0.13	
Length of gubernaculum	0.063	
Length of ala	0.07	
Vulva from the anterior extremity of the body		0.77
Eggs (length × breadth)		0.036 × 0.018

*Types* : All type specimens are deposited in the National Zoological Collection of India, at the Zoological Survey of India, Calcutta.

*Holotype*, a male, from eye of the bird *Pernis ptilorhynchus ruficollis* ; India : obtained by N. Majumdar from Chitrankonda, Koraput district, Orissa on 16 March, 1977 ; Regd. No. WN 510.

Paratypes, three females, with the same data as for the holotype, Regd. No. WN 511.

## Genus 2. *Ceratospira* Schneider, 1866

### *Ceratospira psittaculæ* n. sp.

Five males and 12 females nematodes were collected from under the nictitating membrane of a bird, the Southern Blossomheaded Parakeet, *Psittacula cyanocephala cyanocephala* (Linnaeus). The parasites belong to the family Thelaziidae and the genus *Ceratospira*. The present specimens do not agree with any of the known species of the genus *Ceratospira* and therefore a new specific name is proposed to accommodate them.

*Host* : *Psittacula cyanocephala cyanocephala* (Linnaeus)

*Location* : Eye

*Locality* : Madpad, Koraput district, India

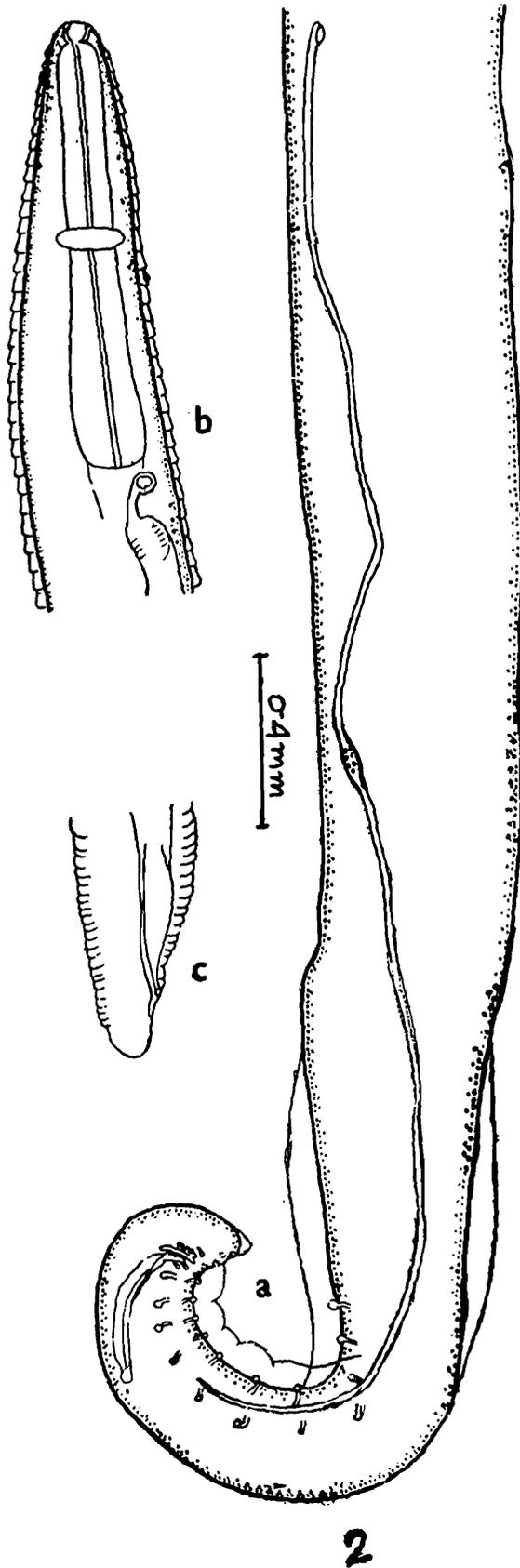


Fig. 2. *Ceratospira psittaculae* n. sp. (a) Posterior end of a male, lateral view. (b) Anterior end of a female, lateral view. (c) Posterior end of a female, lateral view.

## DESCRIPTION

The body is striated in transverse direction. Mouth surrounded by papillae. A short buccal capsule present.

*Male* : The tail short and rounded. The caudal extremity spirally coiled. Caudal alae well developed. Gubernaculum present. Spicules very unequal and dissimilar. The cuticular striations coarse and close together in the oesophageal region, elsewhere less prominent and farther apart.

*Female* : The tail short, straight and rounded. The vulva located in the oesophageal region. The cuticular striations coarse and close together throughout the body. The uteri opposed.

## AFFINITIES

The genus *Ceratospira* was proposed by Schneider in 1866 and its type-species is *Ceratospira vesiculosa*. Since then only five species have been described under this genus. Of the five species so far described the present species differs markedly in various body measurements. The left spicule of *C. vesiculosa* Schneider 1866 and *C. thriponaxis* Wehr, 1930 is 3 mm long, whereas in *C. ophthalmica* (Linstow, 1898) Ranson, 1904, *C. oculata* (Jairajpuri and Siddiqui, 1969), *C. inglisi* Schmidt and Kuntz, 1971, are 0.968 mm, 2.11 mm and 1.64 mm respectively and their spicules ratio in respective of right and left are 1 : 37, 1 : 13.2 and 1 : 85, while the present specimens have right spicules 0.16-0.22 and the left spicules 1.7-2.2 long and the spicules ratio of right and left is 1 : 11. It also differs in number and arrangements of caudal papillae from all the other species under this genus.

Specific diagnosis of *Ceratospira psittaculae* : Body with coarse striae ; caudal alae well developed in male ; spicules very unequal, dissimilar, right spicule boat-shaped, stout, rounded distally ; left one simple, slender, pointed, with a slight swelling at a distance 0.82-0.92 from proximal end. The ratio of the spicule is 1 : 11. Gubernaculum present. Caudal extremity spirally coiled. Nine to ten pairs of pedunculated preanal, two pairs pedunculated adanal, three pairs

sessile and two pairs pedunculated, post anal papillae present and symmetrical in position. Vulva near the posterior end of oesophagus.

Measurements in mm of *Ceratospira psittaculae*

	Male (5 ex)	Female (12 ex)
Length of body	9.30-12.4	12.30-12.60
Breadth of body	0.25-0.33	0.27-0.31
Length of buccal capsule	0.018	0.018
Breadth of buccal capsule	0.045	0.036
Nerve ring from the tip of the anterior end	0.23	0.27
Length of oesophagus	0.49-0.54	0.49-0.54
Breadth of oesophagus	0.054-0.077	0.06
Length of tail	0.027-0.063	0.072
Length of left spicule	1.7-2.2	
Length of right spicule	0.16-0.77	
Length of gubernaculum	0.036-0.095	
Length of caudal alae	0.54	
Vulva from the anterior extremity of the body		0.51-0.58
Eggs (length × breadth)		0.036 × 0.018

*Types* : All type specimens are deposited in the National Zoological Collection of India, at the Zoological Survey of India, Calcutta.

Holotype, a male, from eye of the bird, *Psittacula cyanocephala cyanocephala* (Linnaeus); India: obtained by N. Majumdar from Madpad, Koraput district, Orissa on 19 February 1977, Regd. No. WN 512.

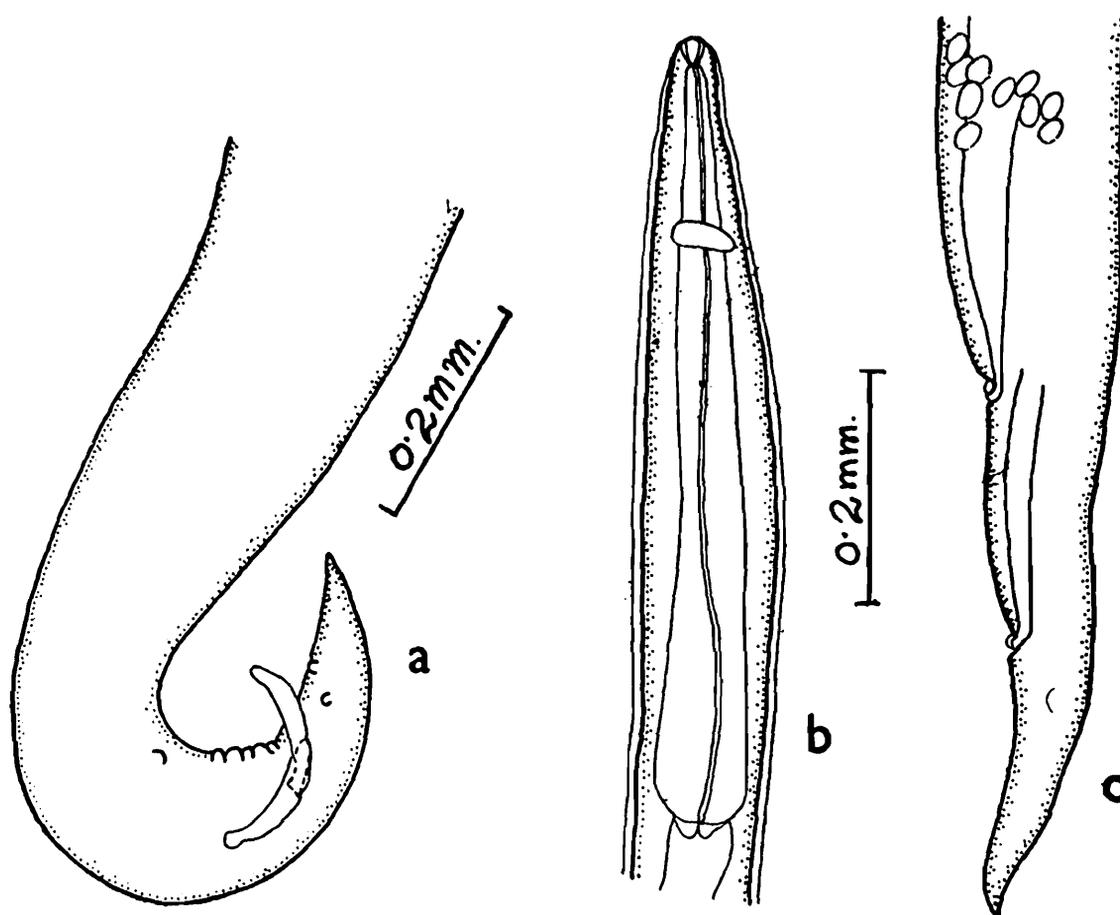
Paratypes, 4 males and 12 females, with the same data as for the holotype, Regd. No. WN 513.

Genus 3. *Oxyspirura* Drasche in Stossich, 1897

Subgenus *Oxyspirura* (*Gramispirura*) Skrjabin, 1931

*Oxyspirura* (*Cramispirura*) *rhpidurae* n. sp.

A single male and a single female nematode specimens were collected from under the nictitating membrane of a



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Fig. 3. *Oxyspirura* (*Cramispirura*) *rhpidurae* n. sp. (a) Posterior end of a male, lateral view. (b) Anterior end of a female, lateral view, (c) Posterior end of a female, lateral view.

bird, the Orissa Whitethroated Fantail Flycatcher, *Rhipidura albicollis orissae* Ripley. The parasites belong to the family Thalaziidae and the genus *Oxyspirura* Drasche 1897. The present specimens do not agree with the descriptions of any of the known species of the genus *Oxyspirura* and therefore, a new specific name is proposed to accomodate them.

*Host* : *Rhipidura albicollis orissae* Ripley.

*Location* : Eye

*Locality* : Govindapalle, Koraput district, Orissa.

#### DESCRIPTION

The body finely striated in transverse direction. The mouth surrounded by papillae. The proximal end is pointed and conical.

*Male* : Spicules equal and similar. A narrow cervical alae present. Four pairs of preanal and two pairs postanal papillae present.

*Female* : Vulva in the posterior end.

#### AFFINITIES

The present form described above comes closure to *Oxyspirura (Cramispirura) properoi* (Skrjabin, 1929), Skrjabin, 1931, in shape of spicule but differs slightly in the size of spicule and in the number and arrangement of caudal papillae.

*Specific diagnosis* : *Oxyspirura (Cramispirura) rhipidurae* n. sp. Body with fine striae. A narrow cervical alae present in male. Spicules equal, similar, boat-shaped. Six pairs of caudal papillae of which four pairs preanal and two pairs postanal. Vulva is in the posterior end.

Measurements in mm of *Oxyspirura (Cramispirura) rhipidurae* n. sp.

	Male (1 ex)	Female (1 ex)
Length of body	4.8	8.55
Breadth of body	3.15	0.2
Length of buccal capsule	0.022	0.025
Nerve ring from the tip of the anterior end	0.13	0.16
Length of oesophagus	0.58	0.63
Breadth of oesophagus	0.072	0.063

	Male (1 ex)	Female (1 ex)
Length of tail	0.14	0.2
Length of spicules	0.099	
Vulva from the posterior extremity of the body		0.376
Eggs (length × breadth)		0.027 × 0.018

*Types* : All type specimens are deposited in the National Zoological Collection of India, at the Zoological Survey of India, Calcutta.

Holotype, a male, from eye of the bird, *Rhipidura albicollis orissae* Ripley : India : obtained by N. Majumdar from Govindapalle, Koraput district, Orissa, on 27 February 1977 ; Regd. No. WN 514.

Paratype, a female, with the same data as for holotype, Regd. No. WN 515.

#### Order SPIRURIDA

#### Superfamily FILARIOIDEA

#### Family FILARIIDAE (Wemland, 1858)

Cobbold, 1879

#### Genus *Squamofilaria* Schmerling, 1925

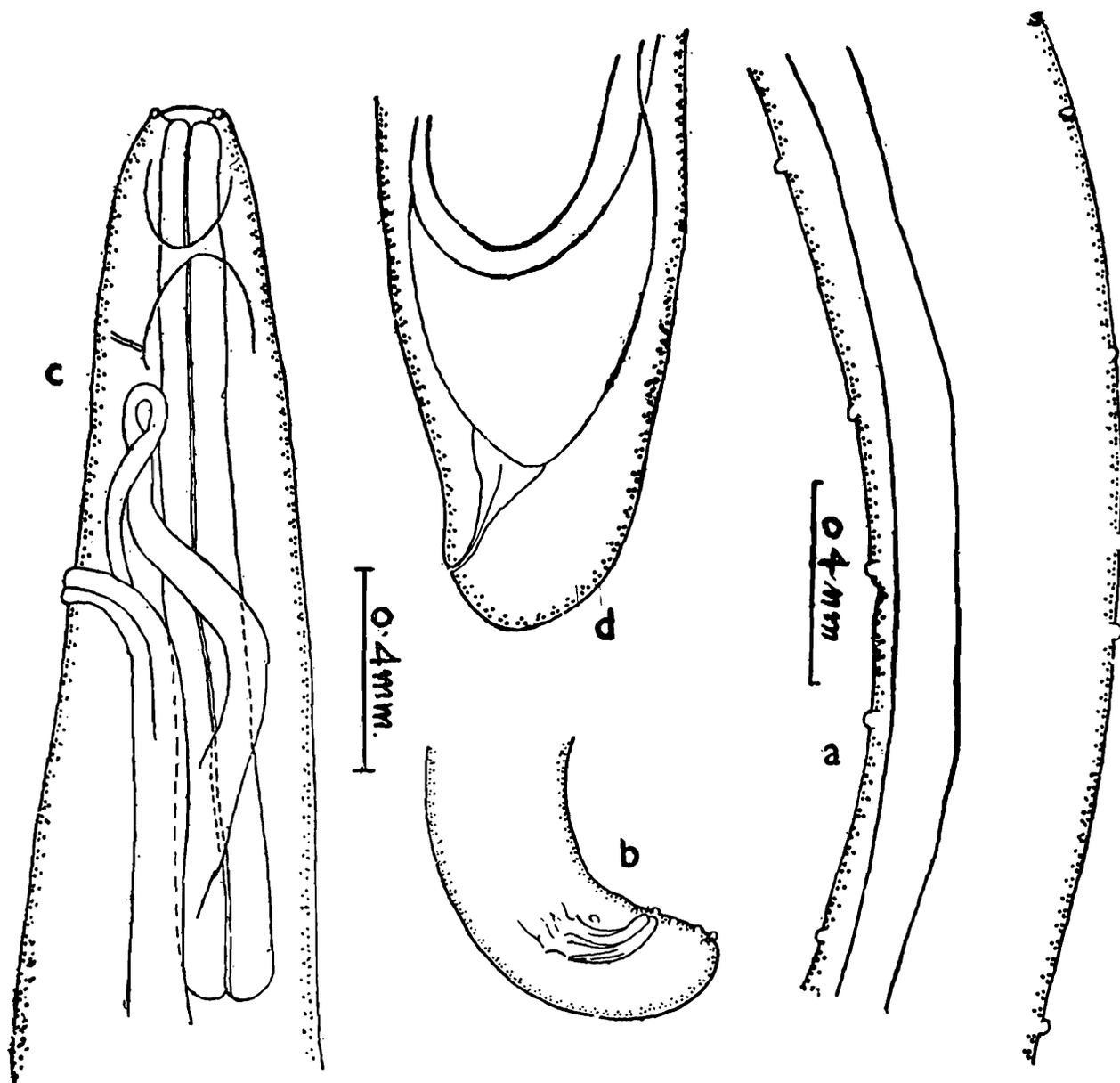
#### *Squamofilaria oriolae* n. sp.

Three males and four females specimens were collected from coelomic cavity from a bird, the South Indian Black-headed Oriole, *Oriolus xanthornus maderaspatanus* Franklin. The parasites belong to the family Filariidae and the genus *Squamofilaria* Schmerling, 1925. The present specimens do not agree with any of the known species of the genus *Squamofilaria* and therefore a new specific name is proposed to accomodate them.

*Host* : *Oriolus xanthornus maderaspatanus* Franklin.

*Location* : Coelomic cavity.

*Locality* : Madpad, Koraput district, Orissa.



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Fig. 4. *Squamofilaria oriolae* n. sp. (a) Middle portion of the body of a male, lateral view. (b) Posterior end of a male, lateral view. (c) Anterior end of a female, ventral view. (d) Posterior end of a female, lateral view.

#### DESCRIPTION

The cuticle thick and devoid of transverse striation. Tail short and round. Oesophagus cylindrical and undivided.

*Male* : Spicules short, equal, rounded distally and massive in the proximal end. Five pairs of sessile caudal

papillae, of which two pairs preanal, three pairs postanal and a single sessile median papilla just in front of the cloaca present.

*Female* : Vulva in the anterior end, tail round.

#### AFFINITIES

The present species belongs to the genus *Squamofilaria* Schmerling, 1925. The specimens come very close to *Squamofilaria sici* (Strachan, 1957) in various body measurements but differ from it in the number and arrangement of caudal papillae and also in the size of the spicules.

Specific diagnosis of *Squamofilaria oriolae* : Body devoid transverse striation. Oesophagus cylindrical, undivided. Buccal capsule small. Tail short and round. Posterior extremity spirally coiled in male. Spicules equal, short, rounded distally and massive in the proximal end. Two pairs of preanal, three pairs of postanal and a single sessile median papilla just in front of the cloaca present. Some small insignificant papillae scattered irregularly, especially about the middle portion of the body of the male. These are less prominent in the body of female. Vulva in the anterior end.

#### *Measurements in mm of Squamofilaria oriolae*

	<i>Male</i> (3 ex)	<i>Female</i> (4 ex)
Length of body	12.65-14.85	36.02-40.01
Breadth of body	0.33-0.44	0.60-0.66
Length of oesophagus	1.04-1.1	1.1-1.43
Breadth of oesophagus	0.38-0.44	0.110-0.131
Length of buccal capsule	0.022	0.033
Nerve ring from the tip of the anterior end	0.20-0.22	0.20-0.22
Excretory pore from anterior end	0.33	0.33

	<i>Male</i> (3 ex)	<i>Female</i> (4 ex)
Length of tail	0.09-0.1	0.08-0.11
Length of spicules	0.19-0.20	
Valva from the anterior end		0.50-0.77
Eggs (length × breadth)		0.077 × 0.33-0.044

*Types* : All type specimens are deposited in the National Zoological Collection of India, at the Zoological Survey of India, Calcutta.

Holotype, a male, from coelomic cavity of the bird, *Oriolus xanthornus maderaspatanus* Franklin. India : obtained by N. Majumdar from Madpad, Koraput district, Orissa on 18 February 1977 ; Regd. No. WN 516.

Paratypes, two males and four females, with the same data for the holotype, Regd. No. WN 517.

#### ACKNOWLEDGEMENTS

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