

SHORT COMMUNICATIONS

STUDIES ON A NEW SPECIES OF SYPHACIELLA MÖNNIG, 1924 (SYPHACIELLINEAE: NEMATODA) WITH A KEY TO THE SPECIES

T. S. V. NAIDU and V. K. THAKARE

Department of Zoology, Nagpur University, Nagpur

Abstract. The present studies report a new species of nematode parasite *Syphaciella nagpurensis* sp. n. from *Pterocles exustus* (Temminck) and *Pterocles indicus* (Gmelin) of Nagpur and Gondkheri village, respectively; Maharashtra State, India. A key to the species of the genus *Syphaciella* Mönnig, 1924 is given.

The genus *Syphaciella* was erected by Mönnig (1924) to accommodate his species *Syphaciella capensis* from *Pterocles bicinctus* and *Pterocles namaqua* from Transvaal. This species was later recorded from *P. arenarius* in the U.S.S.R. (Boev 1939). Mönnig (1924) placed *Syphaciella capensis* in the subfamily Oxyurinae. Travassos (1925) placed the genus *Syphaciella* to the family Cosmocercidae and Skryabin and Shikhalova (1951) proposed a new subfamily Syphaciellinae for this genus. To this genus a second species was added by Maplestone (1931), namely *S. indica* from the intestine of *Pterocles exustus* from Calcutta, India. A third species was described by Akhtar (1955) from *Pterocles exustus* collected from Lahore Zoological Garden of Pakistan. Khalil (1963) added fourth species *S. sudanica* from the caecum of sandgrouse *Pterocles senegallus* from Sudan. A fifth species *S. madagascariensis*, was described by Vassiliades (1970) from caecum and intestine of *Pterocles personatus* from Madagascar.

Syphaciella nagpurensis sp. n.

Fig. 1

Seven *Pterocles exustus* (Temminck) from Nagpur and five *Pterocles indicus* (Gmelin) from Gondkheri village of Maharashtra State, India, were collected for the studies of nematode infestation. Numerous (more than one hundred) male and female specimens were recovered from the caeca and intestine of these hosts.

The worms are small, thin and transparent. The cuticle is transversely striated. The cervical alae (c.a.) are divided transversely in the middle and their posterior part is striated. The lateral alae follow the cervical alae and extend beyond the bulb (b). The mouth is surrounded by three bilobed lips, one dorsal and two subventral. Each lip bears two internal papillae (h.P) and dorsal lip with two external papillae while subventral with one external papilla. A pair of amphids are also observed. The mouth opens into a small vestibule containing two pairs of triangular teeth (dt) originating from the anterior end of the oesophagus. The oesophagus possesses a bulb, separated by a constriction from the cylindrical anterior part of the oesophagus. The length of oesophagus is 0.42—0.53 mm in male, 0.61—0.64 mm in female. The bulb contains valves. The nerve ring (n.r) is situated behind the cervical alae, 0.15—0.16 mm from the anterior end in male and 0.17—0.18 mm in female.

Male: The males (n = 20) are 3.780—4.130 mm long and 0.015—0.195 mm wide.

The bulb of oesophagus (oes) is 0.074—0.090 mm in diameter. The caudal alae (cau.a) become posteriorly narrow and striated, the tip of the tail being free. There are 7—9 caudal papillae, 2—4 precloacal, 5 postcloacal, in position. The two postcloacal papillae are pedunculated (P.P), and three including one median are sessile (s.P). The two spicules (sP) are equal and 0.090—0.105 mm in length. The gubernaculum (g) measures 0.030 to 0.036 mm in length. The length of the tail is 0.195—0.210 mm. The cloaca possesses cloacal lips (cl.l).

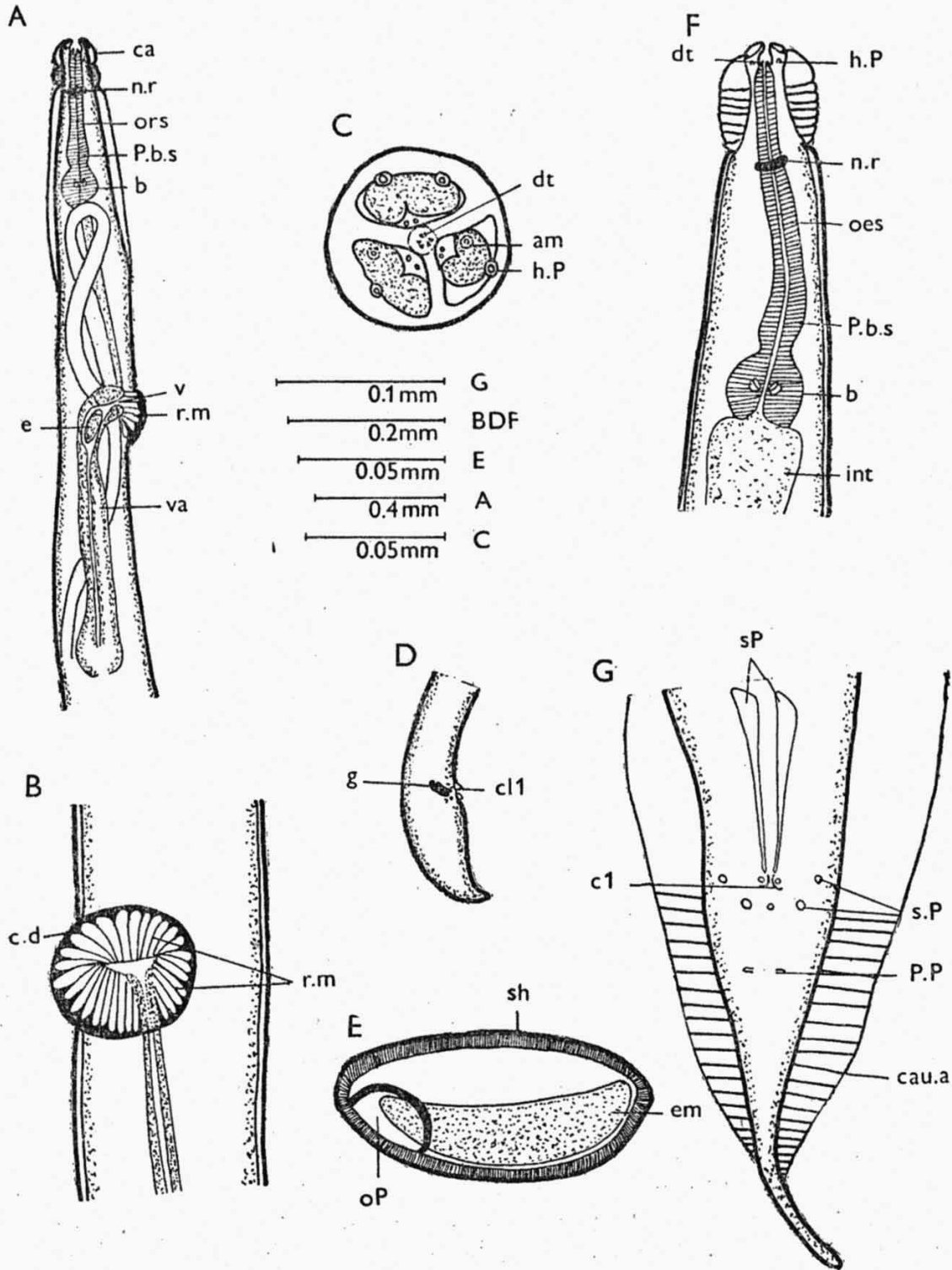


Fig. 1. *Syphaciella nagpurensis* sp. n. A — Female: Anterior end, dorsolateral view. B — Female: Vulva, ventral view, C — End-on view, D — Male: Posterior end, lateral view, E — Egg. F — Female: Anterior end, dorsal view, G — Male: Posterior end, ventral view. (Explanation see text).

Female: The females ($n = 20$) are 5.620—6.860 mm long and 0.015—0.210 mm wide. The bulb of oesophagus is 0.090—0.150 mm in diameter. The vulva (v) is surrounded by a cuticular disc provided with radial muscles (r.m.) serving as sphincter. The vulva is situated 1.17—1.35 mm from the anterior end. The tail length is 0.675—1.035 mm. The eggs measure $0.075\text{—}0.105 \times 0.037\text{—}0.045$ mm in size. The eggs are slightly flattened on one side and have a plug (oP) at one end. The shell (sh) is uniformly thick and striated. The eggs contain larvae.

The present form is referred to the genus *Syphaciella* Mönnig, 1924. It differs from all known species in having seven to nine caudal papillae (two to four precloacal, two postcloacal, two pedunculated and one median), with cloacal lips and vulva on a cuticular disc (c.d) provided with radial muscles (r.m.). The cervical alae are divided transversely in the middle and their posterior part is striated. The caudal ala is also striated. The gubernaculum and eggs are smaller than the other species. Accordingly, it is regarded as a new species, *Syphaciella nagpurensis* sp.n.

Type specimens are deposited in the museum of Department of Zoology, Nagpur University, Nagpur, India.

Collection No. B6, Male — M 1 — M 20, Female — FM 1 — FM 20.

KEY TO THE SPECIES OF THE GENUS *SYPHACIELLA* MÖNNIG, 1924

1. Cervical alae undivided 2
 - Cervical alae divided 3
 2. Six to ten cloacal papillae (one papilla postcloacal double median) *S. madagascariensis* Vassiliades, 1970
 - Eleven to thirteen cloacal papillae *S. capensis* Mönnig, 1924
 - Eight papillae away from cloaca *S. indica* Maplestone, 1931
 3. Eight papillae close to cloaca (two median papillae unequal) cervical alae unstriated *S. sudanica* Khalil, 1963
 - Seven to nine papillae close to cloaca (median papilla single) posterior part of cervical alae striated *S. nagpurensis* sp. n.
- Due to nonavailability of the original reference *S. pakistanica* Akhtar, 1955 is not included in the key.

ИЗУЧЕНИЕ НОВОГО ВИДА *SYPHACIELLA* MÖNNIG, 1924 (SYPHACIELLINAЕ: NEMATODA) И ТАБЛИЦА ДЛЯ ОПРЕДЕЛЕНИЯ ВИДОВ

Т. С. В. Нанду и В. К. Такар

Резюме. Описан новый вид нематоды *Syphaciella nagpurensis* sp. n. от *Pterocles exustus* (Temminck) и *Pterocles indicus* (Gmelin) из деревен Нагпур и Гондкери (Магараштра, Индия). Приведена таблица для определения видов рода *Syphaciella* Mönnig, 1924.

REFERENCES

- AKHTAR S. A., A new nematode parasite of the sandgrouse. Pakistan J. Sci. Res. 7: 57—59, 1955.
- BOEV S. N., To the characteristic of *Syphaciella capensis* Mönnig. Izv. Kazakh. fil. AN SSSR No 1: 117—120, 1939. (In Russian.)
- KHALIL L. F., On some nematodes from the Sudan with the description of a new species. J. Helminthol. 3: 221—234, 1963.
- MAPLESTONE P. A., Parasitic nematodes obtained from animals dying in the Calcutta Zoological Garden. Part 4—8. Rec. Ind. Mus., Calcutta 33: 71—171, 1931.
- MÖNNIG H. O., On some south African parasitic nematodes. Trans. R. Soc. S. Afr. 11: 105, 1924.
- SKRYABIN K. I., SHIKHOBALOVA N. P., MOZGOVOY A. A., Opredelitel paraziticheskikh nematod. (Key to parasitic nematodes.) Vol. 2: Oxyurata and Ascaridata. Izd. AN SSSR, Moskva, 1951. (In Russian.)
- TRAVASSOS L., Contribuicoes para o conhe-

cimento da fauna helmintologica brasileira. 18. Sobre as especies brasileiras do genero *Gnathostoma* Owen, 1836. Sc. Med. 3: 508—517, 1925.

VASSILIADES G., Nematode parasites d'oiseaux malgaches. Ann. Parasit. Hum. Comp. 1: 47—88, 1970.

YAMAGUTI S., Systema Helminthum. Vol. 3 Part I and II. Interscience Publishers Ltd. London, 1961.

YORKE W., MAPLESTONE P. A., The nematode parasites of vertebrates. London. 1926.

Received 28 August 1978.

T. S. V. N., Department of Zoology, Nagpur University, Nagpur, India

FOLIA PARASITOLOGICA (PRAHA) 26: 376, 1979.

E. Scholtyssek: Fine Structure of Parasitic Protozoa. An Atlas of Micrographs, Drawings and Diagrams. Springer-Verlag, Berlin—Heidelberg—New York 1979, 206 pp., 26 text-figures, 80 electron micrographs each explained in a corresponding line drawing. Price 80.— DM.

This atlas introduces the interested reader to the amazing complexity of the cell organization in parasitic protozoans with their unparalleled structural adaptations to the parasitic way of life. The book is the first of its kind not only because it is focused completely on parasitic protozoa only but also in its interesting idea to confront the reader with both the original electron micrograph and its schematized line-drawn reproduction. This also greatly helps to learn the art how to interpret the electron micrographs in general, an invaluable thing for the beginning electron microscopist.

Prof. Scholtyssek is to be congratulated for the courage with which he undertook this venture; in view of the immense amount of data on the ultrastructure of parasitic protozoa, he had necessarily to select what to include and what to omit in order to keep the look within reasonable size limit. He centered his attention on Apicomplexa, an area in which he is an authority and which is of great interest in many respects. However, an informative survey is also given on parasitic flagellates with examples of trypanosomes and of trichomonadids, on *Entamoeba* as representative of the rhizopods, on *Nosema* and *Pleistophora* as examples of micro-

sporidians and two pictures are given of *Pneumocystis*. Out of the total of 80 electron micrographs, 67 depict the representatives of Apicomplexa (including 3 pictures of gregarines, 49 of the order Coccidia out of which 7 micrographs are of haemosporidians and 14 pictures of piroplasmans).

The book opens with a survey of protozoan classification followed by an introductory chapter on the salient features of the fine structure in the protozoa to be demonstrated with more detailed emphasis on developmental stages of the apicomplexans. In a succinct way, the author mentions also the life cycles and explains some of the nomenclatural problems. The chapter is supplemented by instructive diagrams to show the organization of the whole protozoan cells compiled from the numerous electron micrographs. The bulk part of the book is represented by the electron micrographs with very detailed legends.

The book is to be recommended to all students of protozoans ultrastructure, parasitologists and cytologists in general, it is instructive and stimulative.

Dr. J. Lom, D.Sc.