

***Camallanus polypteri* n. sp. (Nematoda: Camallanidae) in freshwater fishes from Burkina Faso**

G.B. KABRÉ¹ and A.J. PETTER²

ABSTRACT

KABRÉ, G.B. & PETTER, A.J. 1997. *Camallanus polypteri* n. sp. (Nematoda: Camallanidae) in freshwater fishes from Burkina Faso. *Onderstepoort Journal of Veterinary Research*, 64:33–37

Camallanus polypteri n. sp. is described from *Polypterus bichir* (type host), *Synodontis schall* and *Clarias anguillaris* in Lake Tingrela, Burkina Faso. It differs from the other African species of the subfamily Camallaninae parasitizing freshwater fishes, in that it lacks tridents. All species of the subfamily Camallaninae that lack tridents differ from the new species by at least one of the two following characters: a greater number of longitudinal ridges on the inner surface of the buccal capsule; and a muscular oesophagus shorter than the glandular oesophagus. In accordance with the classification of Petter (1979), the new species is placed in the genus *Camallanus* Railliet & Henry, 1915, owing to the length of the posterior chamber of the buccal capsule, which is less than one third of the length of the anterior chamber.

Keywords: Burkina Faso, *Camallanus polypteri*, freshwater fishes, Nematoda: Camallanidae, tridents

INTRODUCTION

The nematode fauna of African freshwater fishes are only partly known, and little work has been done on these fauna in West Africa. This paper provides the description of a new species of the genus *Camallanus* Railliet & Henry, 1915, recovered during a study of the parasites of fishes from Lake Tingrela, Burkina Faso, carried out by the first author from January 1995 to June 1996. The genus *Camallanus* includes many species parasitizing mainly marine and freshwater fishes, all over the world. The new species is the fourth species described from African freshwater fishes.

MATERIALS AND METHODS

Nematodes were fixed in hot 70% alcohol and preserved in 70% alcohol. Measurements, made after

fixation and clearing in lactophenol, are in μm , except for the length of body and the distance from the anterior extremity to the vulva, which are in mm.

Specimens are deposited in the collections of the Laboratoire de Biologie Parasitaire, Museum National d'Histoire Naturelle, Paris (MNHN).

DESCRIPTION OF *CAMALLANUS POLYPTERI* N. SP.

Material

TYPE SPECIMENS: Male holotype, female allotype and two male paratypes, No. MNHN 400 BF

TYPE HOST: *Polypterus bichir* (Boulenger, 1907) (Polypteridae)

SITE: Intestine

TYPE LOCALITY: Lake Tingrela, Burkina Faso, collected 4 March 1996

OTHER MATERIAL: Two males and two females, No. MNHN 399 BF, from *Polypterus bichir*, collected 10 August 1995. Two males, No. MNHN 402 BF

¹ Faculté des Sciences et Techniques, Université de Ouagadougou, 03 B.P. 7021 Ouagadougou, Burkina Faso et Laboratoire de Parasitologie et Immunologie, Université Montpellier II, Sciences et Techniques du Languedoc, 34095 Montpellier Cedex 5, France

² Museum National d'Histoire Naturelle, Laboratoire de Biologie Parasitaire, 61, rue Buffon, 75231 Paris Cedex 05, France

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from *Synodontis schall* (Bloch-Schneider, 1901) (Mochocidae), collected 10 August 1995. One female, two anterior portions and one female posterior portion No. MNHN 403 BF from *Clarias anguillaris* (Linnaeus, 1762) (Clariidae), collected 10 June 1995.

Description

Body small and slender. Cuticle thin, transversely striated. Lateral valves of buccal capsule with smooth internal longitudinal ridges. Number of ridges on each valve: 8–14 in males, 8–9 in females. Some ridges very short, confined to the anterior part of valves. Four sclerotized plates on external surface of valves, near their anterior margin. Basal ring moderately developed, its length more than one quarter and less than one third of length of valves. Two small, weakly sclerotized formations present dorsally and ventrally, in place of tridents. Muscular oesophagus longer than glandular oesophagus. Excretory pore at level of middle of muscular oesophagus. Deirids very thin, slightly anterior to nerve ring.

Males (Fig. 1–5)

Tail bifid. Caudal alae present. Seven pairs of pedunculate pre-cloacal papillae, two pairs of sessile ad-cloacal papillae flanking cloacal opening, six pairs of pedunculate post-cloacal papillae: one anterior group of two pairs, one further group of three pairs and one isolated posterior pair. Spicules unequal, simple.

Females (Fig. 6–11)

Tail long, with three spikes at tip. Vulva equatorial or slightly post equatorial, with prominent anterior lip. Ovejektor directed posteriorly. Uterus containing larvae.

Measurements

Males (seven specimens) (holotype, range, mean in parentheses): length 2,95; 2,20–3,75 (2,98); maximum width 90; 80–100 (87). Buccal capsule: length 50; 45–52 (49); maximum width 52; 50–60 (53,2). Basal ring: length 16; 12–16 (13,7); width 42; 40–43 (40,7). Muscular oesophagus: 340; 300–375 (340,7). Glandular oesophagus: 290; 250–300 (278,5). Distance of nerve ring from anterior end: 150; 130–155 (146,4). Distance of deirids from anterior end: 132; 110–142 (127). Distance of excretory pore from anterior end: 250; 235–270 (257,5). Tail: 60; 50–90 (67,8). Left spicule: 46; 32–48 (43,2). Right spicule: 80; 65–80 (74,1).

Females (four specimens) (allotype, range, mean in parentheses): length 5,10; 5,10–6,87 (5,92); maximum width 160; 100–160 (137,5). Buccal capsule:

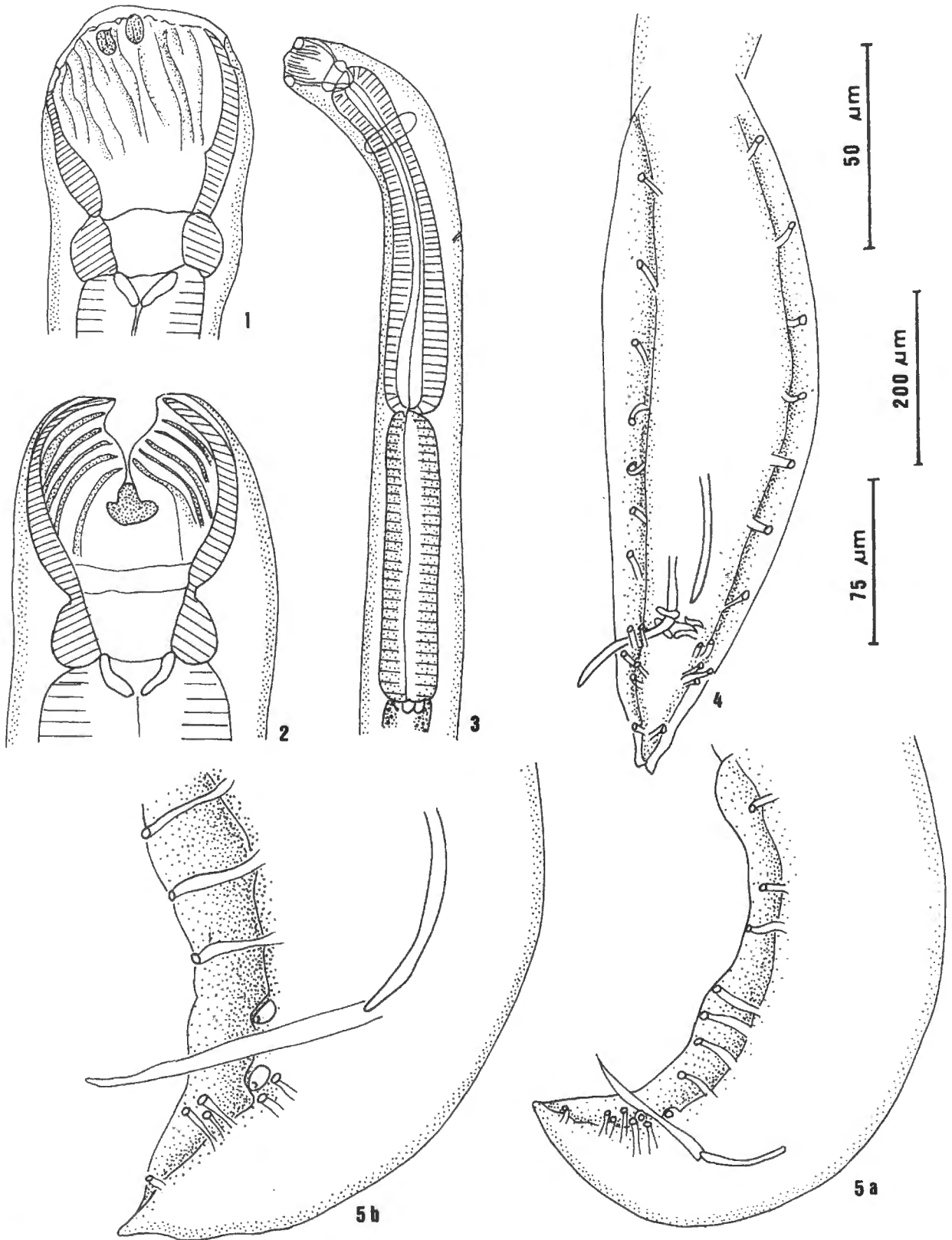
length 68; 62–68 (64,2); maximum width 70; 70–80 (75). Basal ring: length 20; 17–20 (19,2); width 55; 55–80 (62,7). Muscular oesophagus: 450; 440–780 (452,5). Glandular oesophagus: 400; 310–440 (385). Distance of nerve ring from anterior end: 200; 180–215 (198,7). Distance of deirids from anterior end: 178; 150–180 (169,5). Distance of excretory pore from anterior end: 340; 340–350 (343,3). Tail: 120; 110–150 (132,5). Distance of vulva from anterior end: 2,70; 2,70–3,40 (3,11).

DISCUSSION

Three species of the subfamily Camallaninae have been described from African fishes: *Camallanus kirandensis* Baylis, 1928, *Camallanus ctenopomae* Vassiliades & Petter, 1972 and *Camallanus longicaudatus* Moravec, 1973 (Vassiliades & Petter 1972; Moravec 1973; Amin 1978). These species differ from our specimens by the presence of well-developed tridents.

If the numerous synonymies that have been established are taken into account, there are, to our knowledge, 14 species in the subfamily Camallaninae that lack tridents. These species have been placed, depending on the authors, in the genera *Camallanus*, *Paracamallanus*, *Neocamallanus* and *Neoparacamallanus* (for the descriptions of the species and the synonymies, see Petter 1979; Soota 1983; Siddiqi & Khattak 1984; Moravec & Sey 1988; Gupta & Masoodi 1988; Moravec & Scholz 1991; De & Maiti 1995). All these species parasitize freshwater fishes from the Oriental Region, and differ from the new species in having a greater number of longitudinal ridges on the inner wall of the buccal capsule, and a muscular oesophagus that is shorter than the glandular oesophagus, or in at least one of these two characters. All but four of these species differ from our specimens in having a wider basal ring, the length of which is more than a third of the length of the valves. The four species that have a basal ring less than one third of the length of the valves, differ from the new species in having other characters in addition to those mentioned above: *Camallanus kulasirii* (Yeh 1960) has beaded longitudinal ridges, *Camallanus atridentus* Khara, 1974 has a ring of fine teeth at the base of the buccal capsule, in *Camallanus xenentodoni* Khan & Yaseen, 1969, the longitudinal ridges appear to be confined to the anterior margin of the buccal capsule in lateral view, and in *Camallanus salmonae* Chakravarty, 1942, known from females and insufficiently described, the tip of the tail is rounded without spikes.

Some confusion exists concerning the nomenclature of the species of the subfamily Camallaninae that lack tridents. Ali (1957) created the genus *Neocamallanus* for these species. The genus was later synonymized with the genera *Camallanus* by Yeh



50 μm

200 μm

75 μm

FIG. 1–5 *Camallanus polypteri* n. sp., male

FIG. 1 Lateral view of the head

FIG. 2 Median view of the head

FIG. 3 Lateral view of the anterior part

Scale bars = Fig. 1, 2, 5b: 50 μm ; Fig. 4, 5a: 75 μm ; Fig. 3: 200 μm

FIG. 4 Ventral view of the posterior part

FIG. 5 Lateral views of the posterior part:

(a) general view; (b) detail of the posterior extremity

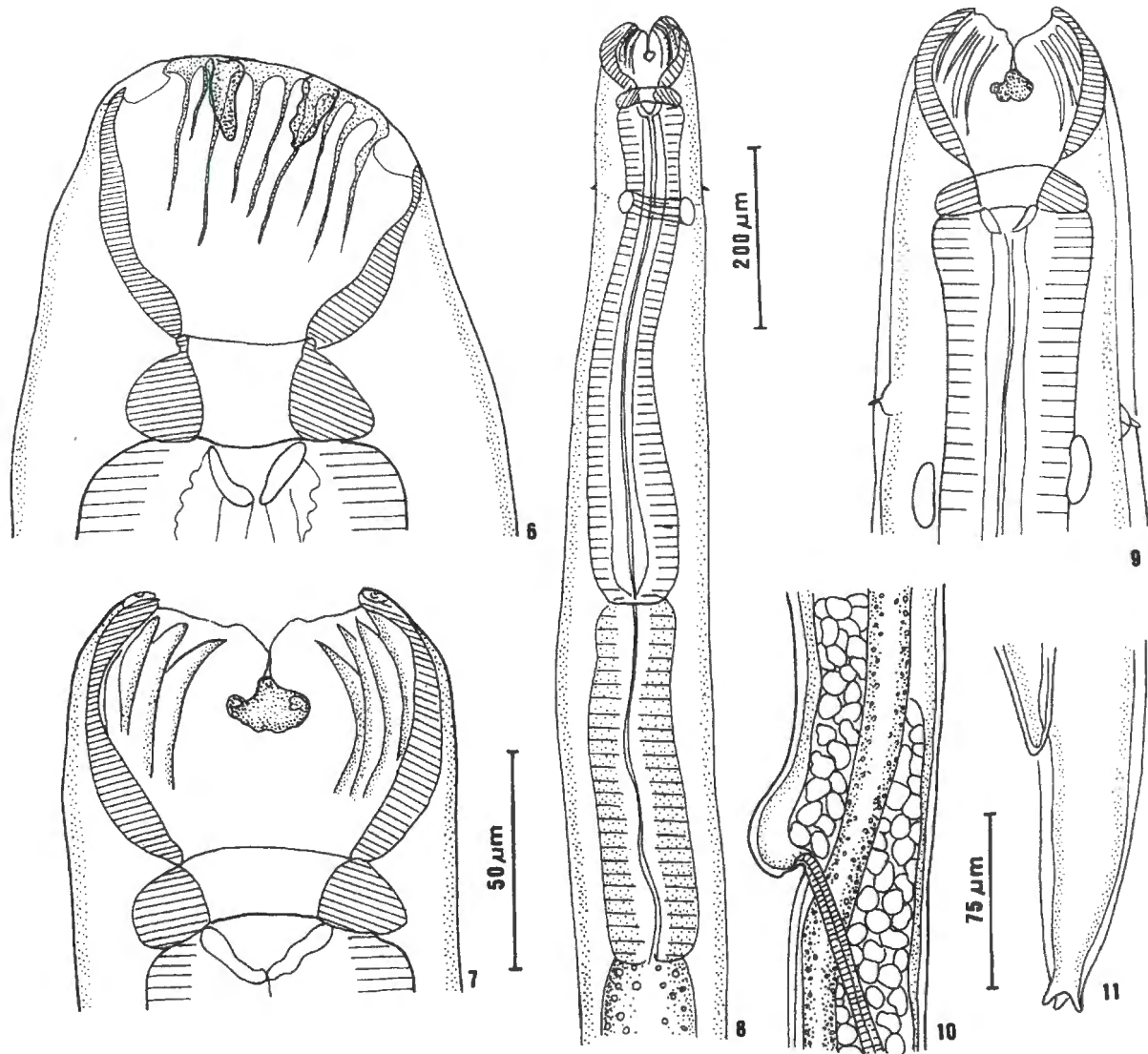


FIG. 6–11 *Camallanus polypteri* n. sp., female

FIG. 6 Lateral view of the head

FIG. 7 Ventral view of the head

FIG. 8 Median view of the anterior part

Scale bars = Fig. 6, 7: 50 µm; Fig. 8, 10: 200 µm; Fig. 9, 11: 75 µm

FIG. 9 Median view of the anterior extremity

FIG. 10 Lateral view of the vulvar region

FIG. 11 Lateral view of the tail

(1960) and *Paracamallanus* by Campara-Rouget (1961) and Chabaud (1975). Petter (1979), considering that the posterior chamber of the buccal capsule is more important in evolutionary relationships than the absence of tridents, placed the species without tridents in either the genus *Camallanus* or *Paracamallanus*, depending on whether the length of the posterior chamber was more or less than one third of the length of valves. Some authors accepted these synonymies (Soota 1983), but many others recognized the validity of the genus *Neocamallanus*. Lists of the species of the genus were given by Sharma & Sharma (1980) and De & Majumdar (1984). Bilqees & Akram (1982) did not recognize the genus *Neocamallanus*, but created a new genus

Neoparacamallanus for those species (with or without tridents) that have a posterior division of the buccal capsule that is markedly smaller than the anterior division, and measures more than one third of the length of valves. Lastly, Moravec & Sey (1988) gave a new definition of the genus *Neocamallanus*, that includes only those species characterized by the absence of tridents, the presence of a highly developed basal ring with spacious cavity and the presence of smooth longitudinal ribs on the inner surface of the lateral valves of the capsule. The new species does not fit these definitions, owing to its relatively narrow basal ring. Moreover, it does not appear closely related to the oriental species placed by Moravec & Sey (1988) in the genus *Neocamallanus*,

as it has a buccal capsule with a smaller number of longitudinal ridges, and is probably derived from an independent lineage. Therefore we prefer to place it in the genus *Camallanus*, according to the classification of Petter (1979).

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