

Description of key to the species of genus *Cosmocera diesing*, 1861

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Abstract

This Study as Carried out to describe the key to the species of genus *Cosmocerca Diesing*, 1861. Genus *Cosmocerca Diesing* 1861 is Characterized by presence of plectanes; Oesophagus comprising of cylindrical corpus, an anteriorly differentiated pharyngeal part an elongated isthmus and oesophagus bulb; Presence of spicule and gubernaculum number of cloacal papillae; Number of eggs.

Keywords: cosmocera, nematodes, *duttaphrynus melanostictus*, amphibia, India

Introduction

Nematodes of the genus *Cosmocerca* (Diesing, 1861) [7] are a Prominent component of the amphibian parasitofauna (Martinez and Maggenti, 1989) [17]. Occurrences of these parasites have been reported from all the continents. In the Oriental and palaearctic region, the genus is represented by many species *C. ishaqi* (Islam *et al.*, 1979) [12]; *C. commutata* (Diesing 1851); *C. longicucitata* (Linstoul, 1885) [15]; *C. japonica* (Yamaguti, 1938); *C. kalesari* (Rizen *et al.* 2011) [20]; *C. ornata* (Dujardin, 1845) [9]; to replace *C. indica* (Nama and Khichi 1973) [19]; An examination of the intestines of *Duttaphrynus melanostictus* for helminth parasites yielded the nematodes belonging to genus *Cosmosera*. The Purpose of this paper is to describe the key to the species of genus *Cosmosera* Diesing, 1861 [7].

Materials and Methods

The Collection of parasite nematodes for present studies was done from UNA Town (H.P). The Toad found dead in fields and open places around houses collection and their alimentary canal and other visceral organs were recovered in separate petriplates containing normal saline. the alimentary canal was opened by longitudinal incision and the intestinal mucosa was scrapped with the help of scalpel whereas visceral organs were teased into smaller bits in respective petriplates for the release of nematodes The recovered parasites were thoroughly washed in normal saline to remove the debris, if any The parasites were fixed in a boiling hot 3.4% formalin. The Boiling hot fixative was poured upon the parasites retained in a film of saline having drained off the excess saline. This step helped in almost straightening of the worms. The specimens were later preserved in fresh fixative in the vials and labeled for date locality of host and location of parasites in host body and name of host.

The Identification of parasites were done by following CIH keys to nematode parasites of vertebrates (vol 1-10) and also with the help of "systema helminthum" (vol III) (part 1 and 2) by (Yamaguti, 1961) [24].

Results

Family: Cosmoceridae (Railliet, 1961 subfam) Travassos, 1915 *C. kalesari* (Rizi *et al.*, 2011) [20]; *C. longicauda* (Linstoul, 1885) [15]; *C. Chilensis* (Lent & Freitas, 1948) [14]; *C.*

podieipinus (Baker Vaucher, 1984) [2]; *C. longispicula* (Maranc kaiser, 1994) [16]; *C. brasiliensis* (Travassos, 1915); *C. parva* (Travassos, 1925) [22]; *C. tyleri* (Burse *et al.*, 2006) [5]; *C. oroensis* (Burse *et al.* 2013) [6]; *C. japonica* (Yamaguti, 1935); *C. australis* (Baker, Green, 1988) [1]; *C. archeyi* (Baker, Green, 1988) [1]; *C. zugi* (Burse *et al.* 2005); *C. commutata* (Diesing 1851); *C. lymnodynastes* (Johnston, Simpson, 1941); *C. acanthurum* (Falcon artaz *et al.*, 2007) *C. arnata* (Dujardin, 1845) [9]; *C. novaeguineae* (Maravec & Sey, 1990); *C. cruzi* (Rodrigues & Fabio, 1970) [21]; *C. rara* (Ereitas & vicente 1966) [11]; *C. vrcibradici* (Burse & Goldberg, 2004) [3]; *C. Travassos* (Rodrigues Fabio, 1970) [21]; *C. ishaqi* (Islam *et al.*, 1979) [12].

Discussion and Conclusions

- 1 (20) Skicule well developed
- 2 (11) Number of cloacal papillae less than 10 pairs 5 pair of plectanes; Cloacal papillae 9 pairs; skicule 0.08 – 0.09 mm, gubernaculum 0.085 0.095mm
C. kalesari (Risvi *et al.* 2011) [20]
- 3 (6) Gubernaculum longer than skicule, 6 pairs of plectanes; cloacal papillae 4 pairs; spicule 0.092mm, gubernaculum 0.019mm
C. longicaute (Linstoul, 1885) [15]
- 4(5) Gubernaculum Slightly longer than spicule 6 pair of plectanes; cloacal papillae 6 pairs; spicule 0.08mm, gubernaculum 0.084mm
C. chilensis (Lent Freitas, 1948) [14]
- 5(4) Gubernaculum much longer than spicule, 5 pair of plectanes, plectanes of each row are fused with each other; Cloacal papillae 3 pairs; spicule 0.057 – 0.097mm, gubernaculum 0.062 – 0.14mm
C. podicikinus (Baker & Vaucher, 1984) [2]
- 6(3) spicule longer than gubernaculum. 7 pairs of plectanes; cloacal papillae 1 pair +1; spicula 0.297mm, gubernaculum 0.138mm
C. Longispicula (Maravelkaisen, 1994)

- 7(8) Spicule much longer than gubernaculum, 9-11 pairs of plectanes, cloacal papillae 7 pairs; skicula 0.13 – 0.20mm, gubernaculum 0.14mm; female toil conical with a thin auil shaped process
C. Branilienes (Travassos, 1925) ^[22]
- 8(7) Spicule slightly longer than gubernaculum, 4-6 pairs of plectanes, plectanes of each row are not fused with each other; cloacal papillae 3 pair +1; spicule 0.09 – 0.13mm, gubernaculum 0.07 – 0.10mm; female tail conical with a thin auil shaped process
C. parva (Travassos, 1925) ^[22]
- 9(19) Cubernaculum V shaped
- 10(12) Number of eggs more than 10, 9 pairs of plactanes; cloacal papillae 5 pairs; Spicule 0.037 – 0.043mm, gubernaculum 0.058-0.061mm
C. tyler (Bursesey *et al.* 2006) ^[5]
- 11(2) Number of Cloacal papillae more than 10 pairs
- 12(10) Number of eggs less than 10.
2 pairs of plectanes; cloacal papillae 11 pairs; spicule 0.037-0.052mm, gubernaculum 0.024 – 0.029 mm
C. oroensis (Bursesey *et al.* 2013) ^[6]
- 13(16) spicule longer than gubernaculum. 5 pairs of plectanes; cloacal papillae 34; spicule 1.04 mm, gubernaculum 0.08mm, gubernaculum well sclerotized
C. Japonica (yamaguti, 1998)
- 14(15) spicule longer than gubernaculum. 3-4 pairs of plectanes; cloacal papillae numerous; spicule 0.123mm, gubernaculum 0.88mm.
C. Australis (Baker & Green, 1988) ^[1]
- 15(14) spicule longer than gubernaculum, 4 pairs of plectanes; cloacal papillae numerous; spicule 0.095mm, gubernaculum 0.087mm
C. archeyi (Baker & Green, 1988) ^[1]
- 16(13) Gubernaculum longer than spicule, 4 pairs of plectanes; cloacal papillae 15 pairs, spicule 0.079 – 0.166 mm, gubernaculum 0.092mm; female tail with an auil shaped process
C. zugi (Bursesey *et al.* 2005)
- 17(18) Gubernaculum Much longer than spicule, 7 pairs of plectanes; cloacal papillae 10 pairs; spicule 0.192 – 0.224 mm, gubernaculum 0.216-0.240mm; female tail thin but not auil shaped process
C. commutate (Diesing, 1851)
- 18(17) Gubernaculum slightly longer than skipule, 4 pairs of plectanes; cloacal papillae numerous; spicule 0.0024mm x 0.05 – 0.075mm, gubernaculum 0.11m
C. Lymmodynastes (johnston Simpson, 1942)
- 19(9) Gubernaculum spoon shaped, 5 pairs of plcentanes; Cloacal papillae 14 pairs; spicule 0.051 – 0.066 mm, Gubernaculum 0.075 – 0.09mm
C. acanthurum (Falcon arterz *et al.* 2007)
- 20(1) Spicule rubeimentary, 5 pairs of plectanes; cloacal papillae 32; gubernaculum 0.072 – 0.105mm
C. arnatce (Dujardin, 1845) ^[9]
- 21(22) Gubernaculum is almost double the size of spicule, 5 pairs of plectanes; spicule 0.06mm Gubernaculum 0.111mm
C. novaeguineae (Maravec & Sey, 1990)
- 22(21) Gubernaculum variably longer than spicule, 5 pair of plectanes; spicule 0.074mm, Gubernaculum 0.085mm
C. cruzi (Rodrigues Fabio, 1970) ^[21]
- 23(24) Gubernaculum Slightly longer than spicule, 6 pairs of plectanes, skicule 0.2mm, gubernaculum 0.206mm
C. rara (Freitas Vicente, 1966) ^[11]
- 24(23) Spicule slightly longer than Gubernaculum. 7 pairs of plectanes; spiculae 0.177 mm, Gubernaculum 0.095mm
C. Vrcibraduci (Bursesey Goldberg, 2004) ^[3]
- 25(26) Gubernaculum present, 5 pairs of plectanes; skicule 0.167 mm, Gubernaculum 0.13mm
- 26(25) Gubernaculum Absent, 11 pairs of plectanes; spicule 0.1mm
C. ishaqi (Islam *et al.* 1979) ^[12]

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