

RESEARCH PAPER

# A new species of genus *Cotugnia* Diamare, 1893 (Eucestoda : Davaineidae) from *Streptopelia decacto* Maharashtra, India

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Revised : June 2009;  
Accepted : September, 2009

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## ABSTRACT

A new species of Cestode genus *Cotugnia* Diamare, 1893 obtained from the host Dove *Streptopelia decacto*, is described taxonomically and anatomically. On a detailed examination of specimens of Cestodes have allowed us to erect a new species of genus *Cotugnia* Diamere 1893 for to accommodate the worms. It shows the remarkable differences from all other known species of *Cotugnia streptopelii* sp.nov., in size of worms, diameter of scolex, diameter of rostellum, length of rostellar hooks, shape and size of mature segments, variation in number of testes, position of ovary, arrangement of vitelline gland and position of genital opening.

**Key words :** *Cotugnia streptopelii* sp.nov. *Streptopelia decacto*, Intestine, Parbhani

The genus *Cotugnia* Diamare 1893 is established with its type species *Cotugnia digonopora* Diamere 1893 *partim* Pasquale, 1890 from domestic fowl in Africa. Later on following species are added to this genus by various workers in the world. The present form deals with description of new species of *Cotugnia streptopelii* sp.nov. Jadhav *et al.*

(0.17857); mature segments broader than long, almost half times broader than long, with double set of reproductive organs, (15.18-11.25 x 33.93- 22.84); testes rounded 27-30 in number, scattered throughout the segments, pre-ovarian and post - ovarian, (0.54-0.89); Ovary compact, almost bilobed, situated on the both side of segments, just posterior region of segments, (5.36-4.46

## MATERIALS AND METHODS

About 100 specimens of cestode parasites were recovered from single intestine of the host *Streptopelia decacto* recently in the month of December 2007. All were flattened, fixed, preserved in 4% formalin, few of them were washed with the help of tap water, stained with Harri's haematoxyline, dehydrated in various grades of alcohols, slides were prepared for further investigation and drawings were taken with the help of camera lucida. All measurements are in millimeter. Slides are deposited in research laboratory.

### Description:

(Based on Fig. 1, 2 and 3)

Worms are short, with scolex, immature, mature segments; Scolex quadrangular in shape, longer than broad, with rostellum and suckers, (8.04-5.36 x 9.82-5.36); rostellum almost oval, with rostellar spines, (0.04); suckers for attachment to host intestine are 4, rounded in shape, in two pairs, situated at 4 corners, equidistantly placed, larger and smaller, not overlapping to each other (2.58-2.14 x 1.96-1.25); rostellar spines minute, smaller, larger in size, transparent, numerous, in a single row,

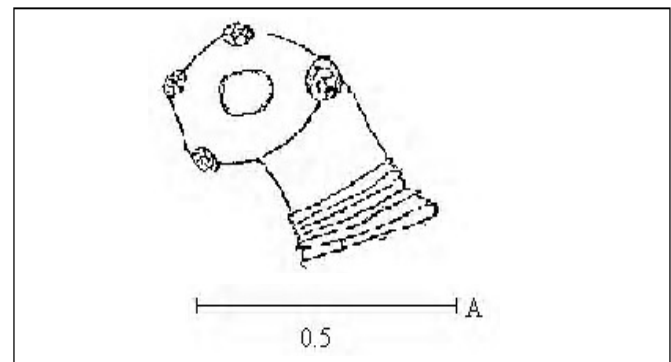


Fig. 1 :

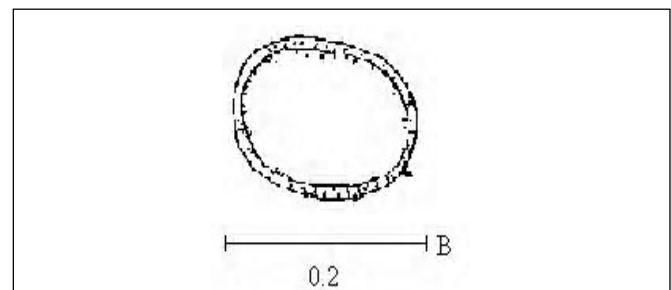


Fig. 2 :

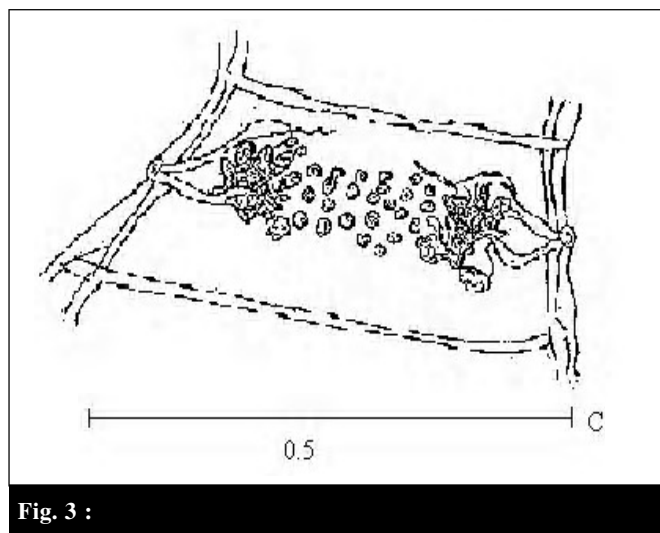


Fig. 3 :

x 5.54-4.46) ; cirrus pouch cylindrical, obliquely placed, on both side of segments, extends upto middle of segment, opens into common genital atrium, (0.89-0.71 x 0.71); vas deferens long, coiled and (3.53-0.18 x 3.57-0.18); cirrus thin, coiled, within cirrus pouch (4.46-2.68 x 3.21-3.57) ; Vagina thick, starts from genital pore, takes turn, post-ovarian, by forming receptaculum seminis reaches and opens into ootype (7.32-6.25); vitelline gland post- ovarian, oval, just posterior or middle of the segment (1.79-1.43x1.61-1.43);genital pore rounded, in middle of the segment,(0.36) in dimerter. Ootype round, in between lobe of ovary, (0.71-0.54) and genital atrium ovalprotrusible, slightly in the middle of segment (0.89-0.71).

## RESULTS AND DISCUSSION

The present form having a diameter of scolex 5.36-8.04x 9.82-5.36 diameter of rostellum 0.004, testes 27-30 in number, rostellar hooks numerous and length of cirrus pouch 4.46-2.68x3.57-3.21 differs from *C. polycantha* Fuhrmann 1900 in not having diameter of scolex 0.45, diameter of rostellum 0.22, number of rostellar hooks 420, number of testes about 100 and length of cirrus pouch 0.180; from *C. joyeuxi* Baer, 1925 having diameter of scolex 0.67 diameter of rostellum 0.190, number of rostellar hooks 250, number of testes about 50 (30) and length of cirrus pouch 0.075 ; from *C. fleari* Meggit, 1927 having diameter of scolex 0.45-0.58, number of testes about 28-49 and length of cirrus pouch 0.029-0.31; also differs from *C. cuneata tenuis* Meggit, 1924 having diameter of scolex 0.26, diameter of rostellum 0.12, number of rostellar hooks 400, number of testes about 50; also differs from *C. bahli* Johri 1934 in not having diameter of scolex 0.50, diameter of rostellum 0.34, number of rostellar hooks 332, number of testes 69-74

and length of cirrus pouch 0.0215 - 0.0223; further differs from *C. intermedia* Johri 1934 in not having diameter of scolex 0.44- 0.525, number of testes 63-74 and length of cirrus pouch 0.215 - 0.225; then differs from *C. noctua* Johri 1934 in not having diameter of scolex 0.51, diameter of rostellum 0.225, number of testes 170 - 182 and length of cirrus pouch 0.176-0.200; further differs from *C. parva* in not having diameter of scolex 0.50, diameter of rostellum 0.150,number of rostellar hooks 378-396, number of testes about 32 and length of cirrus pouch 0.190; it also differs from *C. rimondoi* Tubanguai *et al.*, 1937 number of rostellar hooks 300, number of testes 100-130 then differs from *C. magna* Burt, 1940 in not having diameter of 0.58-0.62, diameter of rostellum 0.285-0.315, number of rostellar hooks 480-500, number of testes 150 and length of cirrus pouch 0.238-0.270; further differs from *C. aurangabadensis* Shinde, 1969 in not having diameter of 0.483, diameter of rostellum scolex 0.300, number of rostellar hooks about 500, number of testes 130-140 and length of cirrus pouch 0.13x0.04 and differs from *C. columbae* Shinde, 1969 in not having diameter of 0.54-0.74, diameter of rostellum 0.44, number of rostellar hooks 1200, number of teste 12-14 and length of cirrus pouch 0.3; further differs from *C. shrivastavii* Malviya and Datta, 1970 in not having diameter of scolex 0.726, diameter of rostellum 0.446. number of testes 80-85; further it differs from *C. magdoube* Magzoubhii in Kasam,1980 in not having diameter of 0.44-0.55, diameter of rostellum 0.25 - 0.44, length of cirrus pouch 0.15-0.18; it also differs from *C. yamagutti* Shinde *et al.* (1980) in not having diameter of scolex 0.57-0.60, diameter of rostellum 0.26-0.17, number of rostellar hooks numerous, number of testes 190-200 and length of cirrus pouch 0.132 x 0.005-0.197-0.044 then it differs from *C. satpulensis* Malhotra in Capoor (1983) in not having diameter of scolex 0.535, diameter of rostellum 0.230, number of rostellar hooks 337, number of testes 43-92 (62) and length of cirrus pouch 0.190-0.283; also differs from *C. vishakhapatnemensis* Kolluri (1988) in not having diameter of scolex 28-35 x 0.336-1.056; further differs from *C. rajivaji* Jadhav *et al.*, 1994 in not having diameter of scolex 0.530-0.758 x 0.621- 1.06. diameter of rostellum 0.189-0.273x0.374-0.49, number of rostellar hooks 350-400, number of testes 60-65 and length of cirrus pouch 0.189 x 0.19; also differs from *C. kametiensis* Kharade *et al.*,1995 in not having diameter of scolex 0.84-1.00x0.267diameter of rostellum 0.018x0.152, number of rostellar hooks 200- 210, number of testes 95-105 and length of cirrus pouch 0.175-0.18; it also differs from *C. chaingmaii* Wongsawada *et al.* (1998) in not having diameter of scolex 0.50-0.738, diameter of rostellum 0.194

x 0.249 of testes 30-35; further differs from *C. manishae shinde et al.*, 1999 in not having diameter of scolex 0.462 x 0.485, diameter of rostellum 0.223x0.22, number of testes 85-95; then it differs from *C. ganguae Shinde et al.* (1999) in not having diameter of rostellum 0.180x0.216, number of testes 155-160; also differs from *C. mehdi Mahajan et al.* (1999) in not having diameter of scolex 0.985-1.516 diameter of rostellum 0.129 x 0.182, number of testes 140-150; differs from *C. alii Shinde et al.* 2002 in not having diameter of scolex 0.436 - 0.457 x 0.6390.657, diameter of rostellum 0.175-0.189 x 0.097-0.131, number of rostellar hooks 250-270, number of testes 120-125 (123) and length of cirrus pouch 0.225x0.068. differs from *C. singhi Pawar et al.*, 2004 in not having diameter of scolex 0.363 x 0.436-0.417, diameter of rostellar hooks 210, number testes 65-70 and length of cirrus pouch 0.229- 0.154 x 0.33 - 0.024. also differs from *C. lohaensis Jadhav et al.* (2004), in not having diameter of scolex 0.590-0.660x0.741-0.757 diameter of rostellum 0.227-0.242 number of rostellar hooks 190-210, number of testes 35-40 and of cirrus pouch 0.086-0.097x 0.004-0.009. also differs from *C. livae Patil et al.* (2005), in not having diameter of scolex 0.369 x 0.359 - 0.437, diameter of rostellum 0.175-0.0189 x 0.097-0.131, number of rostellar hooks 250- 270, number of testes 120-125 (123) and length of cirrus pouch 0.225x 0.68 and differs from *C. shankare et al.*, 2005 in not having of cirrus pouch 0.098 x 0.030.

The above noted differentiating characters are enough to erect a new species for these worm and hence the name *Cotugnia streptopelii* n.sp. is proposed after the generic name of the host.

#### Taxonomic summary:

Genus	: <i>Cotugnia</i> Diamare, 1893..
Species	: <i>Cotugnia streptopelii</i> sp. nov.
Type host	: <i>Streptopelia decacto</i>
Habitat	: Intestine
Date of Collection	: 16 <sup>st</sup> December, 2007.
Etymology	: The name is proposed to the species after the name of generic name of the host.
Locality	: Jintur Road, Parbhani

#### Acknowledgment:

The authors are thankful to the Principal Dr. P.L More and Dr. V.B. Garad Head Department of Zoology and Fishery Science, Dnyanopasak College, Parbhani for providing laboratory facilities and encouragement during research work.

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