



A Study on Cestode Parasites of Cotugnia Species of Nanded (M.S.) India

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ABSTRACT:

For the present study, two species of birds belonging to the genus *Cotugnia*—*Cotugnia nandensis* and *Cotugnia lohanesis*—were collected from different sites in Nanded District, and their cestode parasite status was assessed. In both of the host species, *Diamare* 1890 was detected. Based on a range of morphological and anatomical traits, the specimens so collected were determined to be *Cotugnia nandensis* and *Cotugnia lohanesis*, respectively, when compared to the recognized species of the genera *Cotugnia*. However, a few intraspecific variations were observed.

Key words: Cestode, Pigeon, *Cotugnia*, *nandensis*, *lohanesis*, Nanded, Anatomical.

INTRODUCTION:

The current experiment was part of a helminthological investigation on two *Cotugnia* species (*Cotugnia nandensis* and *Cotugnia lohanesis*) of Nanded. Pigeons and doves are members of the Columbidae family of birds. It is the only family in the order Columbiformes. These birds are small-headed, short-necked, strong, and have thin bills. The cerea of certain species are meaty. They typically consume plant material, such as leaves, fruit, and seeds.

MATERIALS AND METHODS:

Thirteen specimens of cestode parasites were extracted from the colon of the pigeon *Columbia livia* at Loha, and five specimens were extracted from the colon of the pigeon *Columbia livia* at Nanded. The collected worms were washed, relaxed, fixed in 4% formalin, stained with H. haematoxylin, dehydrated, and cleared in xylene before to being mounted on D.P.X. Drawings were produced using Camera Lucida. All measures are in millimeters (mm). Identification was given by Yamaguti (1961) using a range of taxonomic traits.

DESCRIPTION:

This publication describes two species of cestodes, *Cotugnia nandensis* and *Cotugnia lohanesis*.

The large, quadrangular Scolex of the *Cotugnia nandensis* type measures 0.350 to 0.393 in width and 0.335-0.350 in length. The armed rostellum-equipped scopex has a huge, broad, oval base that is 0.058 to 0.097 long and 0.072 to 0.097 wide. Rostellar hooks two circles with the numerals 320–330 (322) and measures 0.003-0.004 in length and 0.001 in width. This large oval rostellum sucker has four arms and measures 0.058 to 0.097 in length and 0.072 to 0.097 in width. The neck features regular lateral borders and is somewhat wide in front and narrow in rear. It is between 0.606 and -0.805 in length and between 0.218 and -0.345 in breadth. Proglottids are medium, squarish, broader than long, mature, and range in length from 0.364-0.850 and width from 0.859 to 0.669. They have a double pair of reproductive organs and short, blunt, conical projections at the posterior corners. 73 small oval tests with measurements of 0.24 to 0.024 in length and 0.024 in width are included, and they are uniformly spaced. The cirrus pouch is small, oval, somewhat elongated, obliquely positioned, and anteriorly directed. It is 0.053 in length and 0.015-0.019 in width. A cirrus pouch encloses the 0.053 long by 0.005 wide cirrus medium, which has a slight anterior curvature. Vasdeferences is long and coiled, measuring 0.233 in length and 0.005 in breadth. The ovary has multiple short, blunt, spherical acini and is small, cylindrical, blobbed, and curved. Its width varies from 0.024 to 0.059, and its length is 1.121. The vaginal medium is 0.175 length and 0.005 wide, and it is situated behind the cirrus pouch. It starts at the genital pore and finishes at the ootype after passing through the longitudinal excretory canals. A small, spherical, anteroventral ovary with a diameter of 0.015 to 0.019 is the ootype. Vitelline glands are medium, oval, and posteroventral to the ovary, and genital pores are medium, oval, marginal, and vary in length from 0.039 to 0.049 and width from 0.015 to 0.024. They are 0.039 to 0.043 in length and 0.023 to 0.039 in breadth. Longitudinal excretory channels are narrow and vary in thickness from 0.005 to 0.010.

The large, quadrangular scopex of *Lohanesis Cotugnia* measures from 0.291 and 0.752 in width and 0.316 and 0.461 in length. The scopex is a big, oval, armed rostellum that ranges in width from 0.301 to 0.375 and in length from 0.175 to 0.325. With the numerals 285–305 (168), Rostellar hooks

two circles that are 0.003-0.004 in length and 0.001 in diameter. Rostellum suckers are medium, oval, four-armed, and vary in width from 0.155 to 0.170 and length from 0.150 to 0.194. The neck has uniform lateral margins and is medium in width, broad inside, and small behind. Its width is 0.243 to 0.597 and its length is 0.786 to 0.835. Mature proglottids feature two pairs of reproductive organs and are medium in size, measuring 0.981 to 1.078 in width and 0.461 to 0.582 in length. Short, blunt, conical projections at the front or rear corners are also a part of them. The longitudinal excretory channels 65–70 (68) in number laterally delineate the medium, oval testes, which measure 0.24–0.034 in length and 0.019–0.029 in breadth. The somewhat elongated, medium-sized, oval, obliquely positioned Cirrus pouch measures 0.078 to 0.092 in length and 0.024 to 0.039 in width. A cirrus pouch encloses the gently coiled cirrus medium, which is 0.078 to 0.098 in length and 0.005 in width. The medium-sized, coiled vas deferences measure 0.005 in width and 0.132 to 0.170 in length. Several short, blunt, spherical acini are found in the anterior 1/3 of segments or just in the center of segments of the medium, oval, bilobbed, slightly uneven ovary, which measures 0.136 to 0.155 in length and 0.043 to 0.049 in width. It starts at the genital pore, widens and extends, travels through the longitudinal excretory canals, creates the receptaculum seminis, and eventually reaches and opens into the ootype. The vagina is broad and located posterior to the cirrus pouch. Its measurements are 0.010 to 0.015 in width and 0.218 to 0.267 in length. With a length of 0.116 to 0.189 and a width of 0.015 to 0.024, the receptaculum seminis is small, oval, elongated, and curved posteriorly. A small, spherical, anteroventral ovary with a diameter of 0.015 to 0.015 is the ootype. The medium, oval, marginal genital pores are located 1/4–1/7th from the front boundary of segments and measure 0.024–0.209 in length and 0.010–0.015 in breadth. Gravid proglottids are large, squarish, broader than long, and range in size from 0.397 to 0.568 in length and 2.158 to 2.385 in width. They have lateral convex or concave uneven margins. The uterine medium is between 0.018 and 0.067 long and between 0.029 and 0.034 wide. It enters the uterine capsules and fills the entire segment. There is only one small oval egg inside the uterine capsule, which is 0.025 to 0.030 long and 0.025 to 0.028 wide.

RESULTS AND DISCUSSION:

The genus *Cotugnia* was erected by Diamare in 1893. later on the following species is added to this genus:

- *C. digonopora* Diamare, 18, *C. polyacantha* Kahrmann, 1909
- *C. joyeuxi*, Baer, 1924, *C. cuneata tenuis* Meggitt, 1924
- *C. parva* Baer, 1925, *C. fleari* Meggitt, 1929
- *C. nervosa* Meggitt, 192, *C. bahl*, Johri, 1934
- *C. intermedia* Johri, 193, *C. noctua* Johri, 1934
- *C. taiwanensis* Yamaguti, 193, *C. rimandol* Tubangui at Masilungan, 1937.

The worm in question is not like any of the other *Cotugnia nandednesis* and *Cotugnia lohanesis* species that are currently recognized. Many distinctive traits are presented and compared to those of other species in the genus.

The current worm differs from *C. bhali* in that it has a cirrus sac length of 0.215-0.223, 332 rostellar hooks, 69-74 testes, a rostellum diameter of 0.34, and a scolex diameter of 0.50.

The current worm differs from *C. intermedia* in that it has a cirrus sac length of 0.215 to 0.225, a spleen diameter of 0.44 to 0.525, a rostellum diameter and unspecified rostellar hooks, and 69 to 74 testes.

The current worm differs from *C. shrivastavi* in that it contains 80–85 testes, an unknown cirrus sac length, a spanx diameter of 0.726, a rostellum diameter of 0.446, and no rostellar hooks.

With a rostellum diameter of 0.230, a scopex diameter of 0.535, 337 rostellar hooks, 43-92 testes, and a cirrus sac length of 0.190-0.283, the current worm is not the same as *C. satpulisensis*.

With a rostellum diameter of 0.37-0.0447, a sclerox diameter of 0.530-0.758, 350-400 rostellar hooks, 60-66 testes, and a cirrus sac length of 0.189, the current worm is not the same as *C. rajivji*.

CONCLUSION:

This work redescribes just two species of cestode parasites: *Cotugnia nandednesis* and *Cotugnia lohanesis*. was found in two species of *Cotugnia*. This study expands the range of parasite species that infect these bird hosts.

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REFERENCES:

1. Cappor, C.C. and Cristes J.L. (1974): The helminthes parasites of red winged black birds from South Bass.
2. Island. J. Wild. Life, dis. 10(4): 399-403.
3. Malviya, H.C. and Dutt, S.C. (1970): Morphology and life history of *Cotugnia srivastavi* n.sp. (Cestoda: Davaineidae) from the domestic pigeon.
4. Ind. Veic. Ros. Inot. Izzatnagar, U.P. pp.103-108.
5. Malviya, H.C. and Dutt, S.C. (1979): A new species of *Cotugnia* (Cestoda: Davaineidae) from the domestic pigeon in India.
6. Parasitol, 59 (2): 397-400.

7. Quesin, J.C. (1963): Description de *Cotugnia dounesi* n. sp., Cestode parasites de la, paule domestique a modagaskar bulletin de la societede, Pathalogie.
8. Sawada, I. (1971): Two new avian cestodes *Raillietina* (R) *somalensis* and *Cotugnia chohoi* from *Acrylium vultunianum*, Somala, Japan.
9. Jap.J. Zool. 16 (3) 131-134.
10. Shinde, G.B. (1969): A known and two new species of the genus *Cotugnia* Dimare, 1893 from columbiformes birds in Maharashtra, India.
11. Rev. Parasit. 30 (1): 39-44.
12. Thorat, B.S. (2011), A new species of the genus *Cotugnia* (Diamare, 1893) from *Gallus domesticus* at kannad Dist. Aurangabad (M.S.) India. Hi-Tech Research Analysis. 3(1). 82 -87.
13. Thorat, B.S. (2020), Histopathological study of the cestode parasite, *Coutugnia* from *Gallus domesticus* at kannad Dist. Aurangabad (M.S.) India. International Journal of Advanced Academic Studies. 2(3) 204-206.