VITTA CROTOPHAGAE SP. N.
(CESTODA: DILEPIDIDAE), A NEW CESTODE
SPECIES FROM CROTOPHAGA ANI L. (CUCULIFORMES)
IN CUBA

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Abstract. A new cestode species, *Vitta crotophagae* sp. n. (*Cyclophyllidea: Dilepididae*) is described from *Crotophaga ani* L. from Cuba. The species is compared with relative species *V. parvusalis* (Knüppe, 1969), *V. concholinota* (Leistner, 1977) and *V. parcellidii* (Rádics, 1967). A survey of species of the genus *Vitta* is given.

During the studies of cestodes from birds collected by the authors in Cuba, cestodes of the genus *Vitta* Burt, 1938 (*Cestoda: Dilepididae*) were recovered from the small intestine of the eneeko *Crotophaga ani* L. They are described as a new species.

*Vitta crotophagae* sp.n.

**Host:** Crotophaga ani L.

**Locality:** Guanaapeabises, La Cuba, Camino de San Francisco (Isa de Juventud).

Out of 32 examined host specimens, 8 birds (25 %) were infected. There occurred 1—5 cestodes per host.

**Description (holotype):** The cestodes with still undeveloped gravid proglottids are 55.6 mm long and 1.450 mm wide at the widest site in posterior part of body.

The scolex is hemispherical and measures 0.259 mm in transverse diameter. The suckers are spherical or sub-spherical and measure 0.112—0.115 x 0.107—0.122 mm. The rostellarium measures 0.049 mm in transverse diameter, the rostellar sheath reaches up to the level of lower margin of suckers and is 0.140 mm long. The rostellarium bears 39 hooks measuring 0.018 mm in length and arranged in two rows as follows: 1 : 2 : 1 : 2 : 2 : 1 : 2. The measurements of individual parts of hooks slightly differ in the two rows. In the row consisting of 10 hooks, the guard is 0.005 mm and the blade 0.005 mm long, whereas in the row consisting of 20 hooks, the guard is 0.006 mm and the blade 0.004 mm long.

The strobila is of a cespedites type. The oldest proglottides possess fully developed genital organs. They contain 38—43 testes of spherical or oval shape, measuring 0.038 to 0.045 mm in diameter. They are situated behind genital organs in posterior half of proglottids. The cirrus pouch is fusiform, opening in the first fifth of proglottid length and reaching the level of ventral excretory canals. In the most developed parts of strobila it measures 0.304 mm in length and 0.035—0.040 mm in width. The vas deferens forms numerous loops before entering the cirrus pouch. The internal seminal vesicle in the cirrus pouch is replaced by several loops of seminal duct. The cirrus is cylindrical, slightly conical, and measures 0.130 x 0.012 mm. Its surface is evenly covered by fine spines easily falling away so that a great part of evaginated cirrus is bare.

The female genital organs are situated in the first third of proglottid length, sometimes they are slightly shifted in paloral direction. The ovary is bilobed, with strongly branched...
lobes connected by a narrow commissure. The transverse diameter of the ovary is 0.449 mm, the poral part is sometimes smaller than the aporal one. The vitellarium lies beneath the ovary, it is transversely elongated and also strongly lobed. Its maximum transverse diameter is 0.204 mm, the cranio-occlusal diameter is 0.074 mm. The oocyte is situated in the space between the lobes of ovary and vitellaria. The seminal receptacle forms an oval sac measuring 0.102–0.115 x 0.050–0.058 mm and lying close in front of the poral part of ovary. The vagina runs in parallel with the cirrus sac. Its short intermediate part passes to a relatively long copulatory part and opens slightly sublaterally in the genital atrium below the opening of the cirrus pouch. The prostroglossids with uterine were not yet fully developed.

Paratypes: The host, from which the holotype was recovered, harboured other cestodes within the host. Without the youngest portion of strobila, so that the first prostroglossids in this part of strobila possessed already developed genital organs. However, there were also prostroglossids with developing uterus and with eggs. The length of this fragment was 65.4 mm and the maximum width in the most mature portion was 1.488 mm. The inner anatomy of the sexual prostroglossids was fully identical with the anatomy of the holotype, only the cirrus pouch was somewhat longer, reaching the length of 0.220 mm. The shape of the cirrus was the same as in the holotype. In the most mature prostroglossids developed a reticulated uterus overlapping the lateral excretory canals. The last prostroglossids contained already fully formed eggs. The eggs possessed 0.060–0.081 mm long filaments on poles, the egg without filaments measured 0.057 x 0.036 mm. The internal membrane measured 0.057–0.042 x 0.034–0.030 mm, the oncosphere 0.021 x 0.024 mm and embryonal hooks 0.016 mm.

The remaining 7 specimens of *Crotophaga an* harboured other incomplete strobilae at various stages of maturity. Eleven of them possess scoleces measuring 0.193 to 0.288 mm in transverse diameter. The suckers are spherical or oval and measure 0.076 to 0.065 mm in diameter. The rostellar sheath is 0.140–0.195 mm long and terminates in front of — in some cases even behind — the posterior margin of suckers. The rostellar measures 0.030–0.049 mm in diameter. A majority of scoleces bear an incomplete crown of hooks, one scolex with invaginated rostellar bears 33 hooks. The situation, shape and position of hooks in the paratypes is the same as in the holotype. The length of hooks, however, ranges from 0.018 to 0.021 mm. The topography and structure of genital organs in hermaphroditic prostroglossids is also the same as in the holotype. The holotype is deposited in the Museum of the Institute of Helminthology, Slovak Academy of Sciences, Košice (Coll. No. 1938a).

Discussion: The genus *Vitta* was established by Burt (1938) and placed to the family Dilepididae, Fuhrmann, 1907. The type species is *Vitta magninuncinata* Burt, 1938. The species belonging to the genus *Vitta* possess rostellar hooks arranged in two rows according to two schemes, either 1 : 2 : 2 : 1 or 2 : 2 : 2 : 2. Their genital openings alternate irregularly, with the exception of *V. paratrichonis* (Krabbe, 1889) with regularly alternating openings. On the basis of this character, Birová-Volosinovcová (1969) created a new subgenus *Hirundinicolia* for this species named *V. chelidionaria* in her paper. Numerous tests are situated behind female organs in the posterior half of prostroglossids. The eggs possess filaments at the pole.

Yamaguti (1959) considers the genus *Vitta* Burt, 1938 a synonym of *Angularella* Strand, 1928, though the arrangement of rostellar hooks is quite different in these two genera. In *Angularella*, the hooks are arranged in a typical zigzag line.

Mátěnovský (1963) did not agree with the synonymization proposal by Yamaguti and reestablished *Vitta* as an independent genus. However, she placed it in the family Chonotaeniidae Mathievovskij, 1963, where she included the estodes of the superfAMILY Dilepidoida Mathievovskij, 1962 characterized by the uterus disintegrating into capsules containing one egg. She placed the following 7 species to the genus *Vitta* Burt, 1938: *V. magninuncinata* Burt, 1938, *V. brevi Mathievovskij, 1963, V. sexigti* Spasky & Spaskaja, 1959, V. w.s. Singh, 1953, and V. tuvensis Mathievovskij, 1963.

Spasky & Spaskaja (1967) again transferred the genus *Vitta* to the family Dilepididae Fuhrmann, 1907, to which they place 11 species:

*Vitta magninuncinata* Burt, 1938
*Spasky & Spaskaja, 1971
All these species are parasites of birds of the orders Passeriformes (family Hirundinidae) and Apodiformes. The species described by us is parasitic in Cuculiformes. In spite of this, it corresponds to generic characteristics of the genus *Vitta* Burt, 1938 as they were given by Spasky and Spaskaya (1977); the arrangement of rostellar hooks in two rows (1: 2 : 1; 1: 2), irregularly alternating genital opening, reticular uterus and eggs with pole filaments.

According to the number of rostellar hooks (30—33), *V. crotophagae* sp. n. is close to *V. parverostris* (30), *V. parachelidonaria* (32) and *V. ovocucinata* (32—36). The remaining species of *Vitta* possess a higher number of rostellar hooks, 40 and more. As to the length of rostellar hooks, our species can be compared with *V. ovocucinata*, but it differs from this species in that the hooks of *V. crotophagae* sp. n. are of identical length in both rows (0.018—0.021 mm), whereas those of *V. ovocucinata* measure 0.017—0.019 mm in the first row and 0.015—0.018 mm in the second one. The shape of rostellar hooks, however, is quite different in the new species. The guard is much longer than in *V. ovocucinata* and runs in parallel with the blade. The cirrus pouch of *V. crotophagae* sp. n. is much longer (0.204—0.220 mm) than that of *V. ovocucinata* (0.135 mm). The number of testes is 38—43 in *V. crotophagae* sp. n. and 52—60 in *V. ovocucinata*. Their arrangement is also different: in *V. ovocucinata*, the testes reach the upper level of ovary and vitelline gland, whereas in *V. crotophagae*, they reach at most their lower margin.

In *V. parverostris*, the rostellar hooks are markedly smaller (0.012—0.014 mm) and their shape is quite different. Moreover, the genital openings alternate regularly, in contrast to the new species. The cirrus pouch is much shorter (0.114—0.125 mm) and the number of testes is lower (15—17). The arrangement of testes is different, they form two lateral groups separated by ovary and vitellarium. The ovary and vitellarium of *V. parverostris* are situated in the median line near posterior margin of proglottids, whereas in *V. crotophagae*, they are in the first third of proglottid length.

*V. parachelidonaria* possesses very small rostellar hooks (0.008 mm) and their shape is quite different (very wide and low guard). The number of testes is lower (25—30), but their arrangement is similar to the arrangement in *V. crotophagae* sp. n.

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**VITTA CROTOPHAGAE SP. N. (CESTODA: DILEPIDIDAE). NOVAYA ČESTODA OT CROTOPHAGA ANI L. (CUCULIFORMES) IZ KUBY**

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Резюме. Описан нова честода, Vitta crotophagae sp. n. (Cyclophyllidea: Dilepididae), от Crotophaga ani l. из Кубы. Новый вид сравнивается с видами V. parverostris (Krabbé, 1869), V. ovocucinata (Linstow, 1877) и V. parachelidonaria (Linstow, 1867). Для обзор видов рода Vittae.