

REMARKS ON THE CUBAN SPECIES OF THE GENUS HELMINTHOXYS (NEMATODA: SYPHACIIDAE)

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Abstract. Studies on the morphology of the species *Carolodelatorrella tiflophila* Pérez Vigueras, 1943 from the host *Capromys prehensilis prehensilis* revealed that all morphologic features of this taxon were consistent with the diagnosis of the genus *Helminthoxys* Freitas, Lent et Almeida, 1937. Therefore, we transferred this species to the genus *Helminthoxys* as *H. tiflophila* (Pérez Vigueras, 1943) n. comb. and appended its detailed redescription consistent with our material. The generic name *Carolodelatorrella* Pérez Vigueras, 1943 becomes a synonym to *Helminthoxys* Freitas, Lent et Almeida, 1937. Besides, a new taxon *H. quentini* n. sp. from the host *Capromys pilorides pilorides* is described. It differs from the yet reported species of the genus *Helminthoxys* (*H. caudatus*, *H. urichi*, *H. velizi*, *H. freitasi*, and *H. tiflophila*) in smaller spicule and tail lengths both in males and females. From the species *H. effilatus*, *H. quentini* differs in the shape of the proximal end of the spicule, in that of the gubernaculum and in the distance of cuticular mamelons from the cloaca.

The original rodents in the Antilles subarea belong to the family Capromyidae (Rodentia: Caviomorpha). In Cuba this family is represented by the genus *Capromys* in which—according to Varona's (1970) and Varona's and Garrido's (1970) data—altogether 9 endemic species and subspecies in three subgenera (*Capromys*, *Mysateles* and *Mesocapromys*) are listed. The genus *Geocapromys* is known in Cuba in extinct forms only. Living species are distributed in the Bahama Islands, in Jamaica and in the Little Swan Island.

As results from the papers of Pérez Vigueras (1934, 1936, 1943), Prokopič and del Valle (1966), Baruš and Ryšavý (1967), the helminthofauna was being studied only in two species of the genus *Capromys* (*C. pilorides pilorides*, *C. pilorides relictus* and *C. prehensilis prehensilis*). Altogether 5 nematode species of the genera *Monodontus*, *Trichotravassosia*, *Pseudoheligmosomum*, *Longistriata* and *Carolodelatorrella* were identified. On the generic level the helminthofauna of hosts from the genus *Capromys* shows a distinct affinity with that of the South American rodents of the families Caviidae, Dasyproctidae and Chinchillidae (Rodentia: Caviomorpha). So far, members of the genus *Carolodelatorrella*—including the species *H. tiflophila* Pérez Vigueras, 1943—have been considered to be endemites of the fauna of the Cuban Island. The new material, recovered from the typical host (*C. prehensilis prehensilis*) in 1968, enabled us to solve the problem of the systematic position of this genus in the family Syphaciidae. The new taxon described in the present paper was identified in the host *C. pilorides pilorides*.

RESULTS

RELATIONSHIP OF THE GENERA *HELMINTHOXYS* AND *CAROLODELATORRELLA*

In 1937, Freitas, Lent et Almeida described a new nematode species (*H. caudatus*) from the Argentinian rodent *Caviella australis*, for which they also created a new genus *Helminthoxys* belonging to the family Syphaciidae (subfamily Syphaciinae). Cameron and Reesal (1951), Schuurmans—Stekhoven (1952), Parra Ormeno (1953) and Quentin (1969) enriched this genus by additional species. In keeping with the data of Freitas, Lent and Almeida (1937), Schuurmans—Stekhoven (1952) and Quentin (1969), the genus *Helminthoxys* is characterized by the following features: cervical and lateral alae present; mouth with three pseudolabia, 1 dorsal and 2 latero-ventral denticles; vestibule present; oesophagus with bulb; male with two cuticular mamelons situated ventrally; 1 spicule and gubernaculum with an attached hook.

Pérez Vigueras (1943)—independent of Freitas, Lent and Almeida (1937)—described a new nematode species (*C. tislophila*) from the Cuban rodent *Capromys prehensilis prehensilis* for which he constituted the new genus *Carolodelatorrella*. In his paper he does not distinguish the described genus from *Helminthoxys*, but he places it in relationship with the genus *Syphacia*—which indirectly shows a close relation of the newly created genus also with *Helminthoxys*. While comparing the diagnoses of the respective genera *Helminthoxys* and *Carolodelatorrella*, their conformity in nearly all characteristics is striking. The analysis of the typical species of the genus *Carolodelatorrella* (*C. tislophila*), obtained from the typical host and area, showed explicitly that the features of these nematodes were consistent with the diagnosis of the genus *Helminthoxys*. For that reason we transferred the species *C. tislophila* Pérez Vigueras, 1943 to the genus *Helminthoxys* and placed the generic name *Carolodelatorrella* Pérez Vigueras, 1943 in synonymy with *Helminthoxys* Freitas, Lent and Almeida, 1937.

CUBAN SPECIES OF THE GENUS *HELMINTHOXYS*

Nematodes from the genus *Helminthoxys* were found in Cuba in two host species of the genus *Capromys* (*C. prehensilis* and *C. pilorides*). Consistent with Pérez Vigueras's (1943) as well as our data, the former host is parasitized by the species *H. tislophila* whose detailed redescription—compiled from our material—is enclosed. The nematodes identified in the host *C. pilorides* differ both from this species and from the other ones of the genus *Helminthoxys* in their specific characteristics. Therefore they are described as a new taxon in the present paper.

1. *Helminthoxys tislophila* (Pérez Vigueras, 1943) n. comb.

Fig. 1

Host: *Capromys prehensilis prehensilis* (Poepping, 1824). Location: intestine. Locality: Sierra del Rosario (Province of Pinar del Río).

Of the 6 hosts examined, this species was found in 4 hosts (3, 18, 206 and 34). Out of the total of 261 nematodes 135 were males and 126 females.

Description: (All measurements in mm.) Whitish nematodes with a conspicuously transversely striated cuticle. Bdy tapering moderately towards anterior rounded end, but markedly in posterior direction at the point where it extends into a long tail. Oral mask expanded laterally. Mouth surrounded with 3 pseudolabia, one is ventral and two are laterodorsal. On the lateral sides of the oral aperture one amphid and one pair of

submedian papillae are present on either side. Buccal denticles numbering 3 have rounded apices and are situated in the space below the pseudolabia (one denticle being dorsal and two lateroventral). Marked cervical alae present, continuing farther on as lateral ones (reaching as far as the anus with females, as far as the cloaca with males).

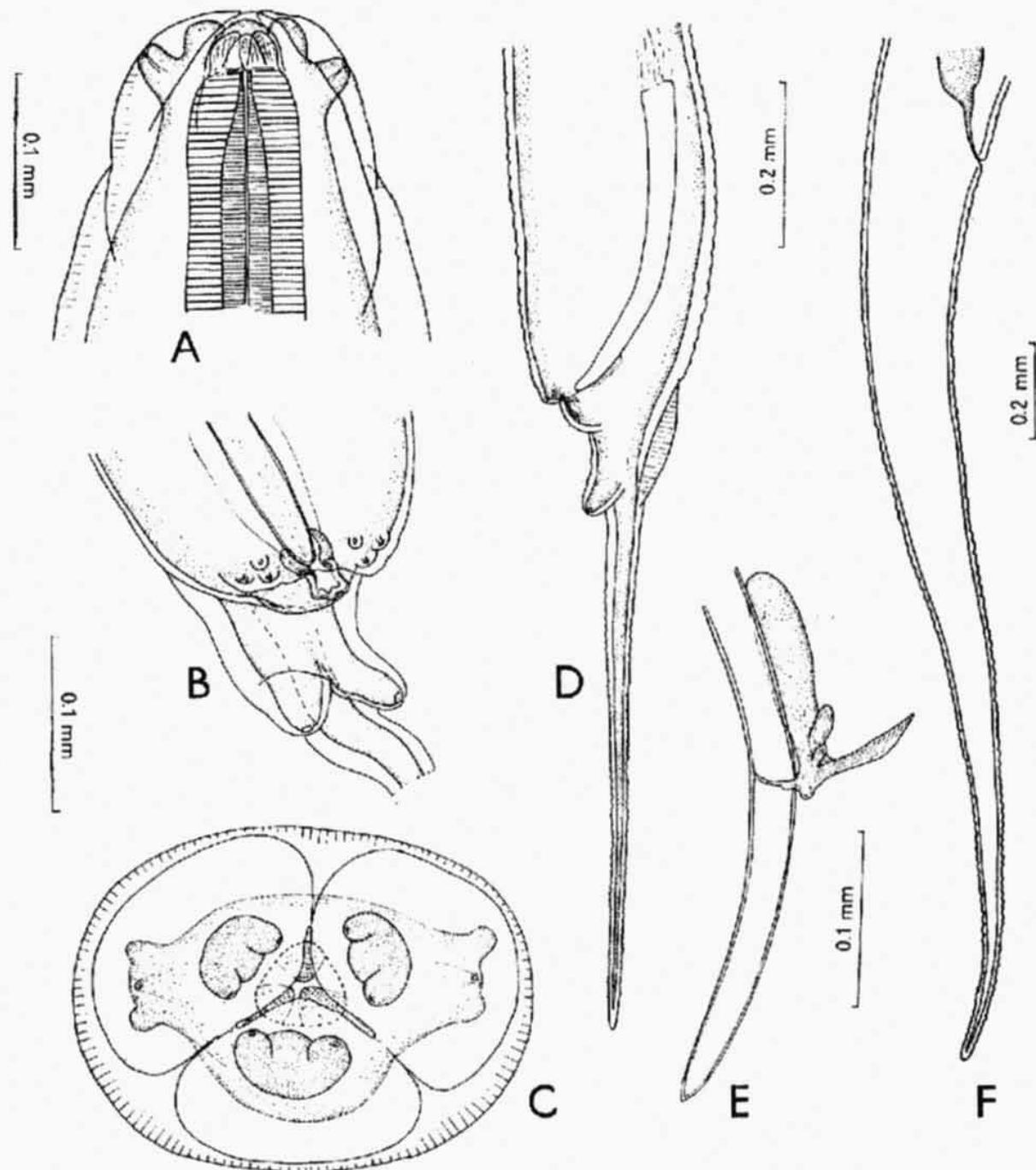


Fig. 1. *Helminthoxys tiflophila* (Pérez Vigueras, 1943) n. comb. from the host *Capromys prehensilis prehensilis*. A — anterior portion of the male body (ventral view); B — detail of the posterior portion of the male body (ventral view); C — anterior portion of the female body (apical view); D — posterior portion of the male body (lateral view); E — distal end of spicule and gubernaculum (lateral view); F — posterior end of the female body (lateral view). Orig.

Male: Body is 6.55—14.97 long, maximum width being 0.34—0.64. Nerve ring situated 0.24—0.34 from the anterior end of the body, excretory pore 1.40—2.49. Vestibule is 0.045—0.073 deep. Oesophagus possesses a characteristic bulb with valvular apparatus. Its total length measures 0.86—1.24. Bulb is 0.20—0.33 long and 0.15—0.25 wide.

Cervical alae attain 0.030—0.035 in width. On the ventral side of the body 2 cuticular mamelons present, the nether one being 0.27—0.48 long, the upper one 0.25—0.39. The nether margin of the lower mamelon lies at 1.71—3.43 from the cloaca, that of the upper one at 2.22—4.24. Spicule 0.42—0.55 long, its proximal end 0.033—0.036 wide. Gubernaculum is 0.12—0.14 long. The posterior part of the body projects into a tail 0.65—0.87 long. Caudal bursa bearing altogether 3 pairs of precloacal papillae and 1 pair of postcloacal ones.

Female: Body 16.38—24.46 long, maximum width 1.12—1.27. Nerve ring 0.37—0.44 from the anterior end of the body, excretory pore 2.49—3.43. Vestibule 0.073—0.109 mm deep. Cervical alae 0.056—0.087 wide. Overall length of oesophagus 1.40—1.48. Bulb is 0.36—0.41 long and 0.29—0.33 wide. Vulva 7.64—11.23 from the anterior end of the body. Its margins are not salient. Anus 1.71—2.49 from tail end. Eggs measure 0.102 to 0.109 × 0.041—0.048. Their surface delicately striated.

Remark: Starting from the morphological study of our material, we consider it necessary to complement the original description of the species *H. tislophila* with the following characteristics: Only 2 elongated postcloacal papillae were being constantly found in males, while in the original description 3 of them are given. Three pairs of sessile papillae of the caudal bursa are—consistent with our finding—directed precloacally to paracloacally; according to Pérez Vigueras (1943), one pair of these papillae is situated postcloacally. The obtained measurements of individuals in our collection show—similarly to those of Pérez Vigueras (1943)—a considerable variability of this species. Contrary to the original description we registered a smaller length of the spicule (original description 0.580—0.595 mm; our measurement 0.42—0.55), and a larger egg size (original description 0.090—0.098 × 0.025—0.029; our measurement 0.102—0.109 × 0.041—0.048).

2. *Helminthoxys quentini* n. sp.

Fig. 2

Host: *Cupromys pilorides pilorides* (Say, 1822). **Location:** intestine. **Locality:** Guanahacabibes peninsula (Province of Pinar del Río).

Of the 6 hosts examined this species was identified in 2 (12 and 3 nematodes in the respective host). Out of the total of 15 nematodes 10 were males and 5 females (not fully mature).

Description: (All measurements in mm.) Colour of the body is white, cuticle with a marked transverse striation. The shape of oral mask, number of pseudolabia and denticles, their position, number of cephalic papillae and all the other morphologic features observed in these nematodes agree with the diagnosis of the genus *Helminthoxys*.

Male (holotype): Body length 5.24, maximum width 0.03. Nerve ring 0.20 from the anterior end of the body, excretory pore 1.12. Vestibule 0.032 deep. Oesophagus has a characteristic bulb, 0.22 long and 0.16 wide. Overall oesophagus length 0.73. Cervical alae are 0.029 wide. On the ventral side of the body 2 cuticular mamelons present, the nether one being 0.23 long, the upper one 0.20. The nether margin of the lower mamelon is located at 0.46 from the cloaca, that of the upper one at 0.890. Spicule 0.175 long, gubernaculum 0.038. Proximal end of spicule extending and measuring 0.022 in width and 0.038 in length. The posterior part of the body projects into a tail 0.49 long. Caudal bursa bears 3 pairs of precloacal papillae and 1 pair of long postcloacal papillae.

Female (allotype): Body 12.48 long, maximum width 0.79. Nerve ring 0.27 from the anterior end of the body, excretory pore 1.17. Vestibule 0.040 deep. Overall length of oesophagus 0.99. Bulb 0.29 long and 0.27 wide. Vulva 5.30 from the anterior end of the body, its margins not salient. Anus 1.31 from the tail end.

Variability of paratypes: Body length of males 5.73–6.26, maximum width 0.32–0.38. Overall length of oesophagus 0.73–0.87. Nerve ring 0.19–0.22 from the anterior body end, excretory pore 1.16–1.37. Bulb length 0.21–0.27, width 0.18–0.27. Nether cuticular mamelon 0.21–0.24 long, the upper one 0.18–0.25. Nether margin

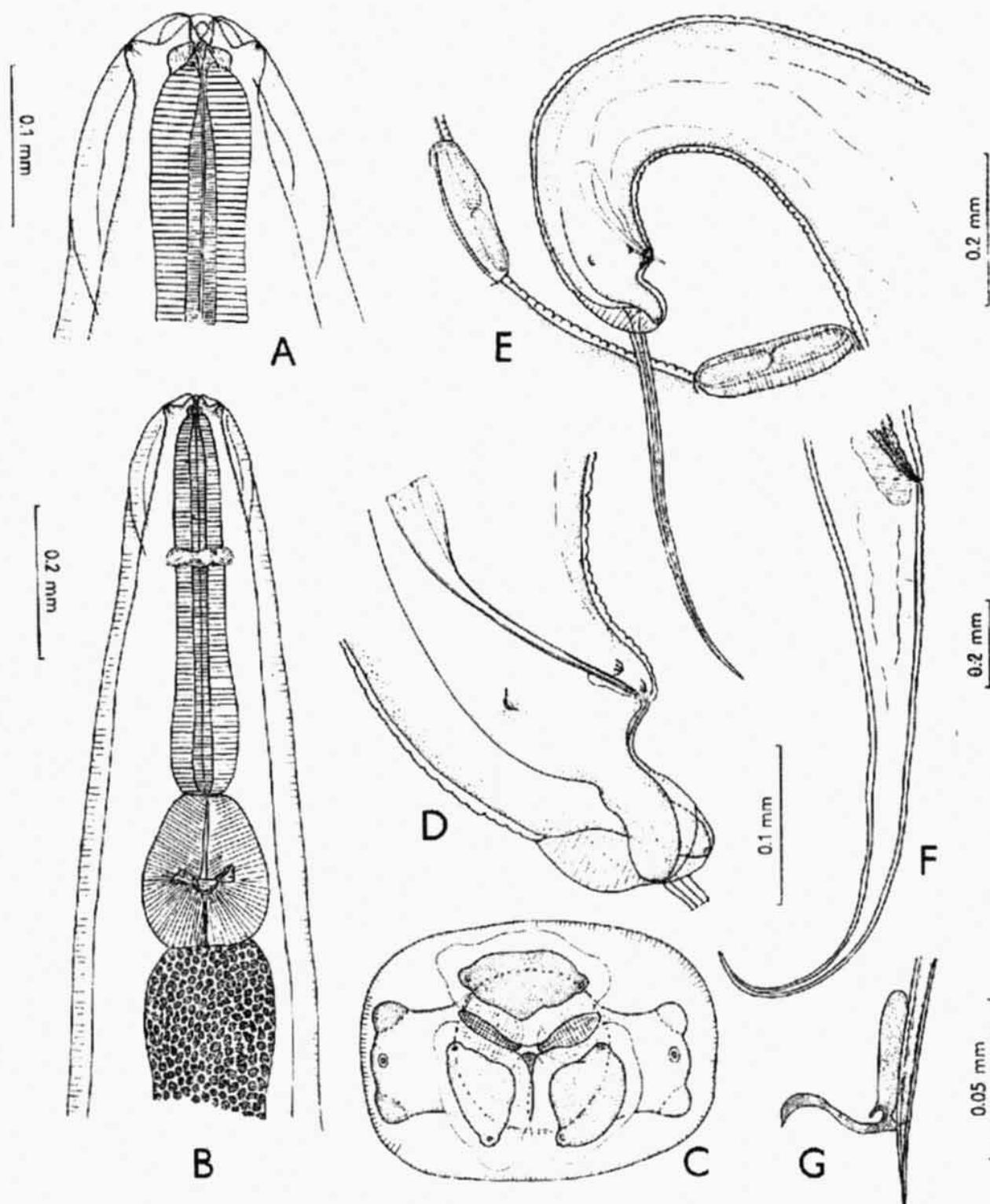


Fig. 2. *Helminthoxys quentini* n. sp. from the host *Capromys pilorides pilorides*. (A, B, C — holotype; F — allotype; C, D, G — paratypes). A — detail of the anterior end of the male body (dorsal view); B — anterior end of the male body (dorsal view); C — anterior end of the female body (apical view); D — detail of the posterior end of the female body (lateral view); E — posterior end of the male body (lateral view); F — posterior end of the female body (lateral view); G — distal end of spicule and gubernaculum (lateral view); Orig.

of the lower mamelon 0.51—0.66 from cloaca, that of the upper one 1.09—1.34. Spicule 0.175—0.219 long, gubernaculum 0.038—0.043. Tail length 0.44—0.45.

The body of females attains a length of 9.04—10.18 and a maximum width of 0.58 to 0.68. Nerve ring 0.23—0.25 from the anterior body end, excretory pore 1.40—1.75. Overall length of oesophagus 0.92—0.96, bulb being 0.24—0.28 long and 0.19—0.24 wide. Vulva 3.85—4.11 from the anterior end of the body. Anus 1.17—1.35 from tail end. Eggs were not present.

Discussion: Altogether 6 species — (*H. caudatus* Freitas, Lent et Almeida, 1937 from the host *Caviella australis* from Argentina, *H. urichi* Cameron and Reesal, 1951 from *Dasyprocta agouti* from the Trinidad Island, *H. effilatus* Schuurmans—Stekhoven, 1952 from *Lagidium viscacia* from Argentina, *H. velizi* Para Ormeno, 1953 from *Lagidium peruanum* from Peru, *H. freitasi* Quentin, 1969 from *Cercomys cunicularius* from Brazil, and *H. tiflophila* [Pérez Viguera, 1943] n. comb. from Cuba) have so far been listed to the genus *Helminthoxys*. All the above-quoted species as well as the new taxon *H. quentini* n. sp. — described in the present paper — are elements of neotropical fauna.

The described taxon *H. quentini* n. sp. differs distinctly from *H. tiflophila* in a smaller length and in the shape of the spicule, in a lesser length and in the shape of gubernaculum, and in a smaller tail length in males. A conspicuous difference between the two species consists also in the location of mamelons along the ventral side of the body and in their distance from the cloaca. Other species of the genus *Helminthoxys* differ from *H. quentini* n. sp. in a greater length of spicules which attain 0.32—0.40 with *H. caudatus*, 0.23—0.25 with *H. urichi*, 0.26—0.31 with *H. velizi*, and 0.63—0.65 with *H. freitasi*. Even the tail length of females is greater with the above-cited species (excluding *H. urichi*) than with that of *H. quentini* n. sp. The female of *H. urichi* differs from that of *H. quentini* in the location of vulva, too. (In the former species vulva is placed in the posterior body half, 1.1—1.6 from the anus; in the latter one in the anterior half of the body, 3.84—5.30 from the anterior end). Except the differences in tail-lengths of males and females, *H. quentini* differs distinctly from the species *H. effilatus* in the shape of the proximal spicule end (which is markedly hooklike in the latter species) and in the shape of the gubernaculum. Also the distribution of cuticular mamelons (their distance from the cloaca) is entirely different in both species.

The holotype and 2 paratypes are deposited in the collection of the U.S. National Museum, Beltsville, Maryland; the allotype and the remaining paratypes in that of the Institute of Parasitology, Czechoslovak Academy of Sciences, Prague. The new taxon has been named in honour of Dr. J. C. Quentin.

ПРИМЕЧАНИЯ К КУБИНСКИМ ВИДАМ НЕМАТОД РОДА *HELMINTHOXYS* (НЕМАТОДА: SYRNUSIDAE)

В. Баруш

Резюме. Исследования по морфологии вида *Carolodelatorella tiflophila* Pérez Viguera, 1943 от хозяина *Capromys prehensilis* показали, что все морфологические признаки этого таксона согласуются с диагнозом рода *Helminthoxys* Freitas, Lent et Almeida 1937. Мы следовательно перевели этот вид в род *Helminthoxys* под наименованием *H. tiflophila* (Pérez Viguera, 1943 n. comb.) и добавили его новое подробное описание на основании нашего материала. Таким образом родовое наименование *Carolodelatorella* Pérez Viguera, 1943 становится синонимом рода *Helminthoxys* Freitas, Lent et Almeida, 1937. Также дано описание нового таксона *H. quentini* n. sp. от хозяина *Capromys pilorides pilorides*. Этот вид отличается от до сих пор описанных видов рода *Helminthoxys* (*H. caudatus*, *H. urichi*, *H. velizi*, *H. freitasi* и *H. tiflophila*) меньшей спикулой и длиной хвоста у самцов и самок. От вида *H. effilatus*, *H. quentini* отличается формой проксимального конца спикулы, формой рулька и расположением между кутикулярными дисками и клоакой.

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THE OCCURRENCE OF SOME HELMINTH SPECIES IN BIRDS AND MAMMALS FROM YUGOSLAVIA

In 1970, we obtained a small collection of nematodes from birds and mammals, captured during the joint Czechoslovak-Yugoslav expedition in Yugoslavia (S. R. Bosnia and Herzegovina). Examination of the hosts revealed a total of 6 nematode species, which all are new to Yugoslavia; moreover, two of these species were found in new definitive hosts.

1. *Molinostrongylus alatus* (Ortlepp, 1932)

One ♂ nematode was obtained from the small intestine of an adult ♀ of the species *Myotis myotis* (2 hosts examined), captured in the locality Cazin, cave Kula Radetina, on September 29, 1970. According to Baruš and Ryšavý (Folia parasit. (Praha) 18: 1—14, 1971) this species, parasitic in hosts of the families Vespertilionidae and Rhinolophidae, is distributed throughout the Old World. Length of gubernaculum of the male from our material 80 μ , length of spicules 299; their distal end divides into two branches.

2. *Strongylacantha glycirrhiza* van Beneden, 1873

Two ♂♂ and one ♀ nematodes found in the small intestine of one of the two *R. ferrumequinum* examined. Locality: Cazin, cave Kula Radetina, collected on September 29, 1970. These nematodes are specific parasites of members of the family Rhinolophidae; their geographical distribution is the same as that of the foregoing species.

3. *Syphacia montana* Yamaguti, 1943

Of the 6 *Microtus arvalis* examined, this species was found in the large intestine of 5 of these hosts. Locality: sinkholes in the karst near the settlement Ravno (Paklina Planina); collected on September 25, 1970. The material consisted of one ♂ and 95 ♀♀.

We assume this to be a specific parasite of hosts of the subfamily Microtinae of the paleoarctic region. Until the present, this parasite has been recorded from Japan from the hosts *Cle-*