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On Two New Nematode Parasites (Trichostrongyloidea: Molineidae) from Amphibians and Reptiles

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ABSTRACT: *Kentropyxia sauria* gen. et sp. n. from the lizard *Kentropyx calcaratus* (Teiidae) of Brazil most closely resembles the genus *Oswaldocruzia* in the morphology of the caudal bursa, presence of a synlophe, and lack of a gubernaculum. It may be distinguished from *Oswaldocruzia* by the presence of a corona radiata on the cephalic extremity and by bursal rays 8 terminating beside rays 6. *Oswaldocruzia polycercus* sp. n. from the amphibian *Bufo polycercus* of Cameroon, Africa, is closely related to the group of *Oswaldocruzia* species in Central Africa that have spicules divided into five distal points. It may be distinguished by the morphology of the spicule points.

Two new species of trichostrongyles (Molineidae) are described from material in the Museum National d'Histoire Naturelle, Paris: *Kentropyxia sauria* gen. et sp. n. from a Brazilian lizard, and *Oswaldocruzia polycercus* n. sp. from an African toad.

Results

Kentropyxia gen. n.

Trichostrongyloidea, Molineidae, Molineinae. Corona radiata present, formed by 9 unequal lappets. Bursal rays 2–3 and 4–6 forming 2 separate groups each with common base; rays 2–3 parallel, ray 4 diverging from 5–6, which are parallel. Terminal papilla of ray 8 close to ray 6.

TYPE SPECIES: *Kentropyxia sauria* sp. n.

Kentropyxia sauria sp. n.

TYPE MATERIAL: Male holotype, female allotype, 2 male and 4 female paratypes, Museum National d'Histoire Naturelle (MNHN) No. 207RL.

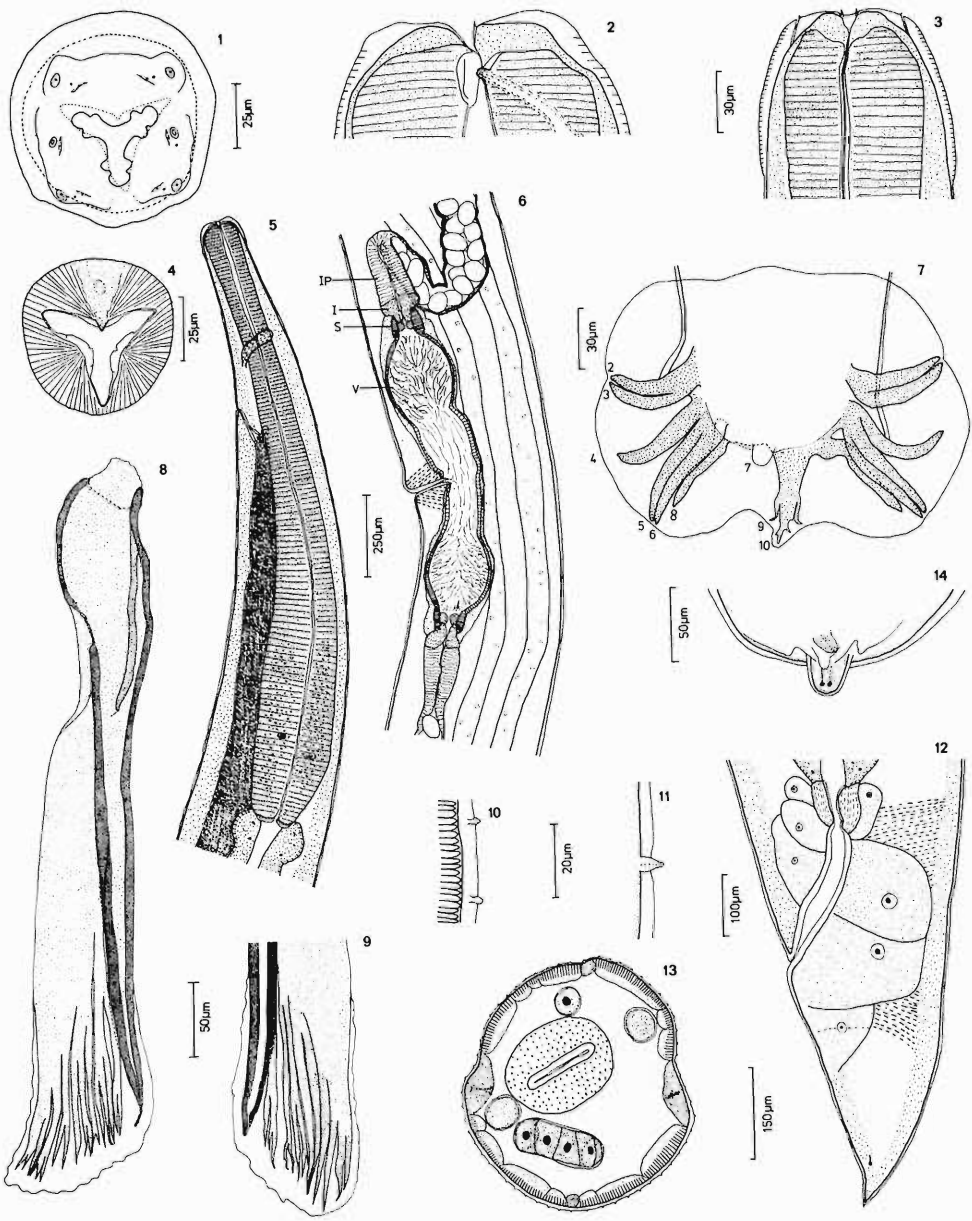
HOST: *Kentropyx calcaratus* Spix (Teiidae).

LOCALITY: Belem, Brazil.

LOCATION: Intestine.

DESCRIPTION (Figs. 1–14): Oral opening triangular, surrounded by corona radiata in form of 9 unequal lappets (3 dorsal, 3 on each subventral side). Mouth opening into short funnel-shaped cavity. Cephalic lips not present, but cephalic extremity with dorsal and 2 subventral elevations bearing papillae and amphids. Six small inner papillae, 6 small outer papillae, and 4 cephalic papillae present. Small dorsal esophageal tooth present, projecting into thick cuticular pad on opposite side of esophagus. Cephalic inflation conspicuous. Cervical alae absent. Excretory pore at anterior ⅓ of esophagus. Cervical deirids small, digitiform, located near excretory pore. Synlophe with numerous small ridges perpendicular to body and extending from behind cephalic inflation to posterior portion of tail in females and to bursa in males. Ridges of synlope with small supports. Number of ridges variable, slightly less numerous at anterior and posterior ends. In midbody males with 50 crests, females with 58.

MALE (holotype): Total length 12.7 mm, maximum width 293 μm. Cephalic



Figures 1–14. *Kentropyxia sauria* **gen. et sp. n. 1. Anterior extremity, apical view. 2. Anterior extremity, lateral view. 3. Anterior extremity, dorsoventral optical section at level of amphids. 4. Anterior end of esophagus, section at level of dorsal tooth. 5. Anterior end, lateral view. 6. Ovejector, lateral view. 7. Caudal bursa, ventral view. The numbering of the rays is indicated. 8. Left spicule, ventral view. 9. Distal end of left spicule, dorsal view. 10. Detail of crests of synlophe, transverse section. 11. Deirid, lateral view. 12. Tail of female, lateral view. 13. Synlophe of female near midbody. 14. Genital cone of male, ventral view. Abbreviations: I, infundibulum; IP, intermediary portion; S, sphincter; V, vestibule.**

inflation 84 μm long, 103 μm wide. Nerve ring 406 μm, excretory pore 588 μm from anterior extremity. Esophagus 1.22 mm long. Bursa with thick dorsal ray extending slightly posterior to lateral lobe. Prebursal rays 1 not observed. Rays 2–3 with common origin, parallel, terminating at edge of bursa. Rays 4–6 with common origin: 4 separating from 5–6 and curved anterolaterally; 5–6 parallel and directed posterolaterally. Rays 8 originating from base of dorsal ray, parallel to rays 5–6. Genital cone conspicuous, with 2 papillae. Ventral edge of anus with single digitiform papilla and papilla-like cuticular projection. Prebursal papillae not conspicuous. Spicules equal, 513 μm long, shaft divided in distal ⅓ into robust outer process and thin, wide, dorsal inner and ventral inner processes. Outer process forming single point. Dorsal and ventral inner processes divided distally into 14 and 18 fine points, respectively. Gubernaculum absent.

FEMALE (allotype): Total length 18.4 mm, maximum width 390 μm. Cephalic inflation 100 μm long, 122 μm wide. Nerve ring 390 μm, excretory pore 620 μm, and vulva 12.0 mm from anterior extremity. Esophagus 1.71 mm long. Anterior portion of ovejector with vestibula 212 μm, sphincter 252 μm, infundibulum 75 μm, intermediary portion (thickened terminal portion of uterus) 281 μm long; posterior portion divided into parts 151 μm, 235 μm, 70 μm, and 312 μm long, respectively. Sphincters with markedly thick walls. Anterior uterus with 211 eggs, posterior with 243. Eggs 91–100 μm long and 53–56 μm wide, at morula stage. Tail thick, 206 μm long, with sharp terminal point.

PARATYPES: Dimensions of 2 males and 4 females are as follows: *Males*—length 12.1–13.9 mm; nerve ring 350–405 μm, excretory pore 556–725 μm from anterior extremity; esophagus 1.17–1.36 mm and spicules 500–531 μm long. *Females*—length 16.8–19.1 mm; nerve ring 367–405 μm, excretory pore 544–582 μm, vulva 11.2–12.6 mm from anterior extremity; esophagus 1.48–1.86 mm, tail 231–234 μm long.

Remarks

In bursal morphology, presence of a simple synlophe, and lack of gubernaculum, *Kentropyxia* gen. n. most closely resembles *Oswaldocruzia* (Molineinae). However, the presence of a vestigial corona radiata easily distinguishes it from all *Oswaldocruzia* for which the cephalic end has been studied in apical view. Because the presence of a corona radiata in the Trichostrongyloidea is considered to be a primitive character indicating a phyletic relationship to the Strongyloidea, a new genus has been proposed. *Kentropyxia* may also be distinguished from *Oswaldocruzia* by bursal rays 8, which are parallel to, and terminate beside, rays 6. In all *Oswaldocruzia* species rays 8 are curved away from rays 6 in their distal portions.

***Oswaldocruzia polycercus* sp. n.**

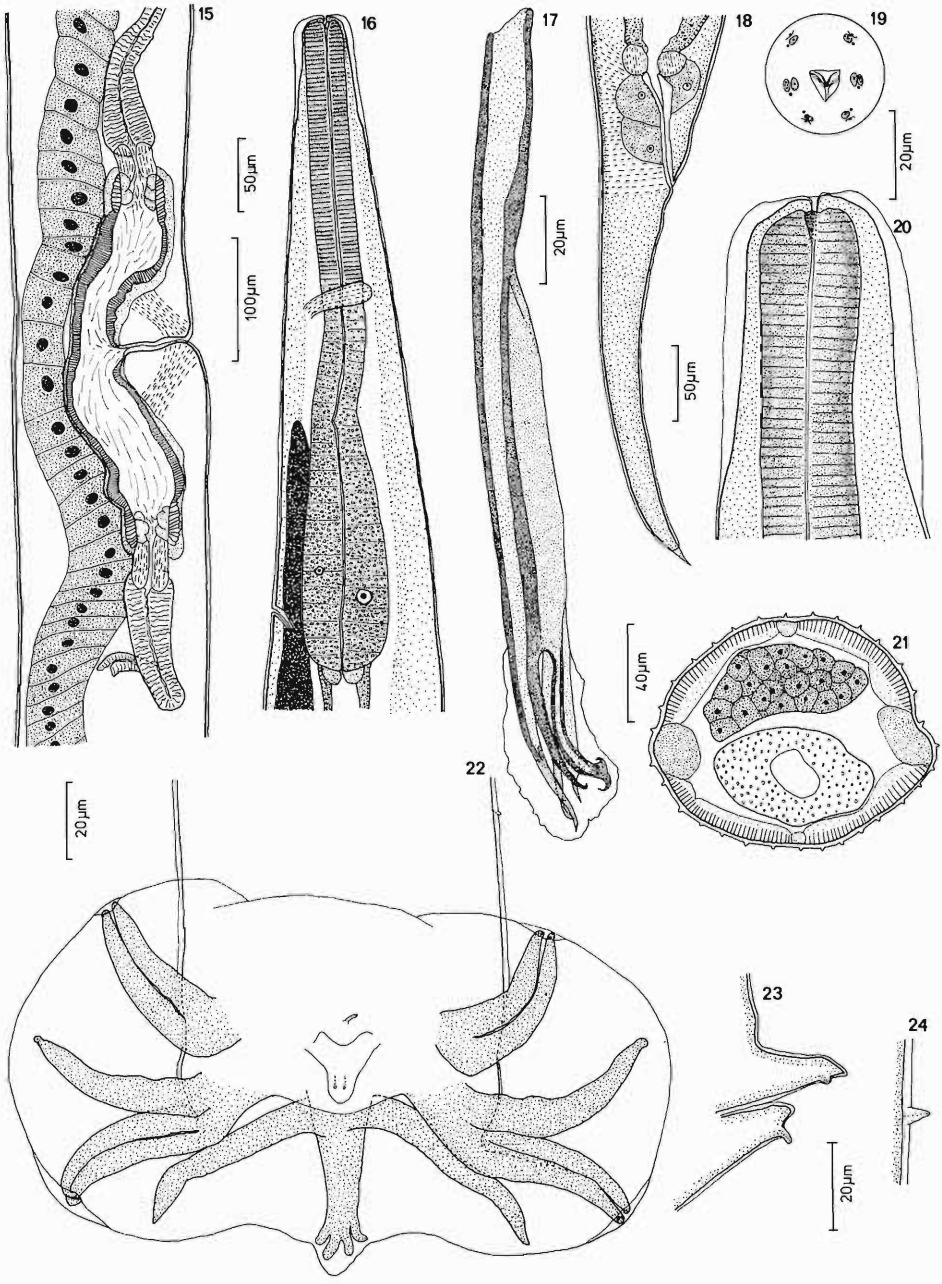
TYPE MATERIAL: Male holotype, female allotype, 2 male and 3 female paratypes, MNHN 95KB.

HOST: *Bufo polycercus* Wern. (Bufonidae).

LOCALITY: Kribi, Cameroon.

LOCATION: Intestine just posterior to stomach.

DESCRIPTION (Figs. 15–24): Trichostrongyloidea, Molineidae, Molineinae. Oral opening triangular, opening into short funnel-shaped cavity lined with thin cuticle. Conspicuous dorsal esophageal tooth present. Six conspicuous inner papillae, 6



Figures 15–24. *Oswaldocruzia polycercus* **sp. n. 15. Ovejector, lateral view. 16. Anterior end, lateral view. 17. Spicule, ventral view. 18. Tail of female, lateral view. 19. Anterior extremity, apical view. 20. Anterior extremity, lateral view. 21. Synlophe of female near midbody. 22. Caudal bursa, ventral view. 23. Genital cone of male, lateral view. 24. Deirid, dorsoventral view.**

small outer papillae, and 4 small cephalic papillae present. Cephalic inflation conspicuous. Cervical alae absent. Excretory pore near posterior end of esophagus. Cervical deirids small, digitiform, located near excretory pore. Synlophe with numerous small ridges perpendicular to body and extending from just behind

the cephalic inflation to midregion of tail in females and to bursa in males. Number of ridges variable, less numerous at anterior and posterior ends. In midbody males with about 31 ridges, females with 54.

MALE (holotype): Total length 5.2 mm, maximum width 110 μm. Cephalic inflation 65 μm long, 47 μm wide. Nerve ring 187 μm, excretory pore 368 μm from anterior extremity. Esophagus 418 μm long. Bursa with thick dorsal ray, dorsal lobe not extending posterior to lateral lobe. Rays 2–3 with common origin, parallel, terminating at edge of bursa. Rays 4–5–6 with common origin: 4 separating from 5–6 and curved anterolaterally; 5–6 parallel and directed posterolaterally. Rays 4 terminating 6 μm from edge of bursa, rays 5–6 terminating at edge of bursa. Rays 8 originating from base of dorsal ray, terminating 3 μm from edge of bursa. Genital cone elongate, with 2 small papillae. Ventral edge of anus with single digitiform papilla. Prebursal papillae inconspicuous. Spicules equal, 172 μm long, shaft with large ala-like expansion on inner side extending from anterior ⅓ to distal end. Shaft divided in distal ¼ into 2 sharply pointed processes, ala-like expansion divided distally into 2 sharply pointed processes and 1 robust process forming anvil-like terminal end. Gubernaculum absent.

FEMALE (allotype): Total length 10.5 mm, maximum width 140 μm. Cephalic inflation 62 μm long, 47 μm wide. Nerve ring 193 μm, excretory pore 334 μm, and vulva 7.1 mm from anterior extremity. Esophagus 434 μm long. Anterior portion of ovejector with vestibula 70 μm, sphincter 48 μm, infundibulum 44 μm, intermediary portion 152 μm long; posterior portion divided into parts 92 μm, 35 μm, 52 μm, and 180 μm long, respectively. Anterior uterus with 29 eggs, posterior with 23. Eggs 94–100 μm long and 62–69 μm wide, at morula stage. Tail slender, 258 μm long, with conspicuous terminal spike about 15 μm long. Phasmids on posterior ½ of tail.

PARATYPES: Dimensions of 2 males and 3 females are as follows: *Males*—length 5.8–6.4 mm; nerve ring 163–209 μm, excretory pore 306–368 μm from anterior extremity; esophagus 353–359 μm and spicules 203–218 μm long. *Females*—length 11.8–13.2 mm; nerve ring 193–200 μm, excretory pore 350–403 μm, vulva 7.9–9.6 mm from anterior extremity; esophagus 443–497 μm, tail 322–353 μm long.

Remarks

In common with six *Oswaldocruzia* species from amphibians and reptiles of Africa (see Hörchner, 1963; Durette-Desset and Vaucher, 1979), *O. polycercus* sp. n. has spicules divided in the posterior quarter into five points. No other species outside of Africa have spicules of this type. Among this group, *O. polycercus* is easily differentiated from *O. chamaeleonis* Hörchner from *Chamaeleo* sp. of Africa or Madagascar (locality not given precisely) and *O. cricogaster* Durette-Desset and Vaucher from *Phrynobatrachus cricogaster* of Cameroon by the shape of the dorsal lobe of the bursa. It may be easily differentiated also from *O. johnstoni* Durette-Desset and Vaucher from *Pedropedetes johnstoni* of Cameroon in that it lacks cervical alae, and from *O. gracilipes* Durette-Desset and Vaucher from *Bufo gracilipes* of Cameroon in that rays 5–6 are relatively shorter. Finally the spicules of *O. polycercus* have four slender, sharply pointed, distal processes and one robust process with an anvil-like end, whereas *O. gassmanae*

Durette-Desset and Vaucher from *Chamaeleo wiedersheimi* of Cameroon has three slender and two robust processes, and *O. perreti* Durette-Desset and Vaucher from *Bufo latifrons* of Cameroon has three straight processes, one process that is curved proximally, and one robust process.

Literature Cited

Durette-Desset, M. C., and C. Vaucher. 1979. Étude d'une collection de nématodes parasites d'amphibiens et de reptiles du Cameroun. I—Trichostrongyloidea (Nematoda). Rev. Suisse Zool. 86:509–525.

Hörchner, F. 1963. Zur Parasitenfauna der Chameleontidae und Agamidae (Squamata). Z. Parasitenkd. 22:537–544.

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