NOTES ON AFRICAN HAEMAPHYSALIS TICKS. XIV. DESCRIPTION OF ADULTS OF H. (RHIPISTOMA) PARALEACHI SP. N., A CARNIVORE PARASITE OF THE H. (R.) LEACHI GROUP (IXODOIDEA: IXODIDAE)

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ABSTRACT: Haemaphysalis (Rhipistoma) paraleachi sp. n. is described from males and females taken from a civet, Viverra civetta (Schreber), in Cameroun. A member of the leachi subgroup of the H. (R.) leachi group of African carnivore parasites, this new species is related to H. (R.) leachi (Audouin) 1827, H. (R.) moreli Camicas, Hoogstraal, and El Kam- mah (1972), and H. (R.) punctaleachi Camicas, Hoogstraal, and El Kammmah (1973).

Data are presented herein only for adult H. (R.) paraleachi parasitizing medium-sized carnivores in Africa. Immature stages probably feed chiefly on rodents but cannot be identified with confidence until laboratory-reared samples from known parents are available for study.

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Haemaphysalis (Rhipistoma) paraleachi sp. n.

Large African carnivore haemaphysaline (Figs. 1–20)

Holotype: Male, from civet, Viverra civetta (Schreber), Nanga-Eboko (4°41′N, 12°22′E), 200 m altitude, Cameroun, 1956, P.-C. Morel (HH42,293); deposited in Rocky Mountain Laboratory (RML110,051).

Allotype: Female, data and depository as for holotype.

Paratypes: Total: 203, 49, with same collecting data (RML). Paratypes are deposited in the collections of J.-L. Camicas (ORSTOM), P.-C. Morel, and the Rocky Mountain Laboratory.

DESCRIPTION

Male (Figs. 1, 2, 5–12)

Length from palpal apices to posterior body margin 3.45 to 3.99 (avg 3.81) mm; breadth 1.71 to 1.88 (avg 1.79) mm. Color brownish yellow.

Capitulum (Figs. 5–7): Basis capituli dorsally ca. 1.6 (1.5–1.8) mm; corona ca. 0.4 (0.3–0.5) mm; cornua ca. 0.6 (0.5–0.7) mm; spur ca. 0.6 (0.5–0.7) mm. Basis capituli (Figs. 5–7) from posterior margin of segment 2, excluding spur, to apex of segment 3. Segment 1 a narrow pedicle, dorsal external profile as in leachi; combined palpal breadth 2 times breadth of basis capituli; each palpus ca. 1.5 times as broad as long (from posterior margin of segment 2, excluding spur, to apex of segment 3). Segment 1 a narrow pedicle, minute dorsally, seta single ventrally. Segment 2 ca. 1.5 times as broad as long; posteriorodorsal margin proximally concave, distally forming a sharply triangular, elevated, posteriorly directed spur with external profile continuing anteriad in a diverging, mildly concave line to sharply pointed posertoroeentral junction; posteroventral margin proximally concave, distal spur elongately triangular, arising nearer insertion than dorsal spur; external profile longer than dorsally; interneural margin mildly bulging anteriorly; dorsointernal setae number one or two; ventrointernal setae number five to seven, fringed; dorsal and ventral setae number five and six, respectively. Segment 3 broadly triangular, 1.8 times as broad as long, ca. 0.6 times as long as 2; posterodorsal margin curving; ventral spur robust, slightly curving, bluntly pointed apex at ca. 0.25 times as long as denticles, hooklets dense. Dental formula 3/3 (17 specimens) or 5/5 (3 specimens), denticles in files of seven or eight.

Scutum (Fig. 1) 1.8 to 2.0 times as long as broad; anterior emargination broad, deep, scapulae pointed;
margins convex to indentation at level of coxae II, thence mildly convex to level of spicular plates (bordered by narrow area of soft integument), posteriorly rather narrow. Lateral grooves deep, distinct, extending anteriorly to level of coxa II, posteriorly enclosing one festoon (festoon 2 may be partially enclosed). Cer- vical pits narrow, deep, short, converging; cervical grooves shallow, diverging, length variable. Puncta- tions numerous; mostly medium sized, discrete, well separated; some small, superficial; none in narrow pos- teromedian line. Festoons number 11.

Venter (Fig. 2) and genital area (Fig. 8) as illustrated. Spiracular plates (Fig. 9) 1.8 times as long as broad; outline subovate; dorsal projection triangular. Legs (Figs. 1, 2, 10–12): Coxae (Fig. 10) I to IV spur each small, broadly triangular, extending somewhat beyond coxal margin; setae long, medium size, excluding anteroexternal group 15 to 20 on I, eight to 12 each on II to IV. Trochanters I dorsal shield (Fig. 1) moder- ately large, triangular; trochanters ventrally (Fig. 10) lacking spurs. Femur IV (Fig. 11) ventrointemal setae number eight or nine, each ca. 0.6 times as long as breadth of femur at point of insertion. Tarsi (Fig. 12) II to IV short, stout; dorsal surfaces tapering from pseudosuture; ventral surfaces each with a small apical hook and a slight subproximal ridge. Claws size moderate. Pulvilli large, reaching curvature of claws.

Female (Figs. 3, 4, 13–20)

Differ from male chiefly in size and sexual charac- ters. Length (unfed) 3.59 to 3.93 (avg. 3.87) mm; breadth 1.77 to 1.88 (avg. 1.82) mm.

Capitulum (Figs. 13–15): Basis capituli dorsally 2.5 times as broad as long (including cornua); external mar- gins slightly diverging anteriorly; cornua broadly tri- angular, bluntly pointed, ca. 0.25 times as long as base of basis capituli; porose areas elongately oval, tilted, moderate sized, widely spaced. Basis capituli ventrally as illustrated. Pulvilli similar to those of male, except as follows. Combined palpal breadth 1.6 times breadth of basis capituli. Each palpus ca. 1.1 times as broad as long; external profile more elongate; apex narrower. Segment 2 posteroventral margin almost straight from insertion to ca. midheight, thence abruptly diverging (no spur) anteriad to sharply pointed posteroexternal junction; external profile may be mildly convex; inter- nodorsal margin more strongly bulging anteriorly, dorsointemal and ventrointemal setae number two or three and seven to nine, respectively. Segment 3 length and breadth equal; length equalling that of segment 2; ventral spur apex at or only slightly posterior to level of intersegmental suture. Hypostome (Fig. 15) dental formula 5/5 (3 specimens) or 6/6 (2); denticles in files of 10 to 12.

Scutum (Fig. 3) ca. 1.3 times as long as broad; ante- rior emargination broad, deep; scapulae pointed; margins diverging (convex) to level of coxa II, mildly con- verging to level of coxa III, posteriorly obtusely con- verging to narrow, rounded median area. Cer- vical grooves long, narrow, converging to level of coxae II, thence diverging. Punctations essentially as in male anteriorly but somewhat larger and deeper (small puncta- tions rare or absent).

Dorsum (Fig. 3) and venter (Figs. 4, 16, 17) as illustrated. Genital operculum (Fig. 16) elongate, laterally subparallel, posteriorly rounded. Spiracular plate (Fig. 17) broadly subovate; dorsal projection broadly tri- angular.

Lects (Figs. 3, 4, 18–20) as in male, except as follows. Coxae III and IV spurs relatively somewhat larger; setae (excluding anteroexternal group) number ca. 14 on I, six to 10 each on II to IV.

Nymph and larva

These stages are unknown from laboratory-reared materials, which are required for accurately associating immature and adult stages.

DIAGNOSIS (ADULTS)

A large, elongate haemaphysaline (subgenus Rhip- istoma; group leachi, subgroup leachi) (total length [mm]: d, avg. 3.81 [3.48–3.99], s, avg. 3.87 [3.59–3.93]; breadth: d, avg. 1.79 [1.71–1.88], s, avg. 1.82 [1.77 to 1.88]). Basis capituli dorsally ca. 1.6 (8) or 2.0 (O) times as broad as long; external margins essentially straight (8) or slightly diverging anteriorly (8); cornua elongately (8) or broadly (8) triangular, ca. 0.5 (8) or 0.25 (8) times as long as base of basis capituli; porose areas (8) oval, tilted, widely spaced. Pulvilli broadly salient (leachi type), 2.0 (8) or 1.6 (8) times as broad as basis capituli; each palpus ca. 1.5 (8) or 1.1 (8) times as broad as long. Segment 1 ventral seta single. Segment 2 posterodorsal margin proximally curving anteriad, distally as a large triangular spur; posteroventral margin (8) proximally concave, medially as a large spur or (8) proximally almost straight, medially abruptly diverging anteriad; internodorsal margin anteriorly mildly (8) or strongly (8) bulging; dorsointemal setae number one or two (8) or two or three (8); ventrointemal setae number five to seven (8) or seven to nine (8). Segment 3 ca. 0.6 times as long as 2 (8) or as long as 2 (8); ventral spur robust, curving, bluntly pointed apex at midheight of segment 2 (8) or near intersegmental suture (8). Hypo- stome dental formula 5/5 or 5.5/5.5 (8) or 5/5 or 6/6 (8); denticles in files of seven or eight (8) or 10 to 12 (8). Scutum (8) 1.8 to 2.0 times as long as broad; mar- gins convex to indentation at level of coxae II, thence mildly convex to level of spicular plates, posteriorly narrowly rounded; lateral grooves long, deep, enclosing one festoon (festoon 2 may be partially enclosed); puncta- tions numerous, discrete, mostly medium size, some small, superficial. Scutum (leachi type) ca. 1.3 times as long as broad, margins convex to level of coxae II, mildly con- verging to level of coxa III, posteriorly obtusely con- verging to narrow, rounded median area; punctations as in 8 but somewhat larger and deeper. Genital oper- culum (8) elongate, posteriorly rounded. Spiracular plates subovate, dorsal projections triangular. Coxa I to IV spur each small, broadly triangular (III and IV spur relatively larger in 8); setae (excluding antero- ventral group) on I number ca. 15 to 20 (8) or ca. 14 (8), on II to IV number eight to 12 (8) or six to 10 (8). Femur IV ventrointemal setae number eight to 10. Tarsi short, each with a small apicoventral hook. Pul- villi large, reaching curvature of claws.

RELATED SPECIES

Haemaphysalis (R.). paraleachi is easily differ- entiated from the three other species constituting the leachi subgroup of the H. (R.) leachi group (leachi [Hoogstraal, 1958], moreli [Cam-
icas et al., 1972], and punctaleachi [Camicas et al., 1973]) by the 5/6 or 6/6 dental formula (4/4 in other species) and by larger avg. size (mm) (♂: 3.8 × 1.8 [paraleachi], 2.6 × 1.2 [leachi], 2.0 × 0.9 [moreli], 2.7 × 1.3 [punctaleachi]).

In leachi, other characters differing from those in paraleachi are on the palpi (segment 3 ventral spurs longer), scutum (margins laterally subparallel in male, posteriorly more angular in female), punctations (larger and deeper in both sexes), spiracular plates (large, with small dorsal projections), and pulvilli (shorter).

In punctaleachi, other characters differing from those in paraleachi are on the basis capituli (external margins diverging), palpi (female segment 2 posteroventral margin broadly angular proximally, segment 3 ventral spurs straight, more acutely pointed in both sexes), and male scutum (broadly rounded posteriorly; punctations dense, only medium sized).

In moreli, other characters differing from those in paraleachi are on the palpi (segment 2 internodorsal margin strongly bulging in both sexes; posterodorsal margin broadly triangular proximally; segment 3 posterodorsal margin forming an angular projection at internal juncture, this projection especially pronounced in female), male scutum (shagreened), female operculum (broadly subtriangular), spiracular plates (outlines differing), and legs (setae many fewer and shorter; coxae IV spurs reduced to rounded ridges; pulvilli shorter).

LITERATURE CITED

