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The Tenebrionidae of Southern Africa. XXXIII. — Description of the larvae of *Gonopus tibialis* FABRICIUS and *Gonopus agrestis* FAHRAEUS (*Gonopina*, sensu Koch 1956).

L. SCHULZE

On the Body Temperatures of Birds on the Carp — Transvaal Museum Namib Desert Expedition.

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THE TENEBRIONIDAE OF SOUTHERN AFRICA

XXXIII. — Description of the larvae of *Gonopus tibialis* FABRICIUS and *Gonopus agrestis* FAHRAEUS (*Gonopina*, sensu KOCH 1956).

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(With 3 Plates and 4 Figures)

The present paper is the result of an assistantship grant awarded to Dr C. Koch, Pretoria, by the S.A. Council for Scientific and Industrial Research, and was carried out under his kind supervision. It deals with the description of the first known larvae of the genus *Gonopus*, which were reared in the Transvaal Museum's Insectarium by the late Mr. Isaac Mokgoatsane, technical assistant at the Transvaal Museum.

Both species *Gonopus tibialis* and *agrestis* occur also in South West Africa (cf. GEBIEN, H., *Abhandl. Geb. Auslandsk. Hamburg. Univ.*, 1920, 5, C, 2, pp. 116, 117).

Gonopus tibialis FABRICIUS

The description is based on a larva 35 mm long, 4 mm broad, head-capsule 3.8 mm wide (Pl. Ia). Body almost cylindrical of subequal width, fairly strongly sclerotized; sclerites subquadrate to transverse, not constricted between segments; ninth abdominal tergum strongly sclerotized latero-ventrally, disc slightly hollowed, laterally with a sharply raised ridge which flattens basally, apex round to more pointed-ovate; cuticle yellowish, glabrous, smooth, on head and ninth tergite rugose; posterior margin of segments, disc of ninth abdominal tergite and pattern on head and eighth abdominal tergum orange in fresh specimens, light brown in older alcohol material.

Head (P. IIIa, b. Figs. 1—3)

Convex above, twice as wide as long; frontal sutures very distinct, coronal and pleurostomal sutures faint; anterior frontal margin straight with one long, slender seta on each side; epicranial halves with a straight, obliquely sloping margin anteriorly, laterally rounded and setiferous; below the antennal insertion a group of three setae¹; on frons a pattern² composed of more or less aggregated

¹ In larvae from the size of about 8.5 mm (probably third stage) to about 23 mm (head capsule 2 mm) are found ocular spots; two which are mostly fused into one underneath the before mentioned setae, and three single ones in a transverse row laterally below the antennal insertion. The two first stages and older larvae from 24—40 mm length have no detectable ocelli.

² This pattern may be absent in younger larvae but is very distinct in older stages.

irregularly rounded spots with a light yellow centre surrounded by a dark orange or brown contour; the pattern starts from a compact base, accompanies the frontal sutures and sends two branches medianly subparallel to the former; in the transverse median line of the epicranial halves, near to frontal suture one large circular spot with darker outline is always present even in young stages, below which a seta is inserted; more laterally an aggregation of irregular spots. Clypeus trapezoidal, broadest at base, about two and a half as wide as long, the basal half rugose and more strongly sclerotized than the almost transparent smooth apical half; the posterior two-thirds of the first showing an orange semi-circle, the anterior portion ivory with eleven short, erect, orange setae and a long, slender seta on each side at the same height where the two halves meet. Labrum transverse, rounded laterally, almost two and a half as wide as long; posterior third orange; disc of anterior portion medianly with a row of orange, pointed setae a third longer than those on clypeus, exterior margin bordered by very fine, long setae. Epipharynx (Pl. IIIb) transverse-ovate; the basal sclerotized band distally prolonged into four rather short triangular processes, the exterior ones longer and curved inwardly; the anterior margin at the rotundity set with about six broad, pointed setae on each side, between them some finer and smaller setae; medianly on the anterior third a group of six sensory punctures in two vertical rows, the two lower ones on each side nearer to each other; slightly below the centre are two pointed, strongly sclerotized setae joined by a transverse row of ten small sensory punctures; medianly situated, on top of the sclerotized band are two very heavily sclerotized triangular processes which project ventrally, below them are eight sensory punctures; the lateral surface of disc is occupied by fine, equally spaced, sharply pointed minute trichoid processes, which become larger and fringe-like medianly where they border laterally the area of the median setae and sensory punctures, below the latter is a clear, subsquare area reaching up to the posterior band, and two bare stripes laterally to the anterior sensory punctures. Antennae originating from a broad articulating membrane; the first two segments tubiform of about equal length, the second one a quarter narrower, dorsally on apex with a small brown seta (sometimes broken off), main sensorium narrowly ring-shaped, open dorsally; third segment a fifth of second with two setae on top and numerous micro-processes. Mandibles (Fig. 1, 2) large, showing to a great extent dorsally; apices bifid, apical teeth strongly pointed; in dorsal view shape of left and right mandible differing considerably; left mandible with a small triangular tooth between apical tooth and molar part, the latter gently rounded, hardly projecting; apical tooth on right mandible large, about a third of the whole length, the prolongation to the strongly projecting molar part goes off in a rectangle with a small dental process in front of the triangular, pointed molar; the exterior, sharply defined margin goes subhorizontally at apex thence strongly curved convexly; opposite to the molar part some setae are visible from ventrally and one seta is inserted posteriorly on the edge of dorsal disc, the sharp margin ending in front of it; in ventral view the lower apical tooth of right mandible small and almost fused with first; the molar part shows two obtuse, triangular processes; the second apical tooth of left mandible is strongly developed, the molar part has a triangularly pointed and strongly projecting process; in both mandibles the ventral excavation is extremely large, occupying nearly half of the width; on the oppo-