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***HUITACA VENTRALIS*, N. GEN., N. SP., WITH A
DESCRIPTION OF A GLAND COMPLEX NEW TO
CYPHOPHTHAMLMIDS (OPILIONES: CYPHOPHTHALMI)**

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ABSTRACT

Huitaca ventralis, new genus and species, is described from Colombia. Closest to *Metagovea*, the new genus differs in the form of the penis and ventral thoracic complex and proportions of the chelicera. A new exocrine gland complex, opening on the first abdominal sternite, is briefly described; its function is not known.

INTRODUCTION

The opilionid Suborder Cyphophthalmida is represented in South America by four genera. *Neogovea* Hinton includes two species from Guyana (Shear 1977), and two from Brazil (Hinton 1938, Martens 1969). *Metagovea* Rosas Costa includes two species, *disparunguis* Rosas Costa of Colombia (Rosas Costa 1950) and *oviformis* Martens from Brazil (Martens 1969). A species of *Metagovea* is also found in tropical Africa (Juberthie 1969). The remaining genus *Chileogovea* contains only the species *oedipus* Roewer; it is closely allied to genera from New Zealand and South Africa (Juberthie and Muñoz-Cuevas 1970).

The new genus described below is most closely related to *Metagovea*, but differs significantly in several particulars, especially in the form of the ventral thoracic complex and in having a type of exocrine gland not heretofore known from any opilionid.

At present no family designation is provided for *Huitaca ventralis* because of my conviction that the traditional placement of all cyphophthalmids in one family, with two rather arbitrarily characterized subfamilies, is unduly conservative. However, *Metagovea*, *Neogovea* and *Huitaca* would belong in Stylocellinae in the traditional scheme. In the context of a forthcoming review of the North American cyphophthalmid fauna, I will discuss the family classification and provide names for new family-level groups.

HUITACA new genus

Type Species.—*Huitaca ventralis*, new species, by present designation.

Diagnosis.—Distinct from *Neogovea* species in having a lamelliform (rather than brush-like) adenostyle, and from *Metagovea* species in the large eusternal sclerite present in males, as well as the dorsal (rather than ventral) opening of the adenostyle gland.

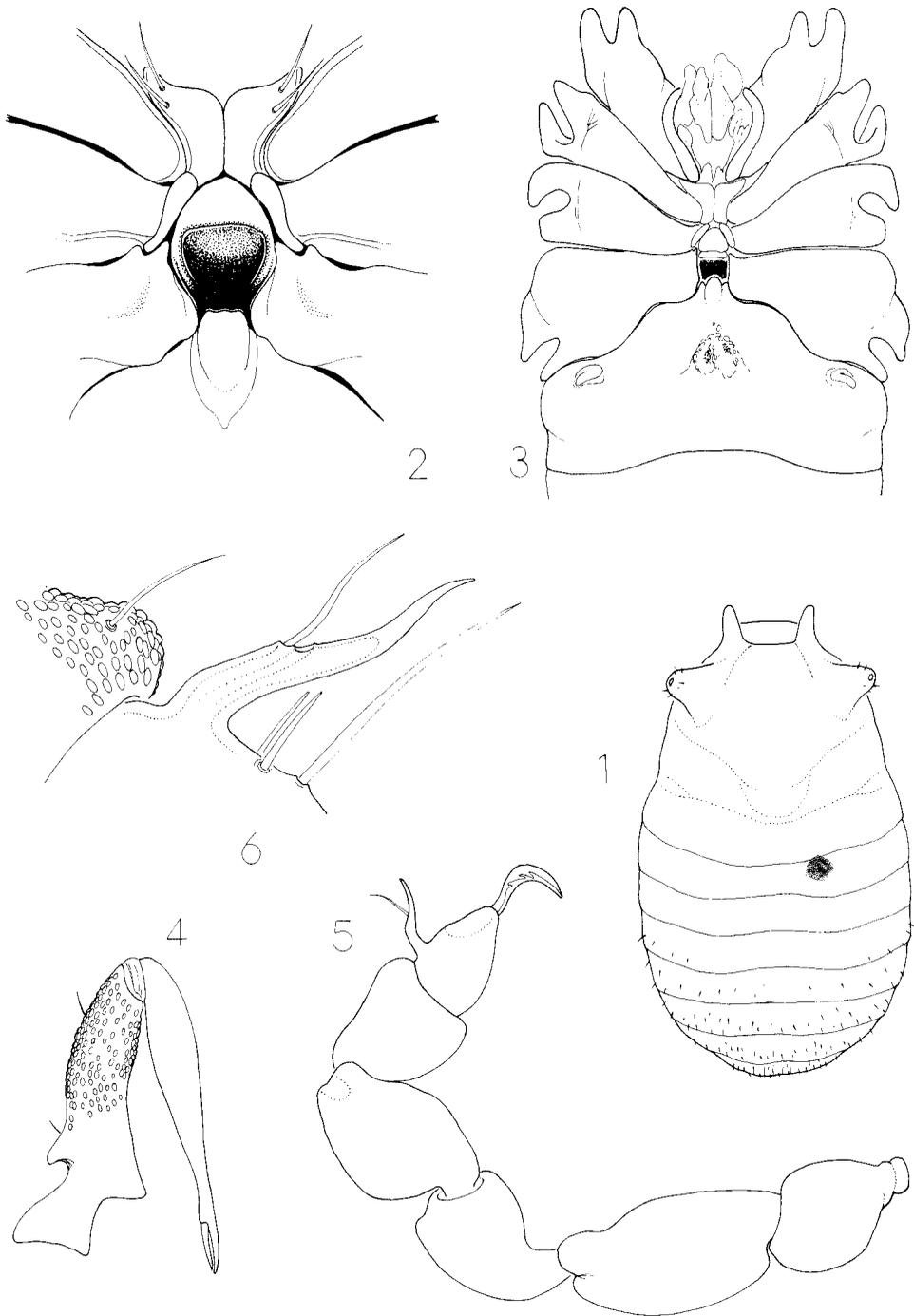
Description.—Medium sized cyphophthalmids of typical appearance. Grooves between abdominal tergites well-marked, median sulcus absent. Ozophores removed from cephalothorax margin, but not fully dorsal (Juberthie's Type II); opening terminal. Eyes absent. Anterior margin of scute with squared emargination above chelicerae, laterally prolonged as squared flange on each side of cheliceral insertions. Claws toothed. Cheliceral teeth uniform, blunt, few in number. Chelicerae with distal article about seven times as long as broad. Mesosterna present and of typical form; metasterna longer than broad, oblique, widely separated in the male by a large eusternum. Dorsal and anterior walls of gonostome formed by eusternum, lateral walls by reduced gonostomal lobes of fourth coxae, posterior wall by extension of abdominal sternite set off in a manner suggestive of nascent operculum. Abdominal sternite I with a unique exocrine gland, opening through paired complexes of pores. Dorsum lightly pebbled, with few setae; legs heavily pebbled. Fourth tarsus of male not divided; adenostyle long, acuminate-lamellate, pore dorsal. Male fourth metatarsi completely ornamented. Anal glands not detected. Penis with 10-12 setae in each lateral group, ventral plate with 17 or 18 short, thick apical setae; gonopore with membranous, fimbriate lateral lobes.

Etymology.—Huitaca was the moon goddess of the Chibcha people, who ruled north eastern Colombia before the Spanish conquest (Osborne 1968).

Remarks.—In comparison with the closely related *Metagovea*, similarities are the form of adenostyle (at the base of the tarsus, acuminate) and in the corona analis, a complete ring formed by the fusion of abdominal sternites eight and nine and tergite nine. The latter character is also found in *Neogovea*. *Huitaca ventralis* resembles *Neogovea* species in the form of the chelicerae, which have a slender distal article and a small movable finger; in *Metagovea* the distal article is only about four times as long as broad and the movable finger is one-fourth the length of the distal article. In all three genera, the cheliceral teeth are uniform and large; in *Neogovea* and *Huitaca* they appear as blunt nodules.

Neogovea kamakusa Shear has a small eusternal sclerite which, however, does not separate the metasterna. In *Huitaca ventralis*, this sclerite is larger than in any other cyphophthalmid and widely separates the metasterna, so that the gonostomal lobes of the fourth coxae do not meet anterior to the gonostome, as they do in both *Neogovea* and *Metagovea* species. Thus the eusternum forms more of the outer margins of the gonostome than observed in any other species of the suborder. In addition, the anterior projection to the gonostome of the first abdominal sternite is more lobe-like and clearly set off than in other cyphophthalmids, suggesting that the boundary between having a genital operculum and lacking one might not be as distinct as heretofore imagined (a genital operculum as a separate sclerite is found in Opiliones in the Laniatores and a few Trogloloidea; in the majority of Palpatores the gonostome is partly or wholly covered by an unarticulated lobe of the first abdominal sternite).

As in *Metagovea*, the claws of *Huitaca ventralis* are toothed. One species of *Neogovea*, *N. mexasca* Shear, does not have teeth on the claws of legs I and II in the females, but this species is troglobitic and may be aberrant.



Figs. 1-6.—Anatomy of *Huitaca ventralis* male: 1, body, dorsal view; 2, ventral thoracic complex, ventral view, (first coxae omitted); 3, anterior part of body, ventral view; 4, right chelicera, lateral view; 5, right leg IV, mesal view; 6, adenostyle, mesal view.

While conforming in general to the pattern found in related South American genera, the penis of *Huitaca ventralis* differs in the larger numbers of setae and the bizarre, unique fimbriate lobes surrounding the gonopore.

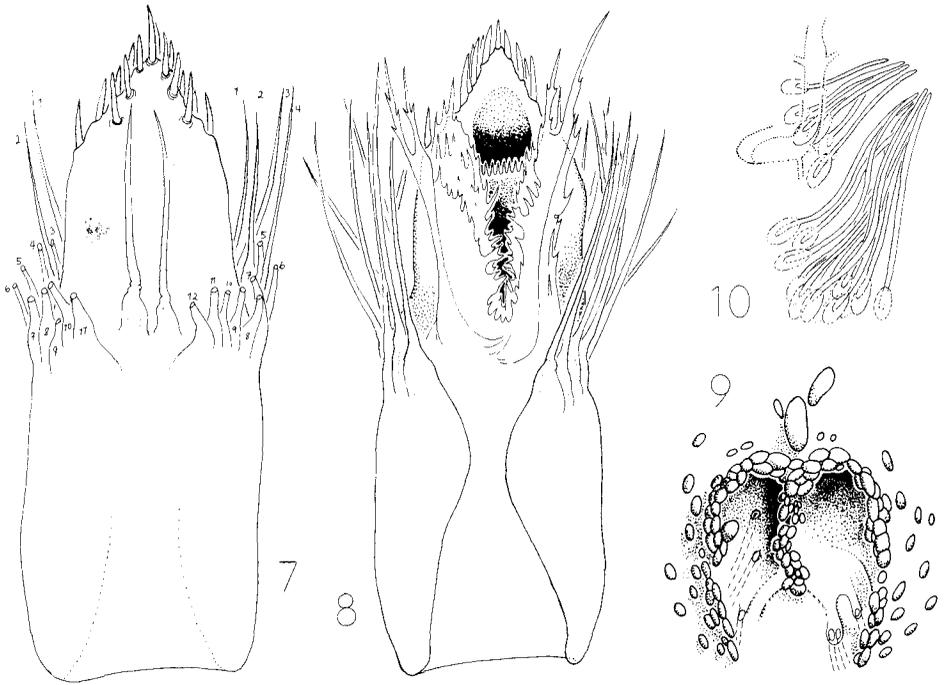
Martens (1969) described a cyphophthalmid from Brazil which he declined to place in a genus. Known only from a female, this species ("*enigmaticus*") has certain features suggestive of *Huitaca*, but the ventral thoracic complex is not clearly illustrated, nor is it described. In any case, the small size of Martens' specimen (1.45 mm long) precludes its conspecificity with *H. ventralis*.

Huitaca ventralis, new species

Figs. 1-10

Types.—Male holotype, one male and one juvenile paratype from 30 km south of Chinacota, elevation 320 M (8000'), Prov. Norte de Santander, Colombia, collected 14 May 1975 by Stewart B. Peck, deposited in Museum of Comparative Zoology, Cambridge, Mass., USA.

Description.—Taken from male holotype. Total length, 3.03 mm, width across ozophores 1.50 mm, greatest width (third abdominal segment), 1.58 mm. Dorsum (Fig.



Figs. 7-10.—Anatomy of *Huitaca ventralis* male: 7, penis, ventral view. Some setae of lateral groups shown as if cut, for clarity; 8, penis, dorsal view; 9, ventral view of openings of ventral abdominal exocrine gland complex; 10, dorsal (internal) view of ventral abdominal exocrine gland complex.

1) granulate, with scattered setae more densely set on posterior part of abdomen. Ventral thoracic complex as in Fig. 2; mesosterna typical, aracuate, anterior portions widest, broadly flaring. Metasterna oblong, oblique, completely separated by subtriangular eusternal sclerite extending anteriorly from anterior lip of gonostome. Gonostomal lobes of fourth coxae very short, forming only posterior half of lateral lips of gonostome, anteriorly showing articulation with metasterna. Posterior lip of gonostome formed by well-marked lobular extension from first abdominal sternite. First abdominal sternite (Fig. 3) with openings of exocrine gland complex (see below). Spiracles kidney-shaped. Corona analis formed by complete fusion of sternites eight and nine and tergite nine. Anal region not modified.

Chelicerae (Fig. 4) typical; basal article 1.68 mm long, 0.45 mm wide; distal article 1.44 mm long, 0.23 mm wide; movable finger 0.29 mm long. Fingers with two or three noduliform teeth. Palpal trochanter scantily set near distal end with small pointed tubercles. Legs densely covered with pebbled cuticular pattern, pebbling absent from tarsus of fourth leg (Fig. 5). Adenostyle (Fig. 6) at tarsal base, sinous, lamellar-acuminate, as long as tarsus width, pore on dorsal side near midpoint, subtended by single seta. Measurements of legs and palpus as follows:

| | palpus | I | II | III | IV |
|------------|--------|------|------|------|------|
| trochanter | 0.39 | 0.38 | 0.36 | 0.30 | 0.38 |
| femur | 0.53 | 1.05 | 0.87 | 0.65 | 0.90 |
| patella | 0.35 | 0.60 | 0.47 | 0.56 | 0.63 |
| tibia | 0.44 | 0.80 | 0.60 | 0.59 | 0.68 |
| metatarsus | --- | 0.47 | 0.57 | 0.41 | 0.53 |
| tarsus | 0.41 | 0.57 | 0.60 | 0.33 | 0.38 |

Penis in ventral view as in Fig. 7. Lateral groups of 10-12 setae each, ventral group of two; ventral plate with marginal setae short, stout, in two ranks, totalling 17. In dorsal view (Fig. 8) with large, flared, fimbriate structures around gonopore.

Color dark brown, appearing black without magnification.

Female unknown.

Distribution.—Known only from the type locality. The type locality is in the Cordillera Oriental, near the headwaters of the Rio Zulia, which flows north to Lake Maracaibo.

Etymology.—The specific epithet is an adjective referring to the exocrine gland complex on the abdominal venter.

Notes.—The ventral gland complex is further delineated in Figs. 9 and 10. Internally (Fig. 10) the complex appears to consist of two groups of small, multicellular gland units on each side. The anterior group of each side contains about six units, while the posterior group contains 12-15 units. Each gland unit has an independent duct, though not all the ducts could be traced to openings through the heavy cuticle of the sternite. In external aspect, the gland units are seen to open in a raised region of the sternite (Fig. 3, 9), delimited by cuticular tubercles formed by sequential enlargement from the normal sculpture of the body surface; the surface of the raised area is divided by a row of tubercles into two depressed regions. A few pores, with canals from gland units, were detected in these depressions.

Because the type collection consisted only of males, it cannot be assumed that this unique gland complex is a secondary sexual character. Likewise we have no clues to its functional significance, but Juberthie (1967) has described a gland complex dorsal to the

anus in *Siro rubens* which he speculated may have sexual significance, as it occurs only in males. Males of several South African and New Zealand genera have strongly modified anal regions, with brushes of setae which suggest a mechanism for the dispersal of a volatile pheromone. Juberthie and Muñoz-Cuevas (1970) describe a set of four rough knobs on the posterior part of the ventral surface of *Chileogovea oedipus*. They do not appear to be glandular. The glands I observed in *Huitaca ventralis* are similar in some features of their gross morphology to the anal glands described by Juberthie (1967); inappropriate preservation and scarcity of material precluded any histological studies. Behavioral studies would be useful in the clarification of the function of the anal glands of *Siro* and others, the abdominal-sternal glands of *Huitaca ventralis*, and indeed even the well-known glands opening through the adenostyle.

More closely related to *H. ventralis* is *Ogovea nasuta* Hansen, of the west African island of Fernando Póo (Hansen 1921). Through the courtesy of Dr. Henrik Enghoff of the Zoologisk Museum, København, I have been able to examine the type specimen of *O. nasuta* in detail. The males of this species have a strong, posteriorly directed projection extending from the first abdominal sternite, just behind the gonostome. Posterior to this projection is a deeply depressed oval area extending back to the anterior margin of the fifth sternite. A pair of grouped gland units occurs on each side near the base of the projection; pores from these glands appear to open on the margins of the projection itself. While Hansen (1921) described and illustrated the sternal modifications, he did not detect the associated glandular apparatus.

Juberthie (pers. comm. 1978) has in press a description of two species of cyphophthalmid from New Caledonia in which exocrine glands open through single mid-line pores on the third and fourth abdominal sternites. These glands seem quite different from those in *H. ventralis* and *O. nasuta*, and according to Juberthie, his species are more closely related to the "sironines" than the "stylocellines."

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