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DIPLOCENTRUS PEREZI, A NEW SPECIES OF SCORPION FROM SOUTHEASTERN MEXICO (DIPLOCENTRIDAE)

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Abstract. *Diplocentrus perezi*, a new species of diplocentrid scorpion, is described from the Mexican state of Veracruz, representing the first report of the genus from that area. A female specimen from Tabasco is possibly referable to this species. The new species is most similar to *D. mexicanus* Peters, but differs from that species in carapacial granulation, tarsomere II spine formula, and carination of the pedipalps and metasoma.

Studies in the last decade have shown that the genus *Diplocentrus* in southern México and the Yucatán Peninsula is quite diverse (Francke 1977a, 1977b, 1978). However, there are currently no known records of this genus from the poorly-sampled southeastern coastal states. It is the purpose here to describe a distinct new species based on an adult male specimen from southern Veracruz. A subadult female specimen from Tabasco may also be referable to this species.

Nomenclature and mensuration follows that of Stahnke (1970), with the following exceptions: carinal terminology and cheliceral measurements are after Francke (1975, 1977a) and trichobothrial terminology is after Vachon (1974).

Diplocentrus perezi, new species
Figs. 1–7

Type data.— Holotype male from San Martín Tuxtla Volcano, Veracruz, México (1300 m), September 1985 by Gonzalo Pérez-Higareda; deposited in the American Museum of Natural History, New York.

Etymology.— This species is dedicated to Dr. Gonzalo Pérez-Higareda, who collected the type specimen and made it available for study.

Distribution.— Known from the type locality in southern Veracruz, with a possible record in Tabasco.

Diagnosis.— Adult male 62 mm in length. Base color dark orange brown to brown, with distinct dusky markings throughout. Carapace with coarse granulation restricted to area surrounding anterior margin. Tergite VII moderately bilobed, granulose. Pectinal tooth count 14–13. Metasoma I-IV with 10 keels; dorsolateral carinae strong, crenulate; ventrolateral and ventral submedian carinae moderate, smooth to irregularly granular. Metasoma V with dorsolateral carinae moderate, granular; ventrolateral and ventromedian carinae strong with large spinoid denticles. Cheliceral chela length/chela width 1.27; fixed finger length/chela width ratio 0.69; movable finger length/chela length 1.00. Pedipalps: dorsal surface of femur relatively flat, width distinctly greater than depth; pedipalp patella with two dorsal carinae, the dorsomedian strong, smooth and the dorsoexternal weak, smooth; chela fixed finger length/carapace length 0.95; movable finger length/carapace length 1.26; dorsal and external surfaces of chela palm moderately to strongly reticulate, with outer palm carinae well developed. Chela length/width ratio 2.86. Tarsomere II spine formula: 3/4 4/4: 4/4 4/4: 5/5 5/5: 5/5 5/5.

Description.— Based on holotype male.

Prosoma: Carapace (Fig. 1) base color dark orange brown with distinct dusky pattern. Anterior portion of carapace covered with medium-sized granules; area around ocular tubercle densely, finely granular; remainder of carapace sparsely granular. Coxosternal region yellow brown to light brown, lustrous. Sternum with about 9 pairs of setae; coxae sparsely setose.

Mesosoma: Tergites brown, with distinct dusky pattern throughout. Tergites I-IV acarinate, V-VII weakly monocarinate, with median carina weak, smooth. Tergites I-II with minute granulation on lateral portions; III-VI with dense minute granulation interspersed with sparse, coarse granulation. Tergite VII moderately bilobed, with

each lobe granulose. Pectines pale yellow, with 14-13 teeth. Sternites uniformly yellow brown; III-VI smooth, lustrous, moderately setose along lateral and posterior margins. Sternite VII tetracarinate; lateral carinae moderate, unevenly smooth; submedian pair weaker, smooth; about 10 pairs of reddish setae present.

Metasoma: Segments I-III dark orange brown; IV and V slightly darker than preceding segments. Segment I 1.09 times longer than wide; II 1.33 times longer than wide; V 2.83 times longer than wide. *Segments I-IV:* Dorsolateral carinae strong, irregularly crenulate. Lateral supramedian carinae on I-III strong, granular; on IV moderate, subgranose. Lateral inframedian carinae weak on all four segments, irregularly granular. Ventrolateral carinae on I-II moderate, smooth; on III-IV moderate, granular. Ventral submedian carinae on I-III moderate, irregularly granular; on IV vestigial, with some granulation anteriorly. Intercarinal spaces with sparse, fine and coarse granulation. *Segment V:* (Fig. 2) Distinctly narrower than segments I-IV, with lateral sides subparallel. Dorsolateral carinae moderate, granular. Lateromedian carinae vestigial, with a few sharp granules anteriorly. Ventrolateral, ventromedian, and ventral transverse carinae strong, with distinctly enlarged, subconical granules (Fig. 2). Dorsal intercarinal space with dense fine granulation anteriorly; lateral intercarinal space sparsely, coarsely granular; ventral intercarinal spaces smooth, moderately setose.

Telson: (Fig. 2) reddish to orange brown. Ventral surface of vesicle densely setose, proximally with numerous sharp granules. Subaculear tubercle strong, subconical, covered with setae and fine white microchaetes.

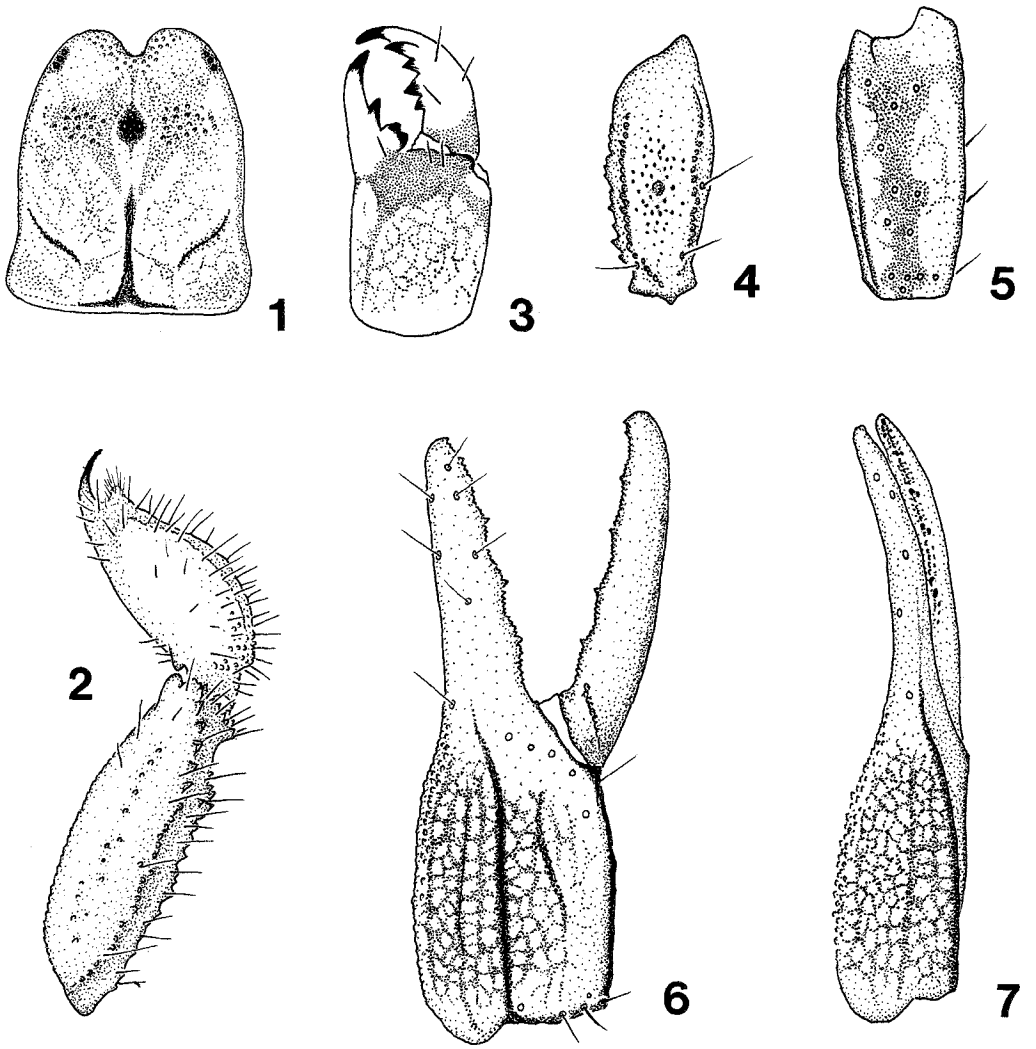
Chelicerae: (Fig. 3) light yellow brown, lustrous, with distinct dusky mottling on dorsal surface of manus; teeth dark reddish brown. Movable finger with subdistal tooth closely apposed to distal tooth.

Pedipalps: Base color orange brown, femur lighter than patella and chela; distal end of chela manus and fingers infuscate. Trichobothrial pattern Type C, orthobothriotaxic (Vachon 1974). *Femur:* (Fig. 4) Dorsointernal and ventrointernal carinae strong, granulose; dorsoexternal carina strong, irregularly granulose proximally, smooth distally; ventroexternal carina obsolete. Internal surface moderately granulose; dorsal surface flat, moderately granular; ventral and external surfaces smooth. *Patella:* (Fig. 5) Dorsal aspect with two smooth carinae; dorsointernal carina strong, dorsoexternal carina weak; ventrointernal carina moderate, granular; ventroexternal carina weak, smooth. Basal tubercle of inner surface moderate, followed distally by three to four large granules; remainder of inner surface covered with moderately dense, fine granules. External surface relatively flat, with very weak reticulations. Ventral face slightly convex, essentially smooth. *Chela:* (Figs. 6,7) Dorsal marginal carina strong, granulose; dorsal secondary carina weak, smooth; digital carina strong, smooth; external secondary carina weak, smooth; ventroexternal carina obsolete basally, but strong on distal one-fourth of manus, smooth; ventromedian carina strong, essentially smooth; ventrointernal carina weak, smooth; two additional carinae on inner face, these vestigial, smooth to feebly granular. Dorsal and external faces of manus moderately reticulate (Fig. 6), ridges smooth. Inner and ventral faces with irregular granulation and punctations. Dorsal and external surfaces of manus sparsely setose; internal and ventral surfaces moderately to densely setose; fixed and movable fingers densely setose. Inner margins of chela fingers with moderate scalloping.

Legs: Contrasting in coloration with the body; proximal segments yellow brown; tarsi light yellow.

Measurements (of holotype, in mm): Total length, 62.2; carapace length 7.6; mesosoma length 17.8. *Metasomal segments:* I length/width, 4.7/4.3; II length/width, 5.3/4.0; III length/width, 5.5/3.9; IV length/width, 6.3/3.5; V length/width, 8.2/2.9. Telson length 6.8; vesicle length/width/depth, 5.5/3.1/2.5; aculeus length, 1.3. *Chelicerae:* chela length/width, 2.24/1.77; fixed finger length, 1.23; movable finger length, 2.24. *Pedipalps:* femur length/width, 7.2/2.9; patella length/width, 7.3/2.7; chela length/width/depth, 15.4/5.4/3.5; fixed finger length, 7.2; movable finger length, 9.5.

Comparisons.— *Diplocentrus perezi* is most similar to *D. mexicanus* Peters. From this species, *D. perezi* may be distinguished by the following characteristics: (1) carapacial granulation limited to area immediately surrounding anteromedian notch; (2) lower tarsomere II spine formula (in *D. mexicanus mexicanus* 5/6 5/6: 6/6 6/7: 7/7 7/7: 7/7 7/7 and in *D. mexicanus oaxacae* Francke 5/6 5/6: 6/7 6/7: 7/8 7/8: 7/8 7/8); (3) the dorsal margin of the pedipalp chela is relatively straight in *D. perezi*, but noticeably



Figures 1-7.— Morphology of *Diplocentrus perezi*, new species: 1, dorsal aspect of carapace; 2, lateral aspect of metasomal segment V and telson; 3, dorsal aspect of right chelicera; 4, dorsal aspect of right pedipalp femur; 5, external aspect of right pedipalp patella; 6, external aspect of right pedipalp chela; 7, dorsal aspect of chela. Trichobothrial patterns are shown for pedipalpal structures.

sinuous in *D. mexicanus*; (4) the dorsal carinae of the pedipalp patella are smooth in *D. perezi*, but granulose or subcrenate in *D. mexicanus*; (5) the patellar *et* trichobothria form a distinct obtuse angle in *D. perezi*, but are almost in a linear arrangement in *D. mexicanus*; and (6) in *D. perezi*, the ventrolateral and ventral submedian carinae of metasomal segments I-IV are weaker than in *D. mexicanus* and smooth to irregularly granular, rather than distinctly granulose.

Diplocentrus perezi may be easily distinguished from *D. tehuacanus* Hoffmann, which is found in Puebla, Morelos, Guerrero, and Oaxaca by (1) the presence of two dorsal patellar carinae, rather than only one; (2) by having strong reticulations on the dorsal and external faces of the pedipalp chela (in *D. tehuacanus*, the reticulations are much weaker); (3) by having strong, costate dorsolateral metasomal carinae (in *D. tehuacanus* these are weak and smooth; (4) and by having well developed ventrolateral and ventral submedian carinae on metasomal segment IV (in *D. tehuacanus* the ventrolateral carinae are feeble and smooth and the ventral submedians more or less obsolete). There are also conspicuous morphometric differences: in *D. perezi*, the ped-

ipalp chela fingers and the individual metasomal segments are proportionately longer.

Comments.— A subadult female specimen collected near Villahermosa, Tabasco, June 1985 by Gonzalo Pérez-Higareda is possibly referable to this species. The tarsomere II spine formula for this female (4/4 4/4: 4/4 4/5: 5/5 5/5: 5/5 5/5) does not differ significantly from that of the male; the pectinal tooth count, 12–11, is also very close to that of the male (female diplocentrids tend to have slightly lower counts than males). It differs significantly from the holotype male in that its pedipalp chelae are proportionately broader, deeper, and more convex, with the carinae of the dorsal and external faces obsolete; its metasomal carinae are slightly weaker; and its carapace, pedipalps, and tergites are smooth and lustrous. The characters on which these differences are based are all known to be sexually dimorphic in the genus, and consequently should be interpreted with great caution. Given the holotype male's morphology in these characters, the predicted female morphology would be exactly that exhibited by the specimen from Tabasco. However, the two specimens were collected in different habitats and at different altitudes: the female from lowlands and the holotype male from wet forest at 1300 m (G. Pérez-Higareda, pers. comm., 1987). This leads to the suggestion, at least, that they may represent different species. Because females of closely related, but different, species of *Diplocentrus* are difficult to distinguish, accurate determination of the species identity of the female cannot be provided until males are known from the Tabasco area. The female specimen is deposited in the collection of the Estación de Biología "Los Tuxtlas", Universidad Nacional Autónoma de México, Catemaco, Veracruz.

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