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A NEW *CENTRUROIDES* MARX, 1890 (SCORPIONES: BUTHIDAE), FROM SOUTHERN GUERRERO STATE, MEXICO

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Abstract: A new species of the medically important buthid scorpion genus *Centruroides* Marx, 1890 is described herein from two localities in southern Guerrero State, Mexico. On morphological grounds, it is most closely related to three highly toxic species known to occur in this State as well: *Centruroides meisei* Hoffmann, 1938, *Centruroides tecomanus* Hoffmann, 1932, and *Centruroides villegasi* Baldazo-Monsivaiz, Ponce-Saavedra & Flores-Moreno, 2013. After this contribution, the genus is represented in Mexico by 42 nominal species, 12 of them (29%) occurring in Guerrero.
Key words: Scorpiones, Buthidae, *Centruroides*, systematics, new species, Mexico.

Un nuevo *Centruroides* Marx, 1890 (Scorpiones: Buthidae), del sur del Estado de Guerrero, México
Resumen: Se describe una especie nueva de alacrán bútido del género de importancia médica *Centruroides* Marx, 1890, de dos localidades del sur del Estado de Guerrero, México. Sobre bases morfológicas, está más estrechamente relacionada con tres especies altamente tóxicas también conocidas de dicho Estado: *Centruroides meisei* Hoffmann, 1938, *Centruroides tecomanus* Hoffmann, 1932 y *Centruroides villegasi* Baldazo-Monsivaiz, Ponce-Saavedra & Flores-Moreno, 2013. Tras esta contribución, el género queda representado en México por 42 especies nominales, 12 de ellas (29%) presentes en Guerrero.
Palabras clave: Scorpiones, Buthidae, *Centruroides*, sistemática, especie nueva, México.

Taxonomía/Taxonomy: *Centruroides bonito* **sp.n.**

Introduction

Inside Mexico, the buthid scorpion genus *Centruroides* Marx, 1890 is currently known to be represented in Guerrero State by 11 nominal species, whose history is detailed as follows in chronological order:

1. *Centruroides fulvipes* (Pocock, 1898). Described by Pocock (1898) from "Xantipu" (= Chautipa).
2. *Centruroides nigrescens* (Pocock, 1898). Described by Pocock (1898) from "Xautipa" (= Chautipa).
3. *Centruroides limpidus* (Karsch, 1879). Recorded first by Hoffmann (1932) from Iguala.
4. *Centruroides meisei* Hoffmann, 1938. Described by Hoffmann (1938) from Acapulco.
5. *Centruroides gracilis* (Latreille, 1804). Recorded first by Díaz-Nájera (1975) from Jalpan.
6. *Centruroides nigrimanus* (Pocock, 1898). Recorded first by Díaz-Nájera (1975) from Zihuatanejo.
7. *Centruroides balsasensis* Ponce-Saavedra & Francke, 2004. Recorded in the original description by Ponce-Saavedra & Francke (2004) from Tzirándaro.
8. *Centruroides tecomanus* Hoffmann, 1932. Recorded first by Quijano-Ravell *et al.* (2010) from a few localities in La Unión and Petatlán.
9. *Centruroides edwardsii* (Gervais, 1843). Recorded by Armas *et al.* (2011b) from Acapulco, as a correction of the earlier record by Hoffmann (1932) under the name *C. margaritatus septentrionalis* Hoffmann, 1932 (a junior synonym).
10. *Centruroides villegasi* Baldazo-Monsivaiz, Ponce-Saavedra & Flores-Moreno, 2013. Described by Baldazo-Monsivaiz *et al.* (2013) from a few localities in Chilapa de Álvarez.
11. *Centruroides poncei* Teruel, Kovařík, Baldazo-Monsivaiz & Hoferek, 2015. Recorded in the original description by Teruel *et al.* (2015) from Cuajinicuilapa.

In addition to these 11 species, there is a single record of an undetermined member of the "thorelli" species-group, published by Ponce-Saavedra & Quijano-Ravell *et al.* (2012). Moreover, there have been several other species and subspecies that have been recorded from Guerrero as well, but that later have all been regarded as misidentifications (Baldazo-Monsivaiz *et al.*, 2012).

As a whole, the geographical distribution of *Centruroides* extends all over the territory of this State, from the Pacific Coastal Plain through the highest peaks of the Sierra Madre mountain range, and from the desertic Balsas Basing through the humid montane forests. But the taxonomic composition of these 12 species is very heterogeneous, i.e., they belong to several morphologically distinct lineages: the large and uniformly dark members of the "gracilis" and "margaritatus" species-groups, the medium-sized and stripped members of the "elegans" and "nigrovariatus" species-group, and the tiny and speckled members of the "thorelli" species-group.

While identifying scorpion samples housed at the arachnological collection of the Laboratorio de Entomología "Biol. Sócrates Cisneros Paz" of the Universidad Michoacana de San Nicolás de Hidalgo, we found two adult females that clearly represent an undescribed species; soon later, a large sample (including adult males) was collected in a second locality nearby. Herein we describe the new taxon, which is also fully illustrated.

Material and methods

The specimens were studied and measured under a Zeiss Stemi 2000C tri-ocular microscope, equipped with line scale and grid ocular micrometers. The high-resolution digital photographs were taken using white light and then slightly processed with Adobe Photoshop®, only to remove background and to optimize brightness and contrast parameters for printing.

Nomenclature and measurements follow Stahnke (1970), except for trichobothriotaxy (Vachon, 1974), metasomal carinae (Francke, 1977), pedipalp chela carinae (Acosta *et al.*, 2008, as interpreted by Armas *et al.*, 2011a), and sternum (Soleglad & Fet, 2003). Unless otherwise noted, all morphologically diagnostic characters mentioned refer to adults of both sexes.

All specimens are preserved in ethanol 80% and deposited in the following collections: Colección Nacional de Arácnidos, Universidad Nacional Autónoma de México (CNAN), Colección Aracnológica del Laboratorio de Entomología "Biol. Sócrates Cisneros Paz", Universidad Michoacana de San Nicolás de Hidalgo (CAFBUM), and personal collection of Rolando Teruel, Centro Oriental de Ecosistemas y Biodiversidad, Santiago de Cuba (RTO).

Systematics

***Centruroides bonito*, new species**
Figures 1-6. Tables I-II.

TYPE DATA. MEXICO: GUERRERO STATE: Petatlán Municipality: Ocote de Peregrino (17°43'50"N - 101°18'33"W; 180 m a.s.l.); March 20, 2016; Cynthia C. Sauno; 1♂ holotype and 1♀ paratype (CNANT 1106, CNANT 1107), 1♂ and 1♀ paratypes (CNANT1108), 1♂ y 3♀♀ paratypes (CAFBUM), 1♂ and 1♀ (RTO). "Petatlán, Cerro" [*sic*]; December 23, 2005; S. A. Martínez; 2 adult ♀♀ paratypes (CAFBUM). **Note:** both paratype females collected in 2005 are well preserved but mutilated, i.e., telson and part of metasoma are missing.

ETIMOLOGY. The specific epithet is an indeclinable noun in apposition, taken literally from the Spanish word meaning "pretty", "beautiful" or "nice-looking". It alludes to the distinctive coloration of this species, undoubtedly one of the most attractive amongst all members of the genus.

DIAGNOSIS. Adult size medium for the genus (male 42–49 mm, female 43–50 mm). Coloration basically yellow, essentially immaculate except as follows: carapace with blackish lateral margins plus four thin, well-defined longitudinal blackish stripes; tergites very densely reticulated with blackish brown (in males with a vestigially two-stripped pattern); metasoma with blackish spots at extreme basis and apex of every segment. Pedipalps moderately long and slender, with ordinary setation; manus oval-slender (length/width ratio 1.55–1.98 in males, 1.50–1.75 in females), wider than patella in both sexes but occasionally slightly narrower in females, with carinae weakly subcrenulate to subcostate, internal surface with many minute granules scattered; fingers with eight principal rows of denticles, basal lobe/notch combination moderate. Carapace and tergites with intercarinal tegument very finely and densely granulose, with medium-sized, glossy granules scattered. Sternite V with the smooth patch indistinct. Metasoma moderately long and slender in both sexes, progressively higher distally in males, with 10/8/8/8/3 (male) or 10/8/8/8/5 (female) complete, well-developed, finely serrate (male) to crenulate (female) carinae; dorsal lateral carinae without conspicuously enlarged terminal denticles; intercarinal spaces coriaceous; segments II–IV with two pairs of ventrolateral macrosetae. Telson elongate oval (longer and more bulbous in male); vesicle smooth, with vestigial laterodistal swellings in males; subaculear tubercle medium-sized, spiniform and not too close to the base of aculeus. Pectinal tooth count 21–23 in males, 20–22 in females; female basal plate with a small and deep, circular central pit.

DESCRIPTION (ADULT MALE HOLOTYPE). **Coloration** (fig. 1–2). Base color light but vivid yellow, slightly paler on chelicerae, pedipalps, legs and venter. Chelicerae manus with a large, wide, pale immaculate dorsomedian area flanked on each side by a moderately dense pattern of dark brown reticulations; fingers only faintly infuscate. Pedipalps essentially pale immaculate, only with dorsal carinae infuscate, few traces of dark reticulations on external surface of every segment, and the basal and distal parts of femur and patella infuscate; fingers light brown, with dentition dark brown. Carapace predominantly pale, except as follows: eyes and lateral margins blackish, four very well-defined, thin, parallel, longitudinal blackish stripes, the space between the lateral stripes and the lateral margin faintly reticulated with blackish brown posteriorly. Tergites I–VI very densely and symmetrically reticulated with blackish brown, much denser and darker over the pretergites (which are essentially solid-black) and with a faint longitudinal median pale subdivision that suggest a two-striped pattern; tergite VII predominantly pale immaculate except for the most anterior part (pretergite included), which exhibits the same blackish pattern as I–VI. Coxosternal region and genital operculum pale immaculate. Pectines whitish, but becoming slightly darker basally due to heavier sclerotization. Legs essentially pale immaculate, only with very faint traces of infuscation on lateral surfaces of patella and tibia. Sternites pale immaculate, only with very faint traces of infuscation along lateral margin. Metasoma almost entirely pale immaculate, except as follows: ventral submedian and ventral lateral carinae faintly infuscate and every segment basally and distally infuscate in an irregularly annulate pattern. Telson orange-brown, diffusely patterned with dark brown in a very irregular striped condition that becomes remarkably denser and darker distally, ending up in a solidly dark brown subaculear tubercle and aculeus.

Chelicerae (fig. 2g). Dentition typical of the genus. Tegument glossy, dorsodistal portion of manus with coarse, glossy granules irregularly arranged transversally, defining a depressed area. Setation very dense ventrally, but essentially lacking dorsally, except for a few rigid macrosetae around depressed area of manus.

Pedipalps (fig. 2a–f). Moderately long and slender for the genus, sparsely setose. Orthobothriotaxic A-α. Femur straight and sparsely setose, with all five standard carinae moderate, serrate to denticulate; intercarinal tegument finely and densely granulose, internal surface with the four internal (*i*) trichobothria surrounding a conical spur of moderately small size, poorly defined from surrounding granulation. Patella straight and very sparsely setose, with all seven standard carinae moderate to weak, subcrenulate to subgranulose; intercarinal tegument with the same granular sculpture as on femur but finer, internal surface with abundant sharp denticles and about six large, pale tubercles. Chela not especially slen-

der nor robust, very sparsely setose; manus oval-slender (1.55 times longer than wide), slightly wider than patella (1.03 times) medially widest and with all nine standard carinae weak, finely subgranulose to costate, intercarinal tegument coriaceous with many small, sharp granules scattered on dorsointernal and internal surfaces; fingers long and slender (movable finger 1.62 times longer than underhand), moderately curved and with 8/8 principal rows of denticles flanked by 1–5 supernumerary denticles on each side (usually two, but increasing in number basally and vice versa), movable finger with apical subrow of four denticles plus a large internal accessory denticle (large terminal denticle not included), basal lobe/notch combination moderately strong.

Carapace (fig. 2g). Trapezoidal and slightly wider than long wide; anterior margin very shallowly V-shaped. Carination essentially absent: the only distinct carinae are the fused anterior medians and superciliaries (moderate, formed by partially anastomosed, variously-sized granules) and the also fused lateral oculars, central laterals and posterior medians (moderate, formed by isolate, medium-sized, glossy granules). Furrows: anterior median, median ocular, central median, posterior median and posterior marginal fused, wide and deep, posterior laterals long, narrow and deep, others indistinct. Tegument very finely and densely granulose, with medium-sized granules scattered mostly on darker areas. Median eyes large, separated by about one ocular diameter; lateral eyes much smaller, all same-sized.

Sternum (fig. 2j–k). Standard for the genus: type 1, medium-sized, longer than wide, triangular in shape.

Genital operculum (fig. 2j–k). Medium-sized, halves tightly apposed and roundly subtriangular in shape, with 2–3 pairs of medium-sized macrosetae. Genital papillae medium-sized, not protruding, with tips narrowly conical. Pre-pectinal plate heavily sclerotized and widely crescent-shaped.

Pectines (fig. 2j–k). Size and shape standard for the genus: medium (just reaching leg IV coxa-trochanter joint), subrectangular and moderately setose. Tooth count 21/21. Basal plate heavily sclerotized, wider than long; anterior margin with a small median notch, posterior margin widely convex and vestigially lobed medially.

Legs (fig. 1n–o). Slender, with all carinae subserrate; intercarinal tegument coriaceous to minutely granulose. Tibial spurs absent, prolateral and retrolateral pedal spurs strong in all legs. Ventral surface of all telotarsi round and very densely covered by long, dark macrosetae. Claws somewhat short and strongly curved.

Mesosoma (fig. 2h, l–m). Tergites with the same sculpture as on carapace, but generally smoother; I–VI with only one well-defined median longitudinal carina (very long, strong, formed by partially anastomosed, medium-sized, glossy granules that do not project beyond posterior margin), without traces of accessory carinae on IV–VI; VII with five carinae (median, submedians and laterals) which are very long, strong and finely serrate. Sternites sparsely setose, with spiracles oblique and relatively long and slit-like; III–VI acarinate, intercarinal tegument smooth and glossy, with some coarse punctures medially, smooth patch indistinct; VII with two pairs of long and finely subcrenulate to subserrate submedian and lateral carinae, intercarinal tegument very finely and densely granulose.

Metasoma (fig. 2p–v). Moderately long and slender, progressively wider and higher distally; I with ten complete, fine carinae, II–IV with eight, V with three: dorsal laterals strongly serrate on I–III, moderately subserrate on IV, absent on V, progressively stronger distally in every segment; lateral supramedians strongly serratocrenulate on I, moderately serratocrenulate on II–III, weakly crenulate on IV, absent on V (suggested by a few small granules basally), progressively stronger distally in every segment; lateral inframedians strongly serrate on I, absent on II–V (suggested by a few aligned but isolate granules on II); ventral laterals strongly serrate on I–IV, very weakly granulose on V; ventral submedians strongly serrate on I, moderately serrate to serratocrenulate on II–IV, absent on V; ventral median absent on I–IV, very weakly granulose on V. Intercarinal tegument coriaceous, with minute granules scattered over all surfaces. Dorsal furrow shallow but complete on all segments. Two pairs of dark ventrolateral macrosetae, plus some inconspicuous microsetae scattered over all carinae.

Telson (fig. 2t–v). Essentially bare, with several pairs of dark macrosetae scattered on ventral and lateral surfaces. Vesicle evenly oval (1.65 times longer than wide, 0.93 times wider than high), slightly more bulbous distally and with obsolete laterodistal swellings; tegument coriaceous; ventral median carina obsolete, subaculear tubercle moderate, sharp conical, distally curved downwards, pointing towards distal portion of aculeus and not too close to its base. Aculeus long, thin, sharp, slightly shorter than vesicle and strongly curved.

FEMALE (paratopotype: fig. 3–4; tab. II). Similar to male, but with well-marked sexual dimorphism: **(1)** pedipalps remarkably shorter and less slender; **(2)** pedipalp manus shorter and rounder, with granulation of internal surface less developed; **(3)** genital papillae and pre-pectinal plate absent; **(4)** pectines slightly shorter, not reaching coxa-trochanter joint of leg IV; **(5)** basal pectinal plate larger, with anterior margin less notched, with posterior margin essentially straight, and with a moderately deep, oval to round discal pit; **(6)** mesosoma wider, with sides more convex; **(7)** metasomal segments conspicuously shorter, wider and higher; **(8)** telson with vesicle slightly smaller and less globose, with subaculear tubercle and aculeus proportionally longer.

VARIATION. Adult size varied from 41.6–48.9 mm in males and 43.5–50.2 mm in females (tabs. I–II). There are two size-classes in the sample available for each sex and inside every class, males are essentially same-sized as but more slender than females, matching the standard for the genus. As usual for scorpions, smaller adults exhibit the weaker expression of secondary sexual dimorphic characters (e.g., smaller males are always proportionally less slender) but dimorphism is always evident, even to unaided eye.

The distinctive coloration of this species shows only minor variations in extent and shades of dark pattern, without any disruptive patterns. The diagnostic dark pattern of tergites is less compact and more irregular along longitudinal median axis in males, with some tendency to suggest a two-striped pattern, but never as clearly defined as in most "striped" members of *Centruroides*, including those three most closely related to *C. bonito* **sp.n.** Some females (including both paratypes from "Petatlán, Cerro") have the anterior margin and median area of sternites diffusely and irregularly spotted with blackish brown, in a pattern suggesting two irregular, submedian dark stripes.

Pectinal tooth counts varied as follows: in males (n = 7 pectines): 21 (3), 22 (1), 23 (3) and in females (n = 14 pectines) 20 (7), 21 (4), 22 (3). There is no clearly defined mode in

Table I. Measurements (mm) of the adult male types of *Centruroides bonito* **sp.n.**, from type locality. Abbreviations: length (L), width (W, in carapace it corresponds to anterior and posterior width, respectively), heigth (H), pectine damaged (?).

Dimensions		♂ Holotype	♂ Paratype	♂ Paratype	♂ Paratype
Carapace	L/W	4.86/4.67/2.50	4.54/4.45/2.20	4.48/4.38/2.24	4.33/4.19/2.14
Mesosoma	L	9.60	10.30	9.56	9.48
Tergite VII	L/W	3.97/4.32	3.96/4.19	3.95/4.25	3.64/4.00
Metasoma + Telson	L	30.45	26.49	27.21	24.13
Segment I	L/W/H	4.11/2.75/2.26	4.01/2.45/2.05	4.07/2.52/2.26	3.51/2.52/2.07
Segment II	L/W/H	5.13/2.50/2.26	4.71/2.50/2.10	4.90/2.35/2.19	4.54/2.22/1.73
Segment III	L/W/H	5.75/2.51/2.45	5.52/2.31/2.10	5.56/2.28/2.20	4.94/2.22/1.94
Segment IV	L/W/H	6.08/2.48/2.39	5.77/2.29/2.14	6.04/2.32/2.10	5.23/2.13/1.97
Segment V	L/W/H	6.64/2.52/2.53	6.48/2.31/2.34	6.64/2.33/2.37	5.91/2.15/2.25
Telson Vesicle	L/W/H	2.74/1.66/1.79	3.07/1.63/1.71	2.68/1.68/1.77	2.99/1.57/1.59
Pedipalp	L	19.01	17.35	17.73	16.62
Femur	L/W	4.80/1.15	4.22/1.32	4.64/1.27	4.27/1.39
Patela	L/W	5.57/2.08	5.00/1.80	4.66/1.87	4.72/1.82
Chela	L	8.64	8.13	8.43	7.63
Manus	L/W/H	3.34/2.15/2.36	3.78/1.98/2.18	3.82/1.93/2.22	3.50/1.89/2.03
Movable finger	L	5.41	4.90	5.25	4.83
Fixed finger	L	5.3	4.35	4.61	4.13
Pectinal basal plate	L/W	0.55/0.77	0.50/0.86	0.51/0.84	0.38/0.83
Pectinal tooth count		21/21	23/?	23/23	21/22
Total	**L**	**48.88**	**45.29**	**45.20**	**41.58**

Table II. Measurements (mm) of the adult female types of *Centruroides bonito* **sp.n.**, from type locality. Abbreviations: length (L), width (W, in carapace it corresponds to anterior and posterior width, respectively), heigth (H), pectine damaged (?).

Dimensions	♀ Paratype	♀ Paratype	♀ Paratype	♀ Paratype	♀ Paratype	♀ Paratype
Carapace L/W	5.90/6.01/2.58	6.00/6.67/3.01	5.70/6.20/2.80	5.77/5.72/2.66	5.45/6.03/2.82	5.34/5.46/2.61
Mesosoma L	13.48	9.89	11.38	12.00	9.61	9.29
Tergite VII L/W	4.17/6.10	4.20/6.50	4.10/5.54	4.20/5.87	3.95/5.77	3.96/5.24
Metasoma +Telson L	26.67	28.41	26.58	25.18	26.38	24.88
Segment I L/W/H	3.87/3.28/2.54	4.27/3.40/2.45	3.99/3.04/2.47	3.81/3.18/2.63	3.93/3.14/2.55	3.79/2.95/2.53
Segment II L/W/H	4.81/2.99/2.53	4.90/3.28/2.57	4.98/2.82/2.48	4.47/2.91/2.62	4.80/2.84/2.43	4.47/2.80/2.60
Segment III L/W/H	5.35/3.00/2.72	6.08/3.18/2.71	5.13/2.90/2.47	4.78/2.84/2.89	5.07/2.76/2.60	4.95/2.80/2.72
Segment IV L/W/H	5.86/2.86/2.80	6.31/3.18/2.55	5.85/2.66/2.48	5.43/2.96/2.70	5.77/2.90/2.60	5.29/2.78/2.53
Segment V L/W/H	6.78/2.86/2.93	6.85/3.01/2.73	6.63/2.61/2.62	6.69/2.70/2.80	6.81/2.72/2.62	6.38/2.41/2.62
Telson Vesicle L/W/H	3.06/1.95/1.87	2.63/2.15/2.01	3.48/2.03/1.97	2.73/2.06/2.00	2.8/1.95/1.94	2.93/1.80/1.85
Pedipalp L	21.04	21.01	20.63	18.97	19.83	18.64
Femur L/W	5.24/1.68	5.84/1.60	5.31/1.37	4.55/1.70	4.81/1.27	4.61/1.47
Patela L/W	5.62/2.43	5.89/2.42	5.61/2.25	5.47/2.24	5.42/2.35	4.90/2.24
Chela L	10.18	9.28	9.71	8.95	9.6	9.13
Manus L/W/H	3.89/2.22/2.48	3.78/2.53/2.63	3.37/2.11/2.40	3.63/2.16/2.39	3.40/2.13/2.36	3.30/2.19/2.32
Movable finger L	6.65	6.55	6.6	6.31	6.51	6.55
Fixed finger L	6.29	5.5	6.34	5.32	6.2	5.83
Pectinal basal plate L/W	0.80/1.21	0.85/1.24	0.78/1.10	0.75/1.08	0.75/1.20	0.77/1.16
Pectinal tooth count	20/20	20/21	22/22	20/?	22/20	?/21
Total L	**50.22**	**48.50**	**47.76**	**47.15**	**45.39**	**43.47**

either sex, asymmetrical counts are uncommon (only one male and one female, 17% of the pooled sample), three specimens (one male, two females) had one pectine damaged each, and there are no visible differences in count between both populations available for study.

Comparison. By sharing the same combination of size, carapace coloration and shape and sculpture of pedipalps and metasoma, this species is morphologically closest only to three highly toxic taxa known to occur in southern Guerrero State as well: *Centruroides meisei* Hoffmann, 1938, *Centruroides tecomanus* Hoffmann, 1932 and *Centruroides villegasi* Baldazo-Monsivaiz, Ponce-Saavedra & Flores-Moreno, 2013.

These three species are morphologically variable and difficult to distinguish from each other, but can be easily separated from *C. bonito* **sp.n.** on the basis of: **1)** tergites with the dark pattern variably developed, but always arranged into two narrow, irregular longitudinal stripes typical of most members of the genus; **2)** metasomal segments with ventral surface irregularly spotted with medium to dark brown, but with ventrolateral and ventral submedian carinae not sharply infuscate; **3)** subaculear tubercle conspicuously larger and sharper, shaped as a long spine.

In addition to these three shared differences, other characters that allow a reliable individual distinction are listed as follow:

- ***C. meisei*: 1)** metasomal segments remarkably less slender; **2)** telson vesicle rounder and less elongate; **3)** male with pedipalp chela conspicuously more robust.
- ***C. tecomanus*: 1)** subaculear tubercle curved downwards; **2)** metasomal segments with slightly stronger carinae and more granulose intercarinal spaces; **3)** female with carapace and tergites more coarsely granulose.
- ***C. villegasi*: 1)** subaculear tubercle points towards basal half of the aculeus; **2)** adult females have metasomal segments remarkably less slender; **3)** male with pedipalp femur and patella less slender.

Distribution (fig. 6). Known only from the Pacific foothills of the Sierra Madre del Sur mountain range, in the region traditionally known as "Costa Grande" of southern Guerrero State.

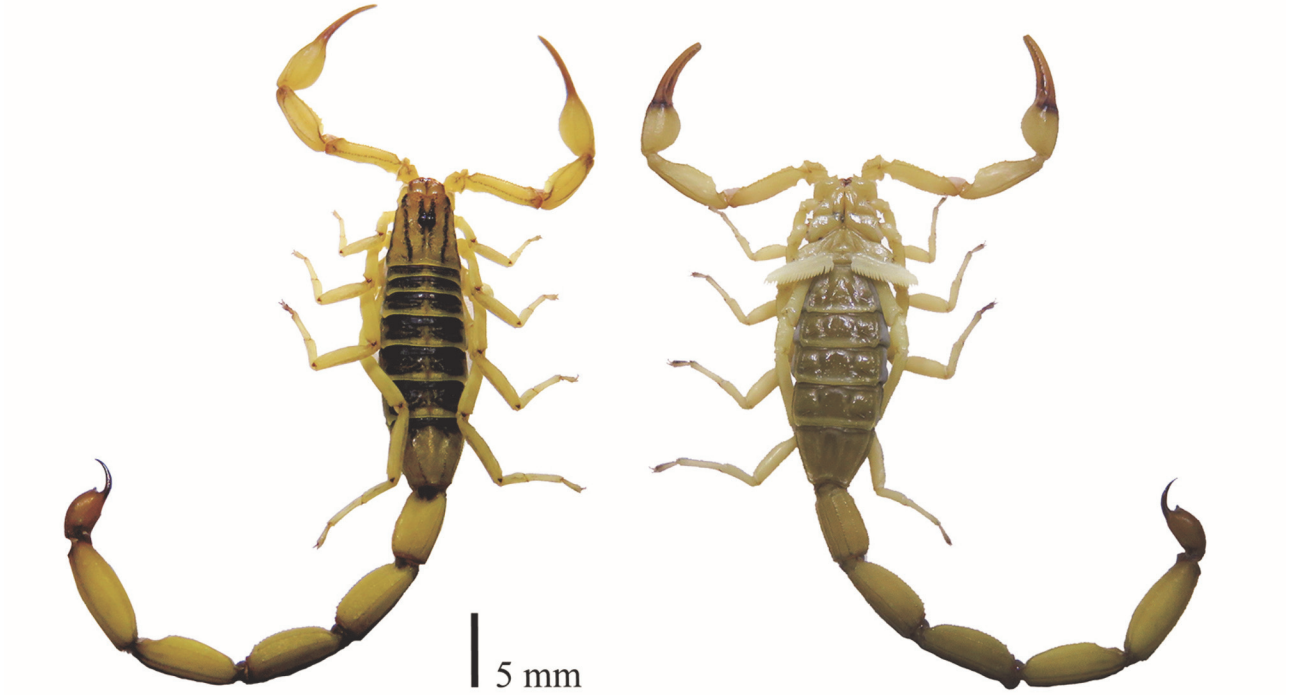


Fig. 1. Adult male holotype of *Centruroides bonito* **sp.n.**, dorsal (left) and ventral views.

REMARKS. The locality given as "Cerro" in the original label of the two mutilated female paratypes is imprecise, i.e., there is no place with this exact toponym in Petatlán municipality. Nevertheless, its main cite is also named Petatlán and is surrounded by low conical hills locally known as "cerros", thus, the type specimens were most likely collected in one of those hills.

The type specimens were collected 22 km north of Petatlán, near to "Ocote de Peregrino" village. The original vegetation of semicaducifolious forest has been destroyed almost completely and replaced by extensive cattle farming and several crops, mainly corn *(Zea mays* L.). *C. bonito* was found with several individuals of *C. meisei*.

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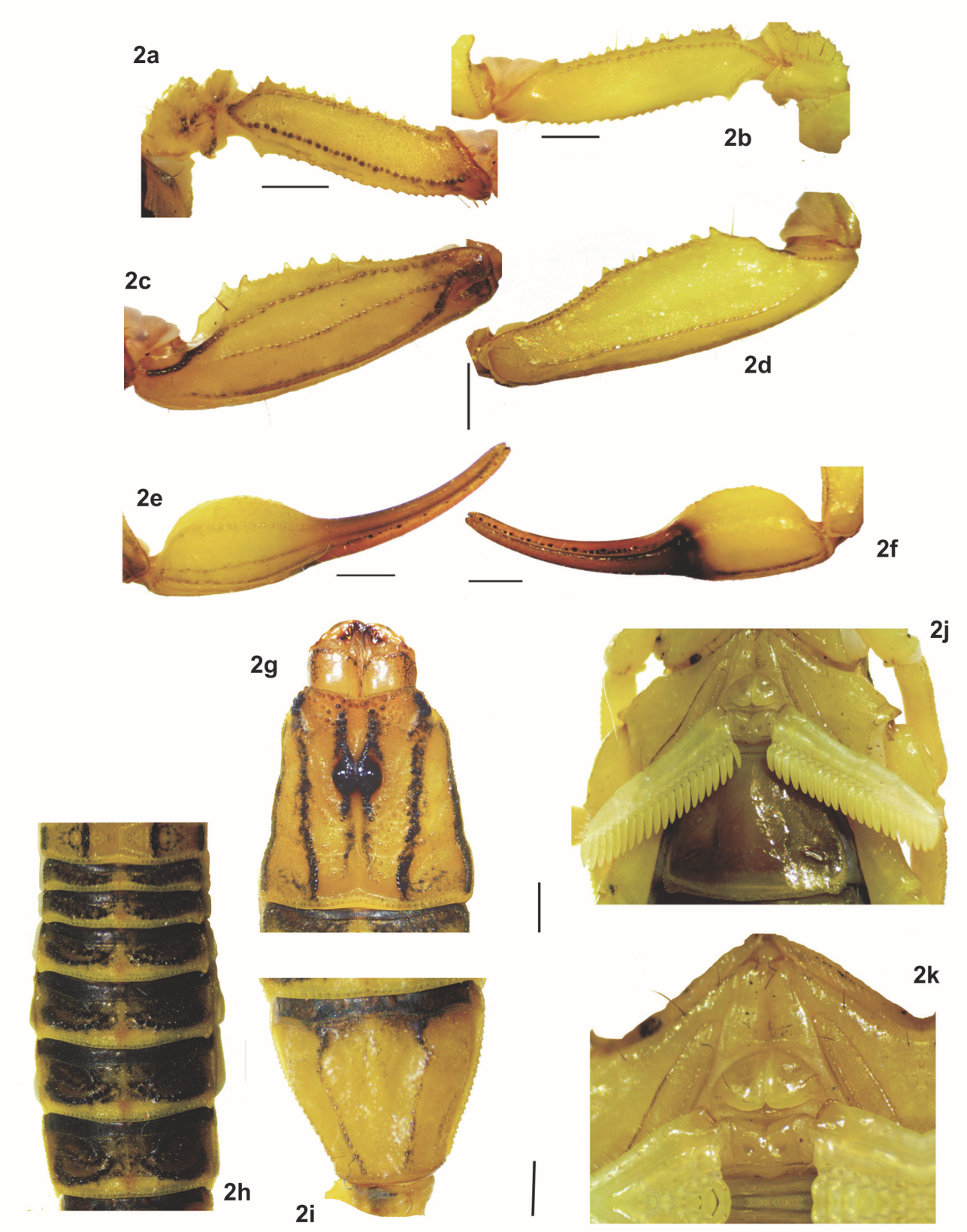


Fig. 2a-k. Adult male holotype of *Centruroides bonito* **sp.n.**: **a–b)** pedipalp femur, dorsal and ventral views; **c–d)** pedipalp patella, dorsal and ventral views; **e–f)** pedipalp chela, dorsal and ventral views; **g)** chelicerae and carapace; **h)** tergites I–VI; **i)** tergite VII; **j)** sternopectinal region and sternite III; **k)** close-up of sternum, genital operculum and pectinal basal plate. Scale: 1mm.

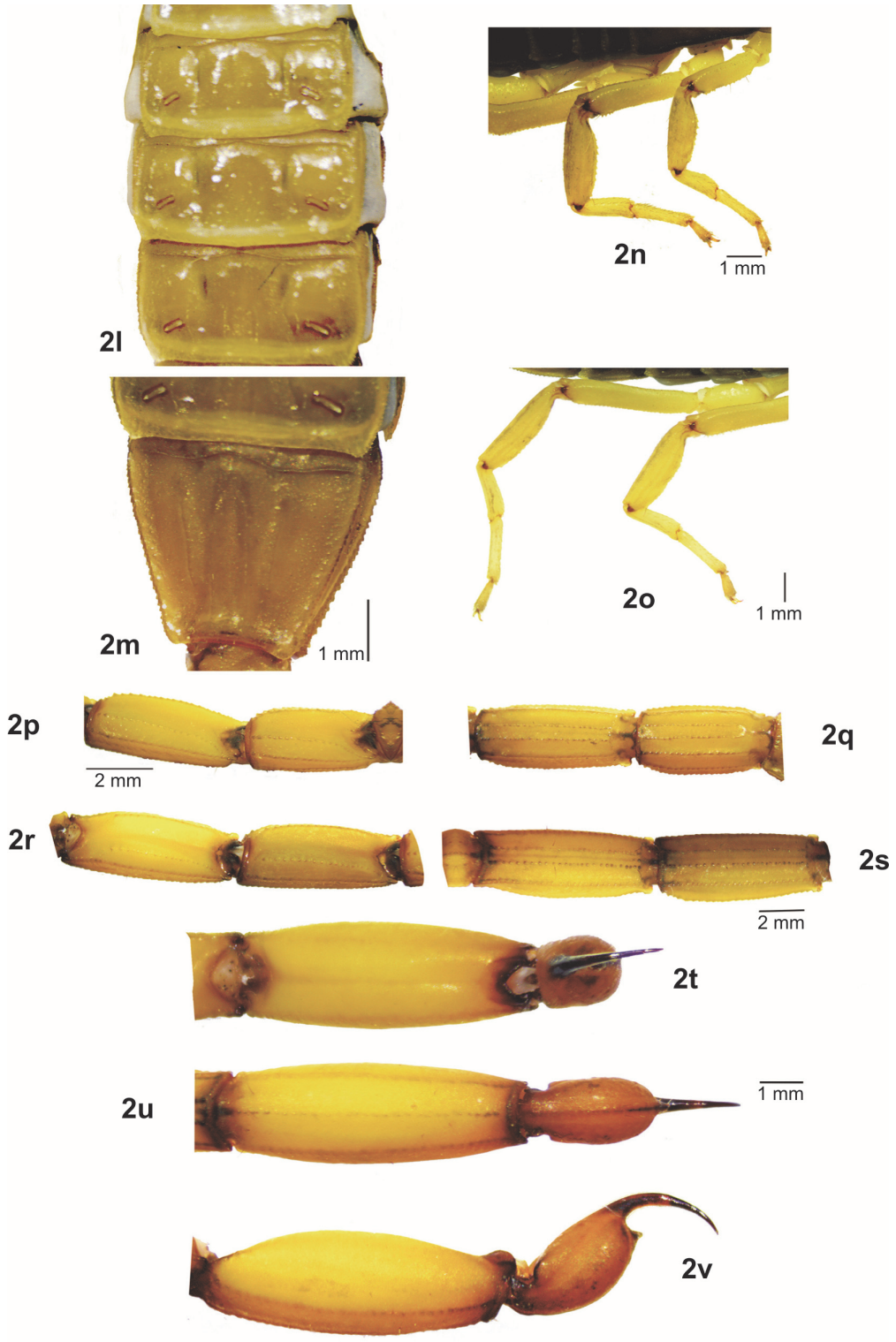


Fig. 2i-v. Adult male holotype of *Centruroides bonito* **sp.n.**: **l)** sternites IV–VI; **m)** sternite VII; **n)** legs I–II, external view; **o)** legs III–IV, external view; **p–q)** metasomal segments I–II, dorsal and ventral views; **r–s)** metasomal segments III–IV, dorsal and ventral views; **t–v)** metasomal segment V and telson, dorsal, ventral and lateral views.

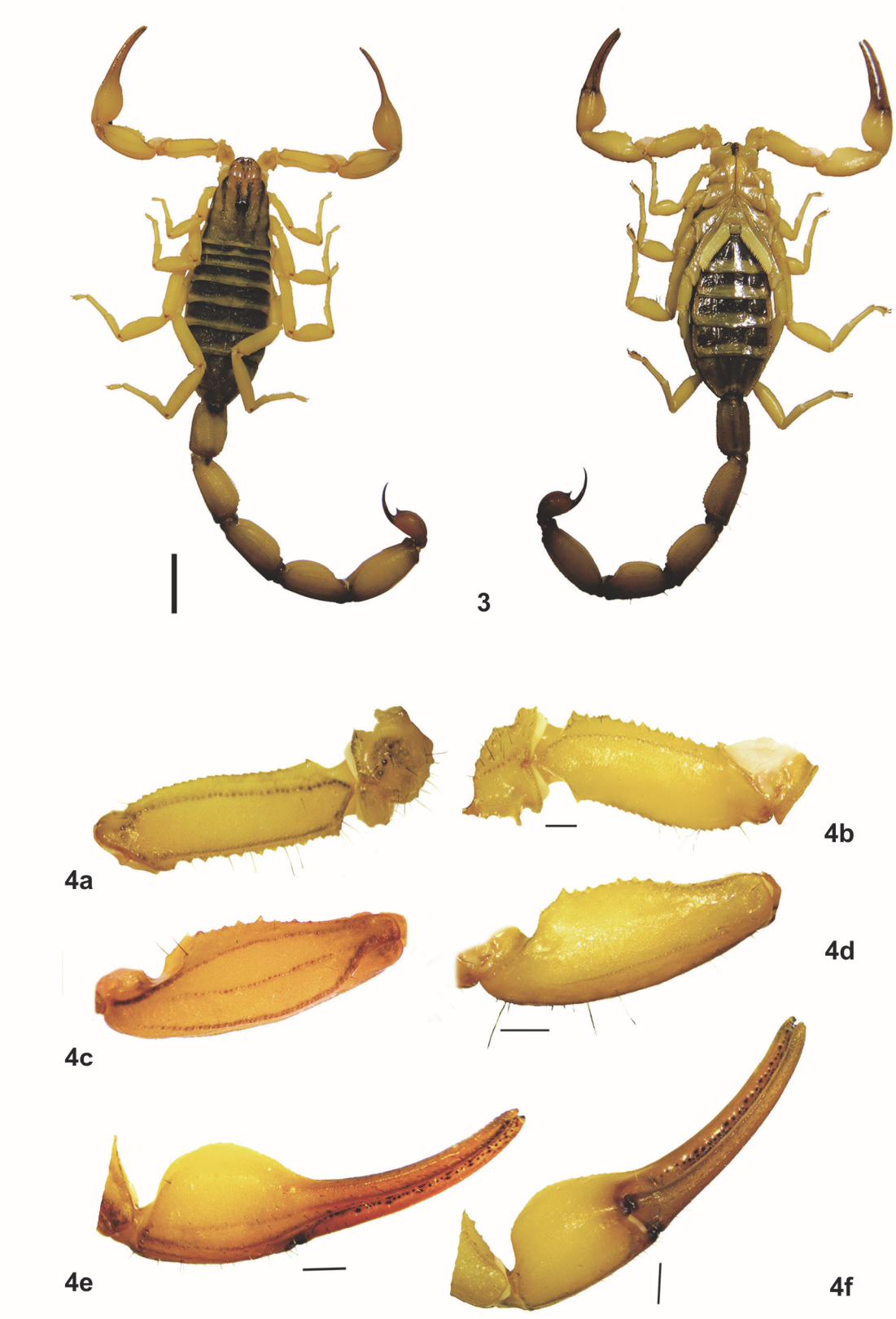


Fig. 3. Adult female paratype of *Centruroides bonito* **sp.n.**, dorsal (left) and ventral views.**Fig. 4a-f.** Adult female paratype of *Centruroides bonito* **sp.n.**: **a–b)** pedipalp femur, dorsal and ventral views; **c–d)** pedipalp patella, dorsal and ventral views; **e–f)** pedipalp chela, dorsal and ventral views. Scale: fig. 3: 5mm; fig. 4: 1mm.

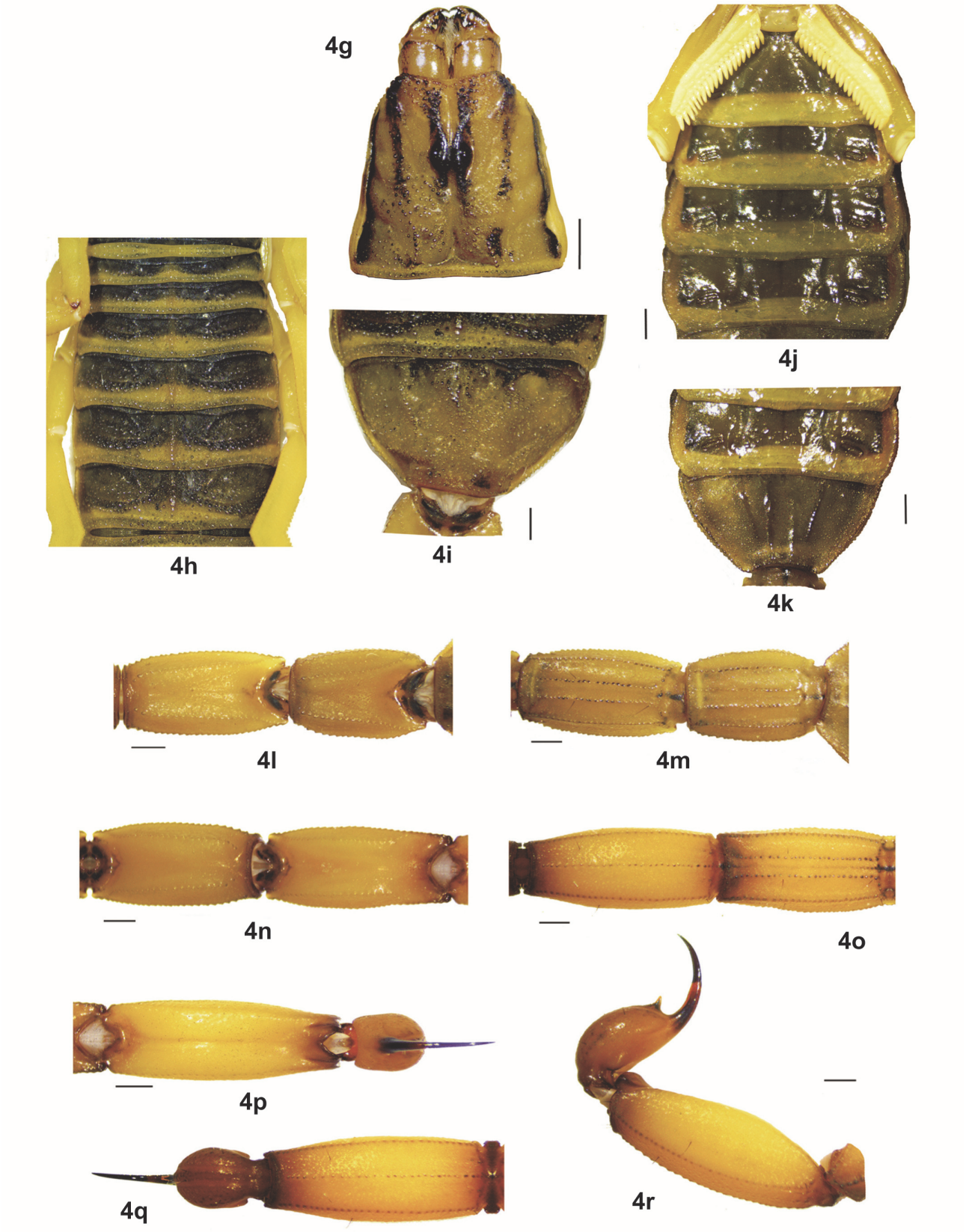


Fig. 4g-r. Adult female paratype of *Centruroides bonito* **sp.n.**: **g)** chelicerae and carapace; **h)** tergites I–VI; **i)** tergite VII; **j)** pectines and sternites III–VI; **k)** sternites VI–VII; **l–m)** metasomal segments I–II, dorsal and ventral views; **n)** metasomal segments III–IV, dorsal view; **o)** metasomal segments IV–V, ventral view; **p–r)** metasomal segment V and telson, dorsal, ventral and lateral views. Scale: 1 mm.









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Fig. 5. Live adults of two closely-related species, all collected in Guerrero State (male top, female bottom): **a)** *Centruroides meisei* from Acapulco, type locality; **b)** *Centruroides meisei* from Petatlán; **c)** *Centruroides tecomanus* from Barranca de San Diego. **Fig. 6.** Known distribution of *Centruroides bonito* **sp.n.**