

## A NEW SPECIES OF *CONIOPHANES* (SQUAMATA: COLUBRIDAE), FROM THE COAST OF MICHOACÁN, MEXICO

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**ABSTRACT:** We describe a new species of colubrid snake of the genus *Coniophanes* from the Pacific coast of Michoacán, Mexico. This species is known from a single adult female collected near sea level in dry deciduous forests. The new species is most similar to *C. piceivittis*, *C. schmidti* and *C. taylora*. It shares with these three species 25 scale rows at midbody, a small sub-preocular scale, and a pattern of three dark brown stripes over a pale brown body. The new species differs most noticeably from the other three in possessing a narrower dark vertebral stripe. *Coniophanes p. taylora* is elevated to a species status, therefore the *C. piceivittis* group consists of four species.

**Key words:** Colubridae; *Coniophanes michoacanensis*; Mexico; Michoacán; New species

THE OPISTOGLYPHOUS snakes of the genus *Coniophanes* (Colubridae: Xenodontinae) are distributed throughout Mesoamerica, from southern Texas on the coast of the Gulf of Mexico and from southern Sinaloa on the Pacific coast to Pacific Ecuador and Peru in South America. The genus contains 13 species arranged in six species groups, according to Bailey (1939), Campbell (1989), Myers (1969), and Ponce-Campos and Smith (2001). These groups are: the *Coniophanes bipunctatus* group (*C. bipunctatus* and *C. quinquevittatus*), the *C. dromiciformis* group (*C. dromiciformis* and *C. joanae*), the *C. fissidens* group (*C. alvarezi* and *C. fissidens*), the *C. imperialis* group (*C. imperialis* and *C. meridanus*), the *C. lateritius* group (*C. lateritius*, *C. melanocephalus*, *C. sarae*), and the *C. piceivittis* group (*C. piceivittis* and *C. schmidti*).

During a herpetological survey of the “El Farito” sea-turtle nesting beach near Caleta de Campos, Municipality of Aquila, Michoacán, Mexico in 1991–1992 (Vargas-Santamaría and Flores-Villela, 2006), one of us (OFV) collected a single specimen of *Coniophanes*. The specimen was assigned to *C. piceivittis* by Vargas-Santamaría and Flores-Villela (2006). More recent collections in the area by the authors and other herpetologists have revealed no additional material assignable to this species. The distinctive morphology of the above specimen, the inability to secure additional material for over eight years, and

the geographically disjunct locality from where it was taken with respect to its closest relatives urge us to describe it as a new species. We also present evidence for the specific recognition of *C. p. taylora* (Hall, 1951).

### MATERIALS AND METHODS

Terminology and characters included in the diagnosis and description follow the format of Campbell (1989) and citations therein. Sex and maturity of the holotype were confirmed by dissection, which revealed gonads and oviduct distension and development. Head and scale measurements were taken using digital calipers, and were rounded to the nearest 0.1 mm. Body and tail measurements were taken with a metal ruler. The color description of the holotype in life was based on an electronic image from a color transparency of the freshly euthanized animal prior to fixation. This image is deposited at the UTA Amphibian and Reptile Diversity Research Center Digital Collection (UTADC). Comparisons to other species were made directly (see specimens examined in Appendix I) and with data presented in literature (viz., Bailey, 1939; Campbell, 1989, 1998; Harrison, 1992; Lee, 1996).

### SYSTEMATICS

*Coniophanes michoacanensis* sp. nov.

Figs. 1–3

*Coniophanes piceivittis* —Vargas Santamaría and Flores-Villela, 2006

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FIG. 1.—*Coniophanes michoacanensis*, female holotype, MZFC-10398, 561 mm TL. Image reproduced from UTADC 4018.

*Holotype*.—MZFC 10398 (original field number OFV 424), an adult female from El Farito, 8 km NW Caleta de Campos, 17 m elevation, Municipio de Aquila, Michoacán, Mexico (18.1014° N, 102.8173° W). Obtained by O. Flores-Villela on 26 February 1992.

*Diagnosis*.—*Coniophanes michoacanensis* differs from other members of the genus, except *C. piceivittis* and *C. schmidti*, in possessing a higher number of dorsal scale rows at midbody (25; vs. 21 dorsal scale rows or less in the other species), and in having 9/9 infralabials (10/10 in *C. piceivittis*, *C. schmidti*, and *C. taylori*, with rare exceptions, Table 1). It differs from *C. piceivittis* and *C. schmidti* in having a narrow dark vertebral stripe (only three and two half scales wide; dark vertebral stripe five and two half scales wide in *C. piceivittis*, from five and two half scales to seven and two half scales in *C. schmidti*, and five and two half scales in *C. taylori*). *Coniophanes michoacanensis* further differs from *C. piceivittis* and *C. taylori* in having a narrow dark lateral stripe occupying only one and two half scales (dark lateral

stripe occupying four and two half scales in *C. piceivittis*, and two and one half scales to three in *C. taylori*). *Coniophanes michoacanensis* differs additionally from *C. schmidti* in that the lower edge of the lateral stripes contrast sharply with the ground color, *C. piceivittis* and *C. taylori* are similar to *C. michoacanensis* in this character (Figs. 2, 3, Table 2).

*Description of the holotype*.—Adult female, 561 mm in total length; tail length 155 mm, complete (27.6% total); head length 19.7 mm; head width 11.3 mm; head wider than neck; snout truncated in dorsal view; eye small (2.5 mm), snout about 0.9 times eye diameter; pupil circular; rostral about 1.2 times broader than high; internasals as wide as long, laterally in contact with anterior and posterior nasals; prefrontals large, 0.9 times wider than long, laterally in contact with posterior nasal, loreal, and preocular; median prefrontal suture 0.6 times as long as frontal; frontal about 1.3 times longer than wide; parietals 1.7 times longer than wide, length of median suture 0.8 times length of frontal; nasals completely divided; nostril located mostly in posterior portion of

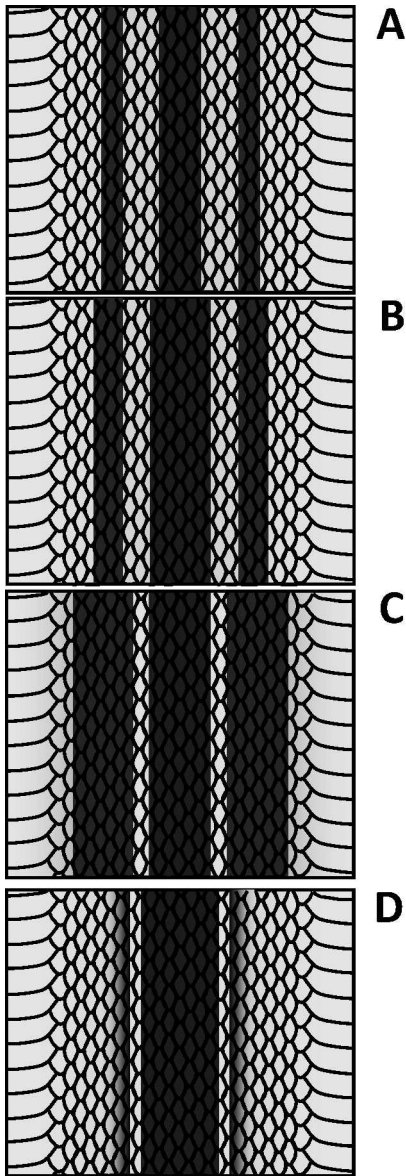


FIG. 2.—Dorsal stripe pattern in members of the *Coniophanes piceivittis* group: (A) *C. michoacanensis*, female holotype, 406 mm SVL; (B) *C. taylora*, FMNH 100868, male holotype, 238 mm SVL, from Agua de Obispo, Guerrero, Mexico; (C) *C. piceivittis*, UTA R-32965, male, 314 mm SVL, from Usumatlán, El Rancho, Zacapa, Guatemala; and (D) *C. schmidtii*, UTA R-28298, female, 436 mm SVL, from Cholul, Yucatan, Mexico.

anterior nasal; loreal present; 1/1 preoculars; 1/1 small sub-preoculars; 2/2 postoculars; 1/1 anterior temporals; 2/2 posterior temporals; 8/8 supralabials, first in contact with nasal,

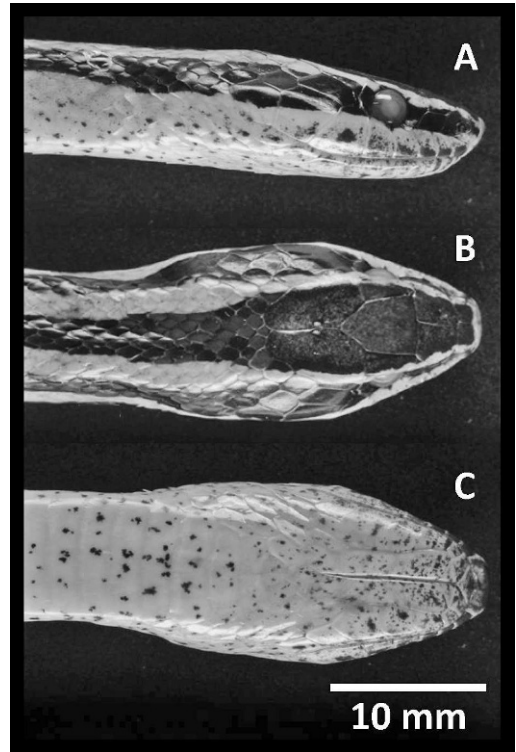


FIG. 3.—Lateral (A), dorsal (B), and ventral (C) aspects of head of *Coniophanes michoacanensis*, female holotype, MZFC-10398.

second with posterior nasal and loreal, third with loreal, preocular and sub-preocular, fourth with sub-preocular and orbit, fifth with orbit and lower postocular, sixth with lower postocular and first temporal, seventh with first temporal and lower second temporal, and eight with lower second temporal; mental about 1.6 times as wide as long, not in contact with anterior pair of chinshields; anterior chinshields well developed, about 2.3 times as long as wide; posterior chinshields well differentiated from gulars, about 2.4 times as long as wide, about the same size of anterior chinshields; posterior chinshields separated from first preventral by two pairs of gulars; 9/9 infralabials, first pair in contact along midline, first four pairs in contact with anterior chinshields, fifth pair the largest; dorsals smooth, in 23-25-19 longitudinal rows on neck, midbody, and one head length anterior to the vent, respectively; without apical pits; dorsal scales in eight rows at level of the tenth

TABLE 1.—Selected characters in members of the *Coniophanes piceivittis* group.

Taxon	Sex	n	Infralabials	Dorsals	Ventrals	Subcaudals <sup>1</sup>	SVL	Tail/TL %
<i>C. michoacanus</i>	♀	1	9/9	23-25-19	164	87	406	27.6
<i>C. piceivittis</i>	♂	5	10/10	23-25(23)-19(21)	158-171	85-94	149-334	26.9-28.5
	♀	9	10/10 (10/9, 9/9) <sup>2</sup>	23(25)-25(23)-19(21)	161-170	76-87	217-379	23.5-27.8
<i>C. schmidti</i>	♂	1	10/9	23-25-19	162	95	262	28.0
	♀	7	10/10 (10/9, 9/10) <sup>3</sup>	23-25-19	157-172	79-91	168-436	25.9-29.4
<i>C. taylora</i>	♂	2	10/10	23(21)-25(23)-19	164-169	87-90	144-325 <sup>5</sup>	25.7-29.5
	♀	3	10/10 (10/9) <sup>4</sup>	23-25-19	167-173	82-84	137-238	25.5-25.8

<sup>1</sup> Three *C. piceivittis*, one *C. schmidti*, and one *C. taylora*, all females, with broken tails.

<sup>2</sup> One specimen from Veracruz, Mexico 10/9, and one from Quiché, Guatemala with 9/9.

<sup>3</sup> Two specimens from Petén, Guatemala, with nine infralabials on one side.

<sup>4</sup> One specimen from Chilpancingo, Guerrero with nine infralabials on one side.

<sup>5</sup> Largest is the only adult of the species, shows convoluted epididymides.

subcaudal; ventrals 164; cloacal scute divided, subcaudals 87 (tail complete), paired.

*Color after about 15 years of preservation in 70% ethanol.*—Rostral cream with heavy suffusion of dark pigment on anterior surface; pale stripes on canthal borders merge on front of snout, bordering posterior part of rostral and anterior part of internasals; parietals with a small pale dot medially; pale stripes on head continuous with pale paravertebral stripes on body; upper lips white-cream; each supralabial scale with dark pigment distributed irregularly on lower half; infralabials white-cream with dark pigment distributed irregularly, extending posteriorly from chin region and fading at level of the 10th ventral scale; dorsal coloration cream-white with vertebral and lateral dark-brown stripes along body; dark vertebral stripe three and two half scales wide on most of body, starting at internasal scales and covering most of head dorsum, four and two half scales wide on nape; three scales between vertebral and lateral stripes; lateral stripes two and two half scales wide on nape, narrowing posteriorly and through most of body to one and two half scales wide; all scales on pale paravertebral stripes and sides of body

with irregular dark brown pigmentation; ventrals immaculate, except for lateral edges, which bear same pigmentation, as adjacent dorsal scales; subcaudals immaculate.

*Color in life.*—Head dark brown on top, with two white-cream stripes on head, extending backwards from snout and becoming light brown towards neck, where they merge with pale brown paravertebral stripes: two dark brown stripes originating on snout and running backwards, becoming wider on temporal region behind eye and merging with lateral dark stripes on body; dorsum of body pale brown with dark brown vertebral and lateral stripes along it (Figs. 1-3).

*Distribution.*—*Coniophanes michoacanus* is known only from the type-locality near sea level. The holotype was collected at night in a tunnel under the coastal highway (Mexico 200) from Playa “El Farito” to Caleta de Campos (Fig. 4). The type locality has some remnants of tropical deciduous forest surrounded by fruit plantations of mango and coconut trees.

*Etymology.*—The specific name *michoacanus* is derived from Michoacán, the Mexican state from which the species is described.

TABLE 2.—Comparisons of the width of vertebral and lateral stripes in members of the *Coniophanes piceivittis* group.

Taxon	Vertebral stripe	Lateral stripe
<i>C. michoacanus</i>	3 + 2(1/2)	1 + 2(1/2)
<i>C. piceivittis</i> <sup>1</sup>	5 + 0(1/2)-7 + 2(1/2)	3 + 1(1/2)-5 + 2(1/2)
<i>C. schmidti</i>	5 + 2(1/2)-7 + 2(1/2)	1(1/2)-1 + 1(1/2)
<i>C. taylora</i> <sup>2</sup>	5 + 2(1/2)	2 + 1(1/2)-3

<sup>1</sup> Specimens examined by the authors encompassed variation reported by Bailey (1939) for the whole range and by Peters (1950) for *C. frangivirgatus* (synonym of *C. piceivittis*), Veracruz; data reported by Wilson and Meyer (1955) is not included because these authors report on the variation of the species considering *C. schmidti* as a synonym of *C. piceivittis*.

<sup>2</sup> Variation reported by Hall (1951) as *C. p. taylora*, original description of taxon.



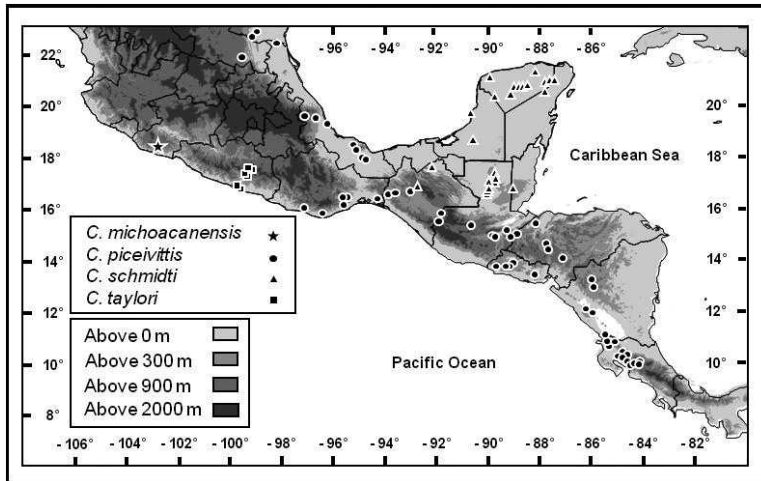


FIG. 4.—Distribution of members of the *Coniophanes piceivittis* group: *C. michoacanensis*, star; *C. piceivittis*, circles; *C. schmidtii*, triangles; and *C. taylori*, squares; modified from Harrison (1992).

#### DISCUSSION

*Coniophanes michoacanensis* is clearly a member of the *C. piceivittis* species group, defined by Bailey (1939) and Harrison (1992) as containing those species of *Coniophanes* with more than 21 dorsal scales at midbody, a high number of ventrals, and a broad mid-dorsal stripe. In examining specimens from all species groups of *Coniophanes*, we have discovered the presence of a small sub-preocular scale in *C. michoacanensis*, a character that is present in *C. piceivittis*, *C. schmidtii*, and *C. taylori*, as noted also by Bailey (1939). This character can be used to distinguish members of the *C. piceivittis* species group and is consistently absent in members of the other *Coniophanes* groups. After examination of close to 200 specimens, there were only two specimens with a 1/1 sub-preocular condition, one *C. bipunctatus*, from Veracruz, Mexico (UTA R-6873) and one *C. imperialis* from Petén, Guatemala (UTA R-50290).

The new species is isolated from the other three members of the *C. piceivittis* group, the geographic distributions of *C. piceivittis* and *C. taylori* do not reach Michoacán (Flores-Villela and Gerez, 1994; Harrison, 1992; Pérez-Ramos et al., 2000) and *C. schmidtii* is restricted to the Atlantic versant of Yucatán, Belize, Guatemala and Chiapas (Campbell, 1998; Lee, 1996). In order to eliminate the

possibility that *C. michoacanensis* may represent a case of extreme variation of the wide-ranging *C. piceivittis* or the endemic *C. taylori* we examined specimens from localities in Mexico, Guatemala, Honduras and Costa Rica, and reviewed descriptions by Bailey (1939), Peters (1950), Hall (1951), Dixon et al. (1962), Wilson and Meyer (1985), and Harrison (1992). This revision leads us to conclude that the main two characters that distinguish *C. michoacanensis* from *C. piceivittis* and *C. taylori*, the width of the vertebral and lateral stripes, do differentiate these forms (see Table 2). Additionally, we do not find any coherent geographic trend in the variation of the stripes within *C. piceivittis* and *C. schmidtii*. As an example, *C. piceivittis* from the Motagua Valley of Guatemala can be found with vertebral stripes encompassing the known range for the species, from  $5 + 0(1/2)$  to  $7 + 2(1/2)$  scales wide, and lateral stripes also with great variation, from  $3 + 2(1/2)$  to  $5 + 0(1/2)$  scales wide.

*Coniophanes piceivittis taylori* was described by Hall (1951) from four specimens collected by E. H. Taylor, H. M. Smith, and W. W. Brown, one originated from Agua de Obispo, Guerrero (type locality), two from the Chilpancingo area, and one from near Acaapulco, Guerrero. Later, Dixon et al. (1962) reported on one additional topotypic specimen. The sixth specimen known to us comes

from Puerto Marquez, Guerrero (Sánchez and López-Forment, 1988). *Coniophanes piceivittis taylori* is geographically isolated from *C. p. piceivittis* and from *C. michoacanensis*, restricted to central Guerrero, and has been reported from tropical deciduous, semideciduous and Pine-Oak forests between sea level and 1400 m. The diagnostic characters used by Hall (1951) to differentiate this taxon from *C. p. piceivittis* overlap with those found through the geographic range of the latter taxon (Harrison, 1992; Table 1). Nevertheless, the widths of the dorsal and lateral body bands are consistent characters in the differentiation of these taxa (see Table 2). These characters, along with the geographic isolation of *C. p. taylori* (Hall, 1951; Dixon et al., 1962), prompt us to consider this taxon a different species. Further molecular studies may confirm our conclusions.

Other species similar in appearance to *C. michoacanensis*, and living in geographic proximity, are *Conopsis vittatus* and *Rhadinaea t. taeniata*. *Conopsis vittatus* can be distinguished from *Coniophanes michoacanensis* (condition in parentheses) by possessing 19 scale rows at midbody (25) and seven supralabials (eight). Specimens of *Conopsis vittatus* examined by Wellman (1963;  $n = 153$ ) had 55–76 subcaudals, whereas *C. michoacanensis* has 87. According to Wellman (1963), specimens of *Conopsis vittatus* from Michoacán and adjacent areas have four dark narrow stripes (one or two scales wide) on a white or pale background; *C. michoacanensis* has three dark brown stripes, with the vertebral stripe three and two half scales wide. *Coniophanes michoacanensis* has dark pigment on the chin region as well as on the upper and lower labial scales, whereas these regions are immaculate in *Conopsis vittatus*.

*Rhadinaea t. taeniata* and *R. t. aemula* can be easily differentiated from *Coniophanes michoacanensis* (condition in parentheses) by having 17-17-17 dorsal scales (23-25-19) and ten infralabials (eight). Myers (1974) reported subcaudal counts ranging from 95 to 105 in seven females of *R. t. taeniata*, and 97 to 114 in 13 females of *R. t. aemula* (87). The dorsal color of *R. t. taeniata* from Michoacán is pale brown, with paravertebral dark stripes that are narrower than those of *C. michoacanensis*,

two half scales (two and two half scales wide). The paravertebral dark stripes are similar in *R. t. aemula* and *C. michoacanensis* (two and two half scales wide). The vertebral stripe in *R. t. taeniata* is pale brown and bisected by a narrow dark vertebral line, a condition not present in *C. michoacanensis*. The dark stripes of *R. t. taeniata* fade completely before the end of the tail, whereas in *C. michoacanensis* only the vertebral stripe disappears before the end of the tail. The vertebral stripe in *R. t. aemula* is dark brown, similar to that of *C. michoacanensis*, three and two half scales wide. The supra- and infralabials in *R. t. taeniata* and *R. t. aemula* are immaculate, contrasting with the irregular dark markings present in *C. michoacanensis*. In *R. t. taeniata* the lateral edges of the ventral scales have a single tiny dark spot adjacent to the bordering dorsal scales on the anterior half of the body, a condition absent in *C. michoacanensis* and *R. t. aemula*. The lateral light stripes on the body of *R. t. aemula* are two half scales wide, while in *C. michoacanensis* these are three and one half scales wide.

Harrison (1992) reported on stomach contents of a few *Coniophanes piceivittis* and *C. schmidti*. He found that these snakes feed on frogs, lizards and blind snakes. Based on these findings we can assume that *C. michoacanensis* also feeds on reptiles and amphibians. Many frogs and lizards were found at night in tunnels under the highway to Caleta de Campos (for a complete species list reference Vargas-Santamaría and Flores-Villela, 2006). Harrison (1992) also reports that pregnant females have no more than four fully yolked eggs at a time; one fully developed egg, ready for deposition, was found in one specimen of *C. piceivittis* from Oaxaca, collected in December, and a specimen from Veracruz, collected in July; a female *C. schmidti* from Campeche had four yolked eggs in June. Neonates, with umbilical scars, are found between late July and November and measure between 140 and 175 mm SVL (Harrison, 1992). *Coniophanes piceivittis* and *C. taylori* occupy habitats similar to those of *C. michoacanensis*, in tropical deciduous forests, although they have also been collected in other types of dry forests and in subhumid forests. Only a few specimens of *C. taylori* from

central Guerrero, Mexico have been collected in pine-oak forest (Dixon et al., 1962), between 800 and 1400 m (Hall, 1951).

Over the past three decades, the Pacific coast of west-central Mexico has produced many herpetological novelties. With the construction of the coastal highway, collectors had the opportunity to explore the low and middle elevations of this versant. New taxa described from Jalisco, Michoacán, and Guerrero include *Bothrops hesperis* (= *Porthidium hespere*; Campbell, 1976), *Lepidophyma tarascae* (Bezy et al., 1982), *Pseudoleptodeira uribei* (Ramírez-Bautista and Smith, 1992), *Tantilla sertula* (Wilson and Campbell, 2000), *Coniophanes sarae* (Ponce-Campos and Smith, 2001), and now *Coniophanes michoacanensis*.

#### RESUMEN

Se describe una nueva especie de serpiente colúbrida del género *Coniophanes* de la costa del Pacífico de Michoacán, México. Esta especie se conoce de una sola hembra adulta de 561 mm de largo total, la cual fue encontrada cerca del nivel del mar en bosque tropical caducifolio. La nueva especie se parece más a *C. piceivittis*, *C. schmidti* y *C. taylora* que a las otras especies del género. Comparte con estas tres especies, el tener 25 hileras de escamas dorsales a mitad del cuerpo, una pequeña escama sub-preocular y un patrón de tres listas pardo oscuro sobre un fondo pardo claro. La nueva especie se diferencia fácilmente de las anteriores por tener la lista vertebral bastante angosta, de tres y dos medias escamas de ancho, cinco a siete y dos medias en las otras tres especies. Se eleva *C. p. taylora* a nivel de especie y el grupo *C. piceivittis* queda constituido por cuatro especies.

*Acknowledgments.*—We are grateful to P. Ustach, C. Franklin, and J. Campbell (UTA), E. Pérez-Ramos, and U. García, for making comparative material and information available to us; A. Resetar from the FMNH, R. Brown from KU, and V. Reynoso CNAR for loan of specimens under their care. M. Benabib N. and F. Vargas Santamaría for field assistance; and L. Canseco-Márquez (MZFC), J. A. Campbell, J. Meik, T. Eimermacher and C. Sheehy (UTA) for reading a preliminary version of the manuscript; and two anonymous reviewers whose comments helped enormously in improving this paper. This paper is based in part upon work supported by the National Science Foundation under grant no. DEB-0613802 to

J. A. Campbell; ENS participation was possible by NSF grant DEB-0416160 and a grant from Bioclon, Mexico. Necessary permits were issued by SEDUE (now SEMARNAP). The final revision of this paper was done while OFV was on sabbatical at UTA supported by the CONACyT and DGAPA, UNAM, Mexico.

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Accepted: 03 August 2009

Associate Editor: Frank Burbrink

## APPENDIX I

### *Specimens Examined*

- Coniophanes alvarezii*.—MEXICO: CHIAPAS: 12.1 km ESE Teopisca (UTA R-2793, Paratype); 10.3 km ESE Teopisca (UTA R-5766, 5767, 6111–13, Paratypes); 11.3 km ESE Teopisca (UTA R-12256, Holotype).
- Coniophanes bipunctatus*.—GUATEMALA: IZABAL: El Estor, El Chupón, near Lago de Izabal (UTA R-29848); Morales, Sierra de Caral, Finca Quebrada (UTA R-32960); Puerto Barrios, km 273 carretera al Atlántico (UTA R-37252); Puerto Barrios, Finca El Jabalí (UTA R-39336-40); HONDURAS: CORTES: Cerro Azul Meambar (UTA R-53240); MEXICO: VERACRUZ: 1.5 mi. S. Juan Díaz Covarrubias (UTA R-3732); 1.6 mi. N Juan Díaz Covarrubias (UTA R-6870); 2–6 km N Juan Díaz Covarrubias (UTA R-6866, 6873).
- Coniophanes dromiciformis*.—ECUADOR: Unknown: Unknown (UTA R-23516).
- Coniophanes fissidens*.—COSTA RICA: CARTAGO: Turrialba, Guayacán (UTA R-44971); LIMON: Bananito (UTA R-44970); GUATEMALA: ALTA VERAPAZ: Cobán National Park, Laguna Lachua (UTA R-52335); BAJA VERAPAZ: Vicinity of La Unión Barrios (UTA R-16015, 20744); ESCUINTLA: S slope Volcán de Agua, Finca Rosario Vista Hermosa (UTA R-4468; 16016, 20691, 22141, 37316); Ca. 26 air km SE Escuintla, Finca El Caobanal (UTA R-26174); IZABAL: Chichipate (UTA R-22727); 5.1 km WSW Puerto Santo Tomás, Las Escobas (UTA R-20684); 7.0 km SW Puerto Santo Tomás (UTA R-20685); Montañas del Mico, Las Escobas, 5.1 rd km WSW Puerto Santo Tomás (UTA R-28295, 29849–50, 32961–62); Morales, Sierra de Caral, road Quebradas–La Firmeza (UTA R-32964); Morales, Sierra de Caral, Aldea San Miguelito (UTA R-37311–15, 37310, 38207–08); Morales, Sierra de Caral, Camino La Firmeza–Cerro Pozo de Agua (UTA R-39152); Municipio Morales, Sierra de Caral, on path to Aldea Negro Norte (UTA R-39153); Morales, Sierra de Caral, Finca La Firmeza (UTA R-52306); Sierra de Santa Cruz, Semococh, 8.0 km W Finca Semuc Headquaters (UTA R-22143); Sierra de Santa Cruz, Finca Semuc, S side Chinamococh (UTA R-26175); Sierra de Santa Cruz, Xiacam (UTA R-26176); Sierra de Santa Cruz, Exmibal Forest (UTA R-46496–97); Sierra de Santa Cruz, Livingston, Puerto Cadenas, Aldea Arenales (UTA R-46906); PETEN: La Libertad, Parque Nacional, Sierra Lacandón, Arroyo Macabillero (UTA R-46122); QUEZALTENANGO: ca. 0.5 km W El Palmar, on W bank Río Nim I. (UTA R-22700); Finca El Carmen, Km 197.5, Guat Hwy CA-2 (UTA R-20686–90); S slope Volcán Santa María, Finca El Faro, 4.0 km N El Palmar (UTA R-20692–99, 20701–43, 22705); QUICHE: Uspantán (UTA R-42484); SAN MARCOS: Malacatán: Finca San Ignacio (UTA R-46544–48); Malacatán, Finca Barranca Honda (UTA R-44744); SANTA ROSA: Near Laguna El Pino (UTA R-24804–05); Taxisco, Finca El Trebol (UTA R-42282); ZACAPA: Sierra del Merendón, Cerro del Mico, Lado Norte (UTA R-32963); La Unión, Cerro del Mono (N) (UTA R-38194); MEXICO: OAXACA: 2–3 mi. S Tapanatepec (UTA R-4337, 4339); Carretera Santa María Guienagati–Lachidola (UTA R-52641); Carretera a El Progreso desde intersección con Mex 185 (UTA R-52642); Cerro Baúl, 19 km NW Rizo de Oro (CHIAPAS) (UTA R-12257); VERACRUZ: 5.6 mi. ESE Tebanca, Los Tuxtlas (UTA R-3067); 2.1 mi. NW (by road) Sontecomapan, Los Tuxtlas (UTA R-3069); 7.7 mi. by road NW Sontecomapan (UTA R-9413, 9468); 7.7 mi. (by road) NW Sontecomapan (UTA R-9457); Sierra de Los Tuxtlas, Volcán San Martín, Rancho Primero de Mayo (UTA R-51861–62); Municipio C. Ixhualtán del Café, Guxmantla (UTA R-52626); Municipio La Perla, 3 km E of La Cumbre del Español, camino a Metlac (UTA R-52623).
- Coniophanes imperialis*.—GUATEMALA: ALTA VERAPAZ: Vicinity of Pueblo Viejo. (UTA R-26180); HUEHUETENANGO: Lagartero (UTA R-44709); IZABAL: Castillo de San Felipe (UTA R-28296); El Estor, El Zapotillo (UTA R-26178); Livingston, Aldea La Libertad, Km 285 a Pet'n (UTA R-38213); Los Amates, Quirigua, Sitio Arqueológico (UTA R-39549); Puerto Barrios, Finca El Jabalí (UTA R-38890); Punta de Manibique, near beach (UTA R-46492); PETEN: NE side Lago de Petén-Itzá, 1.0 mi. W El Remate on road to Gringo Perdido (UTA R-39180–81); 9.5 km N El Caoba on El Remate-Tikal Road (UTA R-39182); 11.4 km W San Francisco road to Santa Rita (UTA R-39183); Tikal, ca. 2.0 km SW Visitor Center Museum (UTA R-41177); 3.7 km S Zocotzal (UTA R-50289); in front of Biotopo Cerro Cahui (UTA R-50290–92); MEXICO: OAXACA: 12.0 mi. NW Tehuantepec (UTA R-4340); VERACRUZ: Encinal, Los Tuxtlas (UTA R-3078); 19.5 mi. S Catemaco bridge (UTA R-6861); Victoria, ca. 4 mi. S Catemaco on rd from Catemaco to Acayucan. (UTA R-6876); 16.5 mi. S bridge at W end Lago Catemaco (UTA R-6864); Volcán San Martín (UTA R-17220); YUCATAN: Carretera Ría Lagartos–San Felipe (UTA R-53415–16); USA: TEXAS: Brownsville area (UTA



R-26694); Southmost palm grove E Brownsville (UTA R-1595); Brownsville (UTA R-44273); 24.1 km W Brownsville on US 281 (UTA R-44274).

*Coniophanes lateritius*.—MEXICO: SINALOA: 5.0 mi. SW San Ignacio (UTA R-5561).

*Coniophanes melanocephalus*.—MEXICO: MORELOS: Cuernavaca (UTA R-56408).

*Coniophanes michoacanensis*.—MEXICO: MICHOACÁN: Municipio de Aguila, playa de El Farito, 8 km NW Caleta de Campos (MZFC 10398, Holotype).

*Coniophanes piceivittis*.—MEXICO: OAXACA: Mex 200, carretera Pochutla-Santo Domingo Tehuantepec, DOR (MZFC-17292); 2–3 mi. S Tapanatepec (UTA R-4338); Carretera San Pedro Pochutla-Puerto Ángel (UTA R-51863); VERACRUZ: 1 mi. S Juan Díaz Covarrubias (UTA R-2827); 18.6 mi. S bridge at W end Lago Catemaco (UTA R-6863). GUATEMALA: no other locality data (UTA R-28297); HUEHUETENANGO: Cuilco: Caserío Mojuba (UTA R-39184); 9.2 km N Cuatro Caminos, at Río Azul (UTA R-42312); QUICHÉ: Chicamán, Chixoy (UTA R-42464); ZACAPA: Among cabins at Usumatlán 20.5 km N of CA 9 where road crosses river (UTA R-32965); Gualán, aldea Arenal, km 164 carretera al Atlántico (UTA R-44764); Cabañas El Arenal (UTA R-52276); HONDURAS: COMAYAGUA: Comayagua Playitas, Aldea "Lo de Reina" (UTA R-41256); COPÁN: Santa Rita Copán (UTA R-53236); COSTA RICA: GUANACASTE: Liberia: Santa Rosa National Park (UTA R-44958).

*Coniophanes quinquevittatus*.—GUATEMALA: PETÉN: Flores, Lago Petén-Itzá (UTA R-32966); in front of Biotopo Cerro Cahui in Lago Petén-Itzá (UTA R-50295); MEXICO: VERACRUZ: 2.1 mi. W Lerdo de Tejada (UTA R-6871).

*Coniophanes sarae*.—MEXICO: MICHOACÁN: Chicuila, near Tehuantepec (MZFC 13030, holotype).

*Coniophanes schmidtii*.—MEXICO: YUCATÁN: Cholul (UTA R-28298); Valladolid, Pisté DOR (UTA R-53430); GUATEMALA: PETÉN: ca. San José (UTA R-37249–50); ca. San José, N shore Lago Petén-Itzá (UTA R-37251); 6.4 km N el Caoba, el Remate-Tikal (UTA R-39163); Gringo Perdido, NE side of Lago Petén Itza near El Remate (UTA R-50293–94).

*Coniophanes taylora*.—MEXICO: GUERRERO: Acapulco: 2 km W Puerto Marquez (CNAR 9452); Agua del Obispo (FMNH 100868, holotype), Agua del Obispo, 3300 ft. (KU 67647); Chilpancingo, 3700 ft. (KU 23789, paratype); 8 mi. E Chilpancingo (FMNH 126631, paratype); Km 357 on highway [near Acapulco] (FMNH 126630, paratype).

*Conophis vittatus*.—MEXICO: MORELOS: Sierra de Huautla (UTA R-52603).

*Rhadinaea taeniata taeniata*.—MEXICO: MICHOACÁN: Sierra de Mil Cumbres, ca. 32–48 km E Morelia. DOR (UTA R-12417).

*Rhadinaea taeniata aemula*.—MEXICO: GUERRERO: Omiltemi (UTA R-2832–33, 2834–36, 4424, 4684); 1.5 mi. SW Omiltemi (UTA R-2832–33).