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NEW FORMS OF *CONIOPHANES* HALLOWELL, AND
THE STATUS OF *DROMICUS CLAVATUS* PETERS

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A TAXONOMIC study of the genus *Coniophanes* Hallowell has revealed the existence of some previously unrecognized forms, and the probable true status of a form that has been grossly misunderstood. Since publication of the complete investigation is to be deferred for some time, the following descriptions and proposals are made available. The numerous persons to whom I am indebted for loans and other courtesies will receive acknowledgment in a future paper.

All measurements are given in millimeters.

Coniophanes schmidtii, n. sp.

HOLOTYPE.—MZUM.¹ No. 73043, adult male, collected June 30, 1932, by Edwin Creaser, at Chichen Itzá, Yucatán.

PARATYPES.—MZUM. Nos. 73039–42, FMNH. No. 20633, and MCZ. No. 22065, all from Chichen Itzá; and MZUM. Nos. 74893–94, from La Libertad, Petén, Guatemala.

DIAGNOSIS.—A *Coniophanes* with 23–25 dorsal scale rows, differing from *piceivittis* in having a narrower lateral dark

¹ The following abbreviations are employed: MZUM., Museum of Zoology, University of Michigan; MCZ., Museum of Comparative Zoology, Harvard University; FMNH., Field Museum of Natural History, Chicago; ANSP., Academy of Natural Sciences of Philadelphia.

stripe, $\frac{1}{2}$ – $1\frac{1}{2}$ rows wide, which gradually becomes lighter toward the ventrals, and in having a higher number of caudals.

DESCRIPTION OF HOLOTYPE.—Dorsal scale rows 23–25–19, reducing by loss of the paravertebral rows opposite ventrals 101, 116, and 141 respectively; keeled at the anal region, lateral rows most strongly so, and with a further tendency toward keeling where reduction takes place. Ventrals, 170; subcaudals, 101 pairs. Upper labials, 8, 4 and 5 in eye; lower labials, 10, 6 in contact with chin shields; oculars, 2–2, including a small subpreocular; temporals, 1–2–3; nasal semidivided; loreal broader than high; frontal once and a half as long as broad.

Head brown, labials shaded with light brown. A light stripe from snout through the top of the eye extends backward to a point slightly behind the parietals (less distinct anterior to eye). This stripe continues as a dorsolateral light line $1\frac{1}{2}$ scales wide after interruption for the space of about 1 scale on the neck. A broad dorsal black band is $5\frac{2}{3}$ scales wide at mid-body. The half row (lower half of eighth row) below the dorsolateral light lines is black like the dorsal band, becoming gradually lighter ventrally. Chin and throat dotted with dark, ventral surface immaculate yellow.

Hemipenis with forked sulcus, longitudinal laminae basally followed by numerous small spines, and a slightly bifurcate capitate tip. Maxillary teeth about 9, followed by a gap and 2 enlarged grooved fangs. Body, 372; tail, 175.

VARIATIONS.—The 2 specimens of *piceivittis* recorded by Boulenger² seem to be referable to *schmidti*, according to data generously taken for me recently by Roger Conant. The counts for these specimens are included in the statement of variation, which may be summarized as follows: dorsals, 21–23–19 to 25–19; ventrals, 158–174; caudals, male, 91–115, female, 87–103; width of lateral black stripe, $\frac{1}{2}$ – $1\frac{1}{2}$ scales; tail length/body length, male, 42.6–51.3 per cent, female, 36.3–46.7 per cent. The lowest ventral count for each sex is from a specimen from Petén, and the Petén female has the lowest caudal count. The tail of the Petén male is incomplete.

² *Catalogue of Snakes in the British Museum* (London: Published by Order of the Trustees, 1896), 3: 209.

REMARKS.—The type of *Tachymenis taeniata* Peters should be re-examined. The inadequate description does not reveal which of the 2 high scale-row *Coniophanes* this author had, and I have been unable to obtain any further information concerning it.

Coniophanes schmidti probably replaces *piceivittis* on the Yucatán Peninsula, but I have seen no sign of intergradation between the forms. All records from Petén and the Yucatán Peninsula should be referred to *schmidti*, which has been confused with *piceivittis* several times in the literature.

Karl P. Schmidt,³ to whom the species is dedicated, recently pointed out the chief difference between this form and *piceivittis*.

Coniophanes brevifrons, n. sp.

HOLOTYPE.—ANSP. No. 3349, adult male, Ecuador, collected by James Orton.

DIAGNOSIS.—A *Coniophanes* with 19 scale rows; mature males with anal keels; frontal shorter than its distance from the tip of the snout; no black stripes between eyes; caudals, 105.

DESCRIPTION OF HOLOTYPE.—Body slender, tail long, head distinct from neck. Snout less rounded than usual, the internasals being on nearly the same plane as the frontal and parietals in longitudinal section. Dorsal scale rows, 19–17–16, reducing by loss of the paravertebral rows (last reduction on one side only), keeled at the anal region; ventrals, 138, caudals, 105. Upper labials, 8, 4 and 5 in eye; lower labials, 10, 6 in contact with chin shields; oculars and temporals, 1–2. Frontal projected just reaches the posterior tip of the rostral.

The top of the head is uniform brown; body grayish brown. A median dorsal stripe is represented by darkened areas at the overlap of the scales of the median row, becoming very diffuse on the adjoining rows. A similar line is present on the fifth row. Light lines on the sixth lateral row begin about 3 scales back of the head and continue for a short distance. A yellow line along the top of the upper labials extends for a short

³ Karl P. Schmidt and E. W. Andrews, "Notes on Snakes from Yucatan," *Field Mus. N. H., Zool. Ser.*, 20, 18 (1936): 179.

distance behind the corner of the mouth. The labials below this line and the ventral surface are washed with brown, most deeply anteriorly. A dim double row of brown spots is evident near the outer edges of the ventrals.

Hemipenis short, stout, single throughout, with 3 enlarged basal hooks and 24 smaller and more distal spines; tip distinctly capitate, with sulcus forking at the base of the cap. Maxillary teeth, 12, followed by a gap and 2 enlarged grooved fangs. Body, 357; tail, 200.

RELATIONSHIPS.—*Coniophanes brevifrons* is most closely related to *fissidens*, from which it differs in several details. The ventral and caudal counts are higher than the male maxima for *fissidens*, in which the frontal is longer than its distance from the tip of the snout. Specimens of *fissidens* from the southern part of its range have 21 scale rows, but 19 scale rows are frequently found on individuals in Mexico. In addition, I have seen a specimen with 19 rows from Guatemala, and Hollowell⁴ recorded one from Nicaragua. The hemipenial hooks and spines do not total more than 20 in *fissidens*.

The only other *Coniophanes* occurring in Ecuador is *dromiciformis*, which may be readily distinguished by the black lines on the head between the eyes, shape of the head, and lower ventral and caudal counts. Since no more definite locality than Ecuador is available for this specimen, it will be interesting to learn whether or not *brevifrons* occupies the same habitat as *dromiciformis*.

Coniophanes fissidens andresensis, n. subsp.

HOLOTYPE.—MCZ. No. 31867, adult female, San Andres Island, off the coast of Nicaragua.

DIAGNOSIS.—A *Coniophanes* resembling *fissidens*, but having 144 ventrals. Dorsals scale rows, 19–17–15, upper labials, 8.

REMARKS.—The highest ventral count found in mainland *fissidens* is 136 from Mexico. The total range of variation on the mainland is: 45 males, 111–132; 43 females, 118–136. The

⁴ "Report upon the Reptilia of the North Pacific Exploring Expedition, under command of Capt. John Rogers, U. S. N.," *Proc. Acad. Nat. Sci. Phila.*, 1860: 485.

maximum ventral range that I have found for females from a single area is 10 for Panama, and less for a single locality. The range of ventral variation on little San Andres Island is likely so small that even if this specimen represented the higher limit the amount of overlap with the distant Mexican population would be very slight indeed. San Andres lies in deep water about two hundred miles off the coast, so the chance of this particular specimen having arrived there fortuitously is remote. The tail of the specimen is incomplete.

RELATIONSHIPS.—We find, peripheral to the range of 21-row *fissidens*, closely related forms with 19 rows represented by *brevifrons* in Ecuador, *fissidens andresensis*, and a considerable percentage of Mexican *fissidens* with 19 rows. These populations, at present widely discontinuous in distribution, may indicate that ancestral *fissidens fissidens* had 19 scale rows.

THE STATUS OF *DROMICUS CLAVATUS* PETERS

In 1860 Cope⁵ described *Coniophanes proterops* from Jalapa, comparing it to *imperialis*. Later authors, except for Günther who synonymized *proterops* and *imperialis* under *fissidens*, have considered *proterops* a synonym of *imperialis*, or have employed it, as did Cope, for a southern representative of *imperialis*. The species *imperialis* and *fissidens* are certainly very distinct, although the superficial resemblance may be close. The type of *proterops*, USNM. No. 5285, proves, upon re-examination, to be a specimen of *fissidens* with 19 scale rows and 7 upper labials, a common variation in Mexico.

A distinguishable southern race of *imperialis* exists, however, for which the first available name is *Glaphyrophis lateralis* Jan. The genus *Glaphyrophis* was proposed by Jan to include *lateralis* and *pictus* (= *Coniophanes bipunctatus*). For reasons which will be evident below I designate *pictus* the genotype of *Glaphyrophis*. Unfortunately the name *lateralis* was based on a series of specimens which are a complex of probably three races of *imperialis* and another snake which is very likely not

⁵ "Catalogue of the Colubridae in the Museum of the Academy of Natural Sciences of Philadelphia, with Notes and Descriptions on New Species. Part 2," *Proc. Acad. Nat. Sci. Phila.*, 1860: 249.

a *Coniophanes*. As the name seems not to have been previously restricted, in order to dispose of it once and for all, I designate the largest cotype from Tampico (specimen in the Milan Museum), with ventrals and caudals 143 and 80 respectively, as lectotype, thus effectively placing the name in the synonymy of *imperialis imperialis*. Although I have not seen any of the type series, there is little doubt that the designated specimen should be referred to *imperialis imperialis*, for Tampico is within the range of this form only, and the scale counts fit with it rather than with the adjoining and more widespread race.

The next available name is *Dromicus clavatus* Peters⁶ described simply from Mexico. There is no apparent disagreement between the excellent description and the form in question except that the character of grooved posterior maxillary teeth is not mentioned. As this character could have been easily overlooked I see no reason for rejecting this name. Since much confusion has persisted in regard to these forms, I offer the following synopsis:

- A. Scale rows usually 21; mature males with keeled anals; no light temporal stripe; hemipenis short, spinous, and capitate.
- fissidens* group
- AA. Scale rows usually 19; anals never keeled; a distinct light temporal stripe; hemipenis long and slender, without spines, deeply bifurcate, and calyculate but not capitate*imperialis* group

Coniophanes imperialis clavatus (Peters)

TYPE LOCALITY.—Mexico.

DIAGNOSIS.—A *Coniophanes* with 19 dorsal scale rows (very rarely 21); ventrals 117–134; caudals 70–88; ventrals minus caudals, male less than 50, female less than 61 (except in Campeche). A well-defined light temporal stripe present. A mid-dorsal stripe may be continuous, broken into spots, or missing, but not more than 1 scale wide. The dark lateral stripes are not distinctly bicolored (lighter below than above) except anteriorly. Hemipenis as defined above.

RANGE.—Central Vera Cruz to northern Honduras on the east coast. Intergradation with *imperialis* takes place in northern Vera Cruz.

⁶ *Monatsber. Akad. Wiss. Berlin*, 1864: 388.

