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THE SNAKE GENUS ENULIUS COPE

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The collection of this Academy contains the type specimen of *Liophis flavitorques* Cope 1869, from the Magdalena River, Colombia, a species which has not been reported since its original description. It also houses two specimens which are assuredly part of the original "several" on which Cope, in 1871, based his new genus *Enulius*, and his new species *murinus*. This form has been reported once since, from Mexico, by Bocourt in 1883, but this report was, according to Cope in 1884, erroneous. Upon examining *L. flavitorques* and *E. murinus* I was surprised to find them conspecific, and further to be identical with the tolerably well-known snake which Günther described from South America in 1872 as *Leptocalamus torquatus*.

In connection with this complete change in nomenclature I have gathered a few data on this form and on another species of the genus and present them here.

*Enulius flavitorques* (Cope).

- 1869 *Liophis flavitorques* Cope, Proc. Acad. Nat. Sci. Philadelphia 20, p. 307 (Magdalena River, Colombia. Type A.N.S.P. 3695).
- 1871 *Enulius murinus* Cope, Proc. Amer. Phil. Soc. 11, p. 559 and Rep. Peabody Acad. Salem 2-3, p. 80 (statements identical and exact dates uncertain, Chinandega, Nicaragua. Collected by McNeill. Types: "several were from a well 50 feet deep". "Peabody Acad. 516." Two are now A.N.S.P. 3314-5; the whereabouts of the others not known).
- 1872 *Leptocalamus torquatus* Günther, Ann. Mag. Nat. Hist. (4), 9, p. 17 (South America. I have examined the type in the British Museum).
- 1881 *Geophis unicolor* Fischer, Abh. Nat. Bremen, p. 227, pl. 15, f. 1-3 (Mexico. I have not seen the type, which is Bremen 434).
- 1883 *Enulius samachensis* Bocourt, Miss. Sci. Mex., Rept., p. 538, pl. 31, f. 6 (Tehuantepec, Mexico. Type in Paris, not seen).
- 1883 *Enulius murinus* Bocourt, l.c., p. 537, pl. 35, f. 9 (Mexico, two).
- 1884 *Geogis longicaudatus* Cope, Amer. Nat., p. 162 (substitute name for *Enulius murinus* Bocourt).

*Material*: I have examined 74 specimens of this species, as follows:

GUATEMALA: Coffee Zone (Field Mus. 22913); Escuintla (U. S. N. M. 12694, five). Boulenger (1896, Cat. Snakes Brit. Mus. (2), 3, p. 641) records one without specific locality.

HONDURAS: San Pedro Sula (Field Mus. 5280-3); Subirana Valley, Yoro (Field Mus. 21848).

NICARAGUA: Chinandega (A. N. S. P. 3314-5); Lake Nicaragua (Brit. Mus.), Andersson (1916, Medd. Göteborg Mus. 9, p. 31) records one from "G. Granada".

COSTA RICA: Miravalles (M. C. Z. 15264); Barranca (Mus. Nae. Costa Rica); Cartago (two, Coll. St. Luis Gonzaga); no locality (Mus. Nae. Costa Rica, Seminario de San Jose).

PANAMÁ: Chiriquí (Berlin); Pedro Gonzales I. (M.C.Z.); Ancon 14 (M.C.Z.); Balboa 7 (M.C.Z., A.M.N.H.); Bruja Pt. (M.C.Z.); Flamenco I. (M.C.Z.); Ft. Amador (M.C.Z.); Albrook Field (M.C.Z.); La Boca (M.C.Z.); Sabanas 4 (M.C.Z.); Fort Clayton 4 (M.C.Z.); Pedro Miguel 4 (M.C.Z.); Summit (Lindsay); Frijoles (Carnegie); Barro Colorado I. (M.C.Z.); Cristobal (A.N.S.P.); Ft. Davis (M.C.Z.); Ft. Sherman 2 (M.C.Z.); Canal Zone (M.C.Z.); Panamá 4 (M.C.Z., U.S.N.M., Collegio La Salle). Peracca (1896, Boll. Mus. Torino II, 253) has recorded it from Punta Sabana, Darien.

COLOMBIA: Magdalena River (A. N. S. P. 3695).

SOUTH AMERICA: No locality (Brit. Mus.).

*Characteristics:* The dorsal scales are smooth with one apical pit. They number 17 in all specimens seen or recorded except: the G. Granada specimen reported by Andersson which had 15; the specimen from Barranca, C.R., which had 15 in some areas and 17 in others; in specimens I have counted myself the ventral scales range from 180 to 209. Peracca reports 176 from Darien, Bocourt 177 from Mexico, and Cope 216 from Nicaragua. The lower counts are males and the higher females, but the sexes overlap between 184 and 190. The caudal scales range in specimens I have counted from 88 in a female to 109 in a male. Sexual overlapping occurs between 100 and 105. A count of 85 has been recorded by Boulenger for a female from Lake Nicaragua.

Preoculars are absent in most specimens, but A.N.S.P. 3695 has one on each side, excluding the loreal from the orbit; A.N.S.P. 20825 from Cristobal, C.Z., has a preocular on the left side, excluding the loreal from the orbit; the type of *sumichrasti* is figured as having a preocular on each side, above the loreal, which it does not exclude from the orbit.

Postoculars 2. Temporals 1-2. Upper labials 7, third and fourth in orbit. Lower labials 7, four (rarely three) in contact with the single pair of genials.

Black or blackish brown above, lighter on the sides, belly light. The first, and usually the second, scale rows are the same color as the belly.

Head usually dark, a light collar from middle of the parietals to second or third dorsal scale, dorsum of body dark. A.N.S.P. 20825 (Cristobal, C.Z.) has the entire head light except for the region around the eyes and nostrils. U.S.N.M. 12694d (Escuintla, Guat.) has the collar broken into three light spots. Field Mus. 22913 (Guatemala) has the lower half of the upper labial light, the nasals light, and the collar reduced to a light spot on each side just back of the seventh labial. This variation is reported by Cope for a cotype of *murinus* from Chinandega, Nicaragua. One from the Panamá Sabanas has no light markings, and neither have A.N.S.P. 3314 (Chinandega), U.S.N.M. 12694e (Escuintla), nor any of the four reported from Mexico.

The variations in scalation or coloration have no geographical arrangement which seems to me significant.

The four specimens reported from Mexico are, in my opinion, members of this species. I have not seen them, but the descriptions of Bocourt and of Fischer, which are reasonably detailed, do not mention a single character which would serve to differentiate them from the specimens I have seen.

*Enulius slateri* (Boulenger).

1894 *Leptodeonimus slateri* Boulenger, Cat. Snakes Brit. Mus. (2), 2, p. 251, pl. 12, f. 1 ("? South America", type examined in Brit. Mus.).

*Material*: I have examined 14 specimens of this species, as follows:

Nicaragua: Matagalpa (M.C.Z. 17079); no locality (U.S.N.M. 15206).

Costa Rica: Peralta (M.C.Z. 28079-80); Guasimo (Brit. Mus.); Finca Hamburg (Hamburg 5326).

Panamá: Atlantic side Canal Zone (M.C.Z. 31382); Barro Colorado I. (Carnegie 7683, Field 22852); Yavisa (four, E.R.D.).

? South America: (Brit. Mus.).

*Characteristics*: The dorsal scales are smooth with two apical pits. They number 15 in all specimens. The ventral scales range from 132 to 151. The caudals are 97-98. No preocular; postoculars 2; temporals 1-2; upper labials 7, third and fourth in eye; lower labials 7, three in contact with the single pair of genicals.

Dark brown or black above, light below. The head in eleven specimens is light from three scales back of the parietals forward, except for the immediate vicinity of the eye and the snout. The Matagalpa specimen, the Atlantic side of Canal Zone specimen, and one of the Yavisa specimens have the front of the head dark as far as the anterior edge of the parietals, and a light collar to two scales back of the parietals.

The two species may be readily distinguished as follows:

- A. Dorsals with one pit, 17; ventrals 176-216; usually a light collar.  
*flavitorques*  
 AA. Dorsals with two pits, 15; ventrals 132-151; head usually white.  
*slateri*

The genus *Enulius* is characterized as follows: Small, cylindrical snakes, with head scarcely distinct from body; tail long; eye with round pupil; scales smooth with one or two apical pits; anal double; subcaudals double; scales in 15 or 17 rows; no posterior hypapophyses; maxillary dentition of 3-4 small teeth increasing posteriorly, followed immediately by one or two relatively enormous flattened (ungrooved) fangs; hemipenis slightly bifurcate, sulcus forked at extreme distal end, no calyces, organ with minute uniform spines; usually no preocular; loreal usually entering eye; two nasals; coloration of body uniform; usually a light neck collar or whole head whitish; belly light.

No American snake is known with a similar hemipenis or similar dentition. None of the other small American ground snakes has such a long tail or has any scale pits. The systematic position of *Enulius* is thus re-

markably isolated. We must search for its relatives among much larger and less depauperate forms.

The snake described by Amaral (1935, Mem. Inst. Butantan 9, p. 219, f. 1, 3, 5, from La Pedrera, Colombia) as *Leptocalamus limitaneus* is, to judge from the description, not congeneric with *flavitorques* and *slateri*. It has no scale pits, the anal is single, the tail is short (30 subcaudals in a male), the body is striped. In these characters it disagrees with *flavitorques* and *slateri*, but does not differ from the various species of *Atractus*, where I would suggest it belongs.