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TYPE OF *Micrurus olssoni* sp. nov.
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NEW CORAL SNAKES FROM PERU

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REPORTS ON RESULTS OF
THE CAPTAIN MARSHALL FIELD EXPEDITIONS

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V. 12¹⁰

NEW CORAL SNAKES FROM PERU

BY KARL P. SCHMIDT AND F. J. W. SCHMIDT

In arranging the accumulated collections of South American Snakes in the Field Museum of Natural History, we find two apparently new species of Coral Snakes (*Micrurus*), from Peru. In addition to these, there are two very diverse specimens of *Micrurus tschudii*, from the same country, which merit description. The latter specimens are due to the field work in western Peru of W. H. Osgood and M. P. Anderson in 1912 and 1914. One of the new forms was collected by Edmund Heller in the course of the Captain Marshall Field Expedition to Peru in 1922-1923. The second novelty is based on a specimen received in 1923 as a gift from Mr. Axel A. Olsson, Chief Geologist for the London-Pacific Petrol Company at Negritos, Peru.

A specimen of *Micrurus ancoralis*, with which one of the following species is compared, was examined at the United States National Museum through the courtesy of Dr. Leonhard Stejneger, and we are indebted to the National Museum and to Dr. Thomas Barbour of the Museum of Comparative Zoology for the loan of specimens of *Micrurus tschudii*.

Micrurus helleri sp. nov.

Type from Pozuzo, Huanuco, Peru. No. 5577 Field Museum of Natural History. Adult male. Collected in 1922 by Edmund Heller.

Range.—Known only from the type locality.

Diagnosis.—Allied to *Micrurus ancoralis* (Jan), from which it is distinguished by the absence of the anchor-shaped nuchal mark; fewer triads of rings; and by having the scales of the light interspaces yellow or red edged with black, instead of black edged with yellow or red.

Description of type.—Habitus slender; tail .08 the total length; greatest diameter of body 8 mm.; eye half as long as its distance from the mouth.

Rostral twice as broad as deep; posterior nasal in contact with the preocular; frontal twice as broad as the supraocular, once and a half as long as broad, as long as its distance from the end of the snout, shorter than the parietals; latter as long as their distance from the rostral; internasals two-thirds as long as the prefrontals; one pre- and two postoculars; temporals 1-1, about equal in size; seven upper labials, the third larger than the fourth, third and fourth entering the eye;

anterior chin-shields in contact with the symphyisial; seven lower labials, three in contact with the anterior chin-shields, which are shorter than the posterior.

Dorsal scales 15-15-15. Ventral plates 261. Anal divided. Subcaudals 35. Total length 648 mm., tail 52 mm.

Coloration (in alcohol): Body with black annuli arranged in triads with white interspaces, the triads separated by wide, red interspaces. The median black annulus is six scale-lengths wide on the back, and covers five ventral plates; the white interspaces are two scale-lengths wide on the back and cover three ventral plates; the dorsal scales of the white interspaces are white edged with black; the outer black annuli are four scale-lengths wide on the back and cover two ventral plates; the red interspaces separating the triads are five scale-lengths wide on the back and cover eight ventral plates. There are eleven triads on the body and one on the tail.

The posterior part of the head, the neck and the throat are red. The postoculars, the supraoculars, the frontal and the anterior half of the parietals are black; the prefrontals, the posterior nasals, the preoculars and the third, fourth and fifth upper labials are yellow. The internasals, the anterior nasals, the rostral, the symphyisial and the first, second, and third lower labials are black.

Remarks.—A specimen of *Micrurus ancoralis*, U.S.N.M. No. 12267, “? Guayaquil,” agrees with the type of that species in having an anchor-shaped nuchal mark (a modified triad). It has fifteen triads of black rings on the body and one on the tail. Its ventrals are 250 and subcaudals 32.

Except for the separation of the first labials by the mental, the specimen here described might have been identified as *Micrurus lemniscatus*. It differs from *lemniscatus* in having the internasals much shorter than the prefrontals and in details of color pattern, besides the mental character.

Micrurus olssoni sp. nov.

Type from Negritos, Piura, Peru. No. 5724 Field Museum of Natural History. Adult male. Collected July, 1923 by Axel A. Olsson.

Range.—Known only from the type locality.

Diagnosis.—A coral snake with subequal broad black rings forming ten triads on the body; ventrals 196; caudals 28; snout projecting, mottled with black and yellow.

Description of type.—Habitus slender; tail .08 the total length; greatest diameter of body 9 mm.; eye as long as its distance from the mouth; snout pointed and projecting.

Rostral broader than deep; posterior nasal in contact with the preocular; frontal once and a half as broad as the supraoculars, once and a half as long as broad, as long as its distance from the rostral, shorter than the parietals; latter longer than their distance from the internasals; one pre- and two postoculars; temporals 1-1, the anterior a little shorter than the posterior; seven upper labials, the third a little larger than the fourth, third and fourth entering the eye; seven lower labials, first in contact with its fellow, four in contact with the anterior chin-shields, which are as long as the posterior.

Dorsal scales, 15-15-15. Ventral plates 196. Anal divided. Subcaudals 28. Total length 521 mm., tail 42 mm.

Coloration (in alcohol): Body with black annuli arranged in triads consisting of three subequal black annuli and two yellow annuli, separated by orange interspaces. The median black annulus of a typical triad is five scale-lengths wide on the back and covers four ventral plates. The outer black annuli are four scale-lengths wide on the back and cover three ventral plates. The yellow annuli within the triads are two scale-lengths wide on the back and cover three ventral plates. The orange interspaces between the triads are four scale-lengths wide on the back and cover five ventral plates. The dorsal scales of the orange interspaces are occasionally tipped with black. There are ten triads on the body and one on the tail. The first black annulus extends as far forward as the middle of the parietals and is not complete on the throat, being separated by a row of yellow scales. A black spot covers the upper part of the third, fourth and fifth upper labials, the postoculars, the preoculars, and anterior border of the frontal, the anterior borders of the supraoculars and all except the anterior border of the prefrontals. The nasals and internasals are black. The remainder of the head is yellow.

Notes on paratype.—U.S.N.M. No. 38558, collected in Peru by R. E. Coker, may be named as a paratype of this species. This specimen had been identified as *Micrurus tschudii*, and was borrowed for comparison with the specimens of *tschudii* described below. It has 208 ventral plates, 28 subcaudals, and normal head shields. The total length is 296 mm., tail 24 mm., .08 of the total. The color is faded so that the distinction between the two lighter colors is lost. The triads, scarcely distinguishable as such, number eleven on the body and one on the tail. The characteristic coloration of the snout agrees exactly with that of the type.

Remarks.—*Micrurus olssoni* appears to be a well marked species, probably confined to the arid section of Piura and adjacent Ecuador. We are unable to identify it with any described species. Both Boulenger's and Werner's keys would ally it to *Micrurus tschudii*, a species with which it apparently has no very near affinity.

Micrurus tschudii (Jan).

Field Museum of Natural History, No. 5714, collected at Pacasmayo, Peru, April 3, 1912 by W. H. Osgood and M. P. Anderson agrees excellently with Jan's plate and Boulenger's description. It has the yellow band across the head, cutting directly across the frontal as in the specimen described by Boettger. No. 5666, Chimbote, Peru, collected by M. P. Anderson in 1914, differs radically from the above specimen and from descriptions of this species. Its coloration may be described in detail.

Coloration (in alcohol): Body black with white annuli arranged in triads; the scales of the white annuli tipped with black. The black interspaces between the triads are four scale lengths wide on the back and cover four ventral plates. The outer white annuli are two scale lengths wide on the back and cover two and a half ventral plates. The median white annulus is two scale lengths on the back and does not extend across the ventral plates, so that the black interspaces within the triads, which are two scale-lengths wide on the back, are united on the venter and cover five ventral plates. A few of the median white annuli are reduced to a square spot covering four scales. There are sixteen triads on the body. Two triads on the tail with the median white annuli complete.

Upper surface of head black; throat white; a white band across the nape behind the parietals; a white band across the head covers the fifth and sixth upper labials, the postoculars, the anterior temporal, the anterior third of the parietals, the posterior half of the supraoculars and the posterior half of the frontal; the internasals are edged with white; the rostral black with a very irregular white triangle with a black center.

No. 5714, ♀, has 210 ventrals and 26 caudals. No. 5666, ♂, has 202 ventrals and 26 caudals. Two female specimens loaned for study by Dr. Thomas Barbour of the Museum of Comparative Zoology, collected in Peru by the Orton expedition, have ventrals 203-225 and caudals 26-29. These bridge the differences in coloration between the Field Museum specimens in an extraordinary way. The triads of black rings on the greater part of their lengths are normal, consisting of a

central broad ring with the lateral rings about half as broad, and the reddish interspaces (the color no longer distinguishable) about equal to the yellow rings which separate the narrow black rings from the broad. When the color is faded, this produces the appearance of triads of narrow white rings separated by broader black spaces. On several parts of the body, the outer black rings are united below, so that the "red" ring is restricted to a dorsal saddle which may vary in extent from a mere spot on the back to a $\frac{3}{4}$ ring, reaching the ends of the ventrals. In one specimen, the triads are effaced by the fusion of the pairs of narrow black rings across the red, for a considerable distance. Evidently, Field Museum No. 5666 represents an unusually regular development of this variation, and no red being visible in this specimen, we would not have identified it as *tshudii* had we not had the conclusive evidence of the two Orton specimens at hand. The process of pattern evolution, of which these specimens represent three well distinguished stages, ends in the conversion of a three-colored pattern into a two-colored one, and thus throws light on the origin of such species as *annellatus* and *narduccii* which apparently exhibit still further stages in the same general process.

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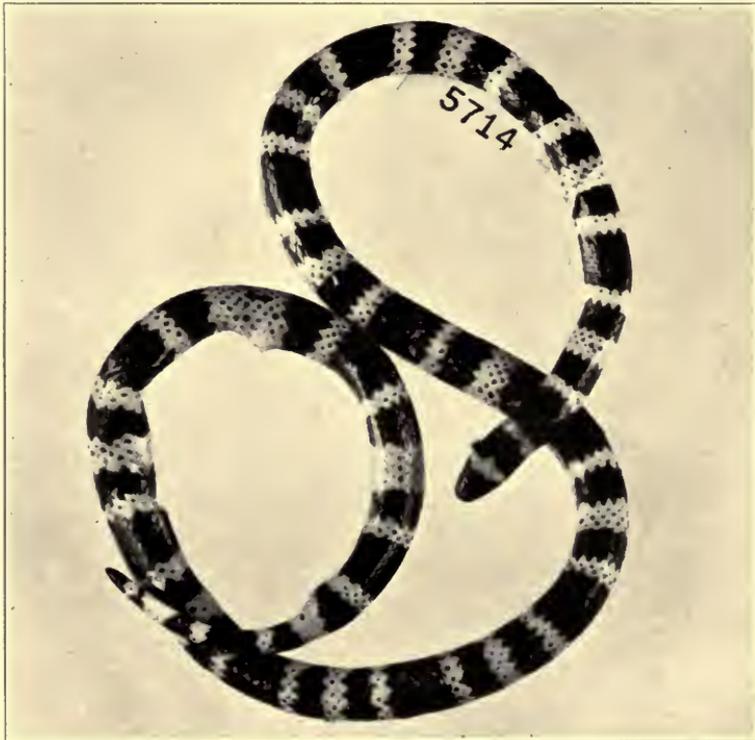
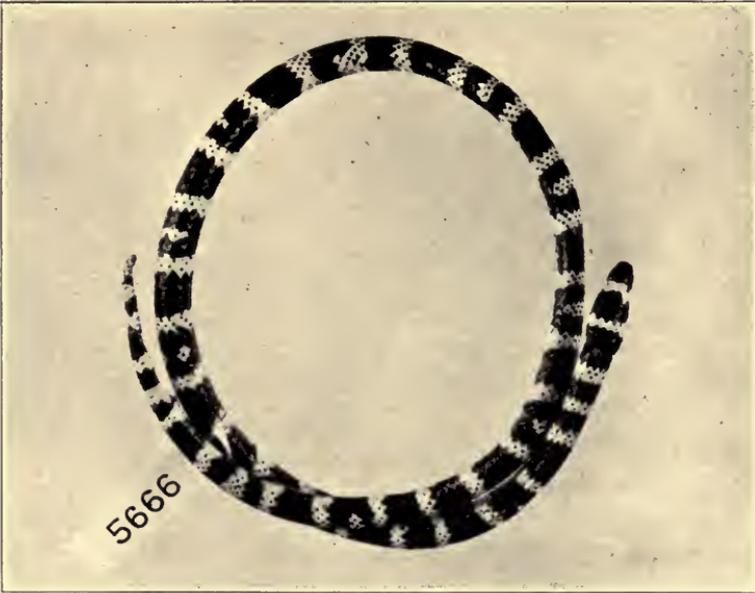
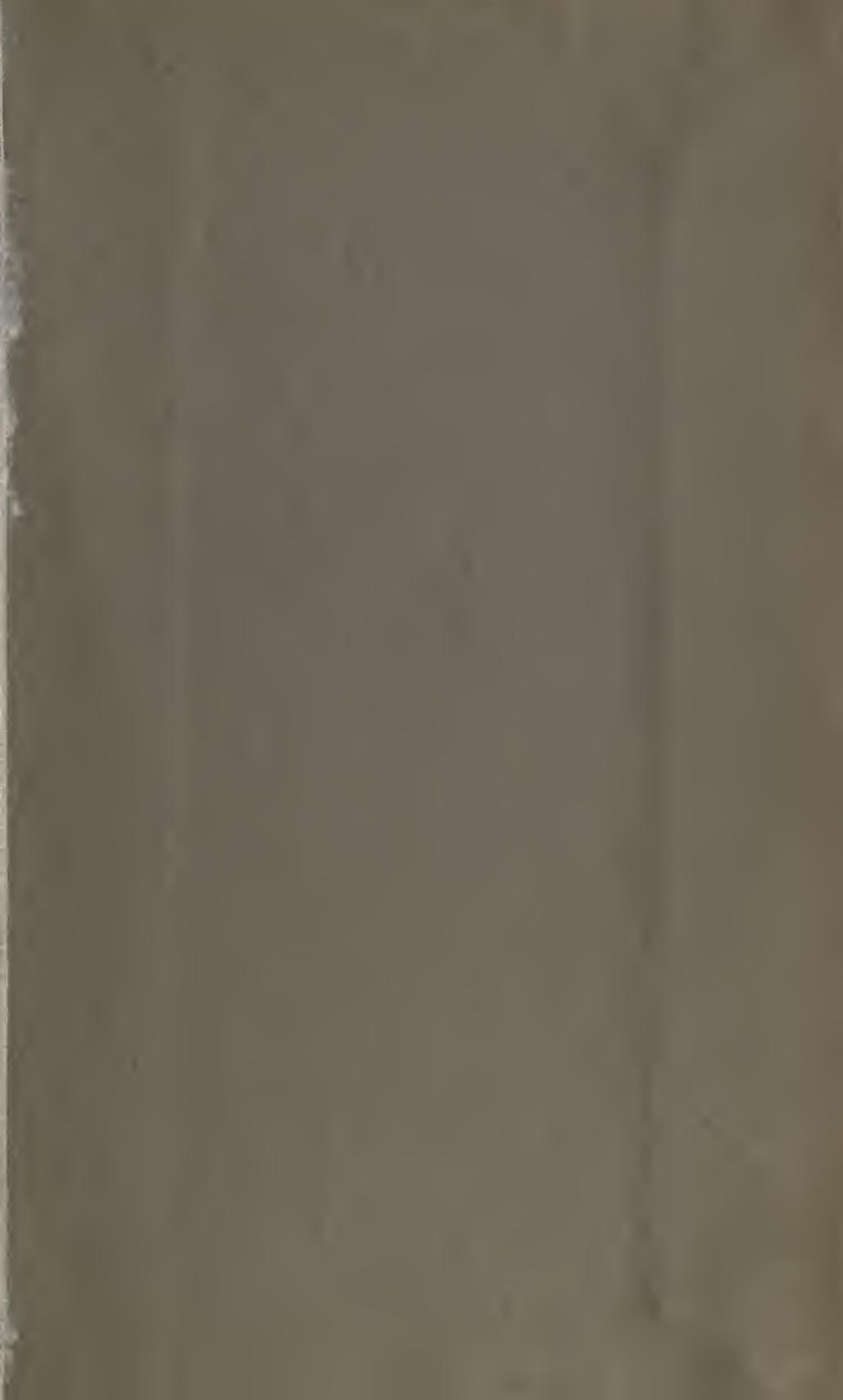
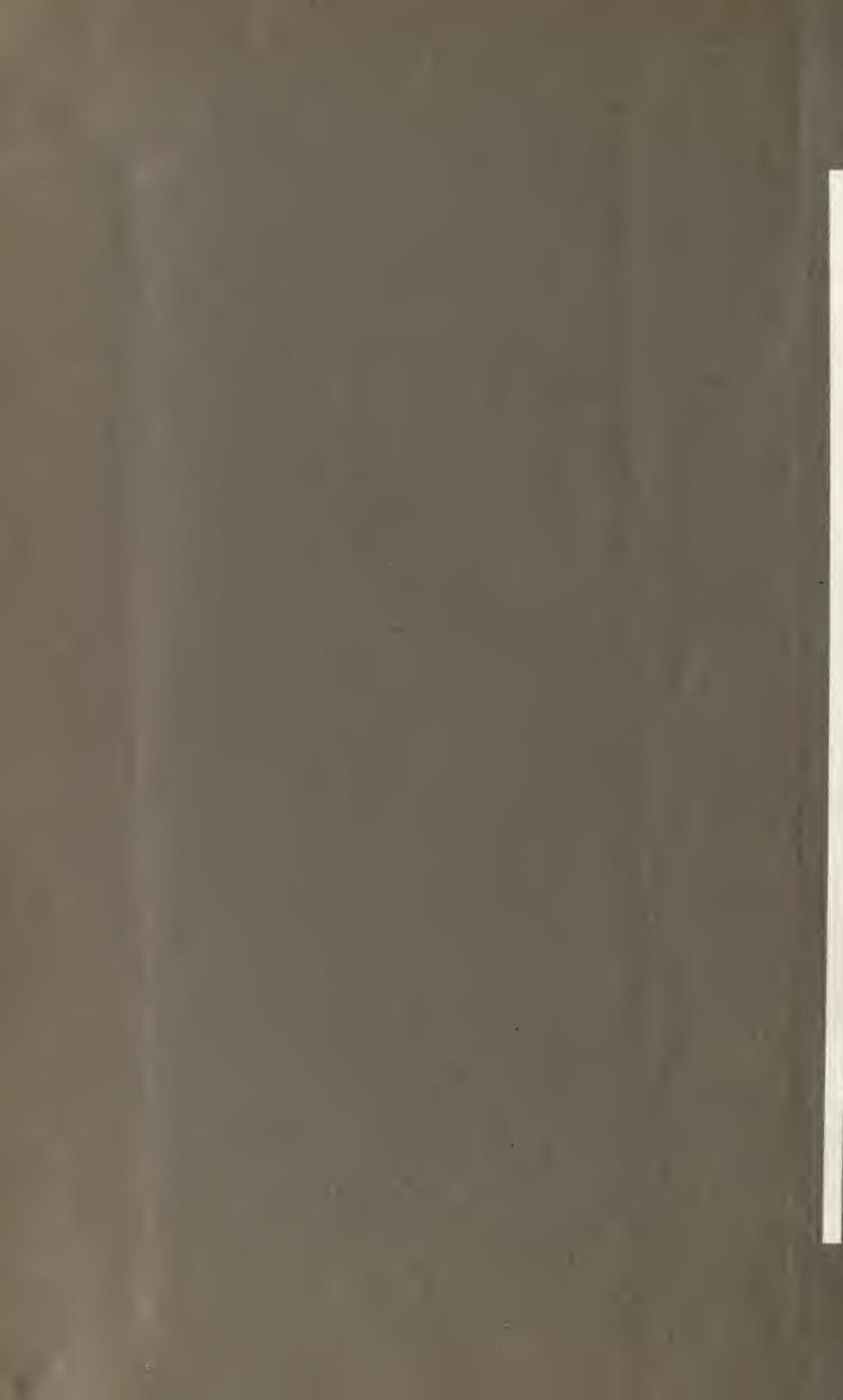


FIG. 1. *Micrurus tschudii* (Jan). F. M. N. H. NO. 5666, CHIMBOTE, PERU. NARROW BLACK RINGS OF ADJACENT TRIADS FUSED ANTERIORLY, PARTLY UNITED BEHIND.

FIG. 2. *Micrurus tschudii* (Jan). F. M. N. H. NO. 5714, PACASMAYO, PERU. NORMAL COLORATION.





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