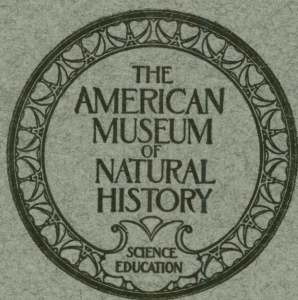


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FIVE NEW SPECIES OF SALIENTIA FROM SOUTH AMERICA

By G. K. NOBLE



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Among the collections of amphibians from South America which have been acquired in recent years by The American Museum of Natural History, there are included several interesting new forms. Perhaps the most remarkable of these is one which must be referred to the genus *Sminthillus*, although zoogeographic considerations make it seem highly probable that the form described below has been derived from a different stock from that which gave rise to *S. limbatus*, the type, and, until this time, sole member of the genus. *S. limbatus* is confined to Cuba while the species described here is restricted to a limited region in southern Peru. *Sminthillus* has been only recently defined (Barbour and Noble, 1920, Bull. Mus. Comp. Zool., LXIII, p. 402). I have more recently added certain details in regard to the structure of the shoulder girdle (Noble, in press). These structural details are very important from a phylogenetic viewpoint. But, as I have discussed these features at considerable length in the latter paper, I shall not enter into them here.

The genus *Atelopus* is much in need of revision. A number of diverse stocks have been lumped together under the name *A. ignescens*. Until the limits of specific variability have been determined for several more forms, it is impossible to discuss the status of these stocks or the relations of a number of the described species. The characters which I have utilized below appear at this time to be diagnostic.

***Sminthillus peruvianus*, new species**

DIAGNOSIS.—Readily distinguished from the *S. limbatus* by its blunter snout, less vertical loreal region, by the presence of a tarsal tubercle, longer tibia and different coloration; from the disk-less species of *Syrhophus*, it may be distinguished externally by the more vertical loreal region and stouter form.

RANGE.—Known only from the present series secured near Juliaca, Peru, by H. H. Keays, (no date).

TYPE.—A. M. N. H. No. 14526; from the same locality.

DESCRIPTION OF TYPE.—Snout rounded, equal to the greatest diameter of the orbit; loreal region abrupt, nearly vertical; nostril midway between the tip of the snout and the anterior corner of the eye; interorbital space a little broader than the upper eyelid; horizontal diameter of the tympanum about one-half, vertical diameter nearly

two-thirds the greatest width of the eye; tympanum about one-half its smallest diameter from the latter. Digits pointed, no terminal disks; a well-developed tarsal and two metatarsal tubercles. Tibio-tarsal articulation reaching just beyond the posterior angle of the eye; when the limbs are held vertical to the axis of the body, the tibio-tarsal articulation overlapping its mate of the opposite side. Skin feebly granular above, smooth below.

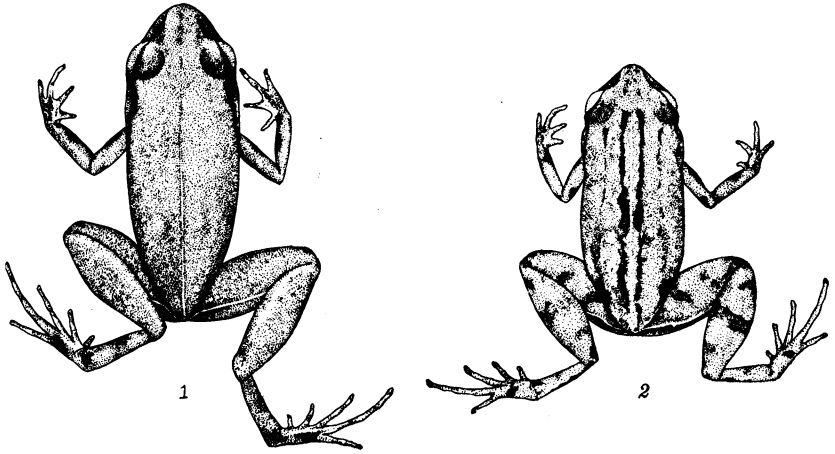


Fig. 1. *Sminthillus peruvianus*, new species. Type.

Fig. 2. *Sminthillus peruvianus*, new species. Paratype, showing color variation.

Color uniform grayish brown, slightly purplish above; a broad band of dark brown extending on each side from the nostril to the lumbar region; a narrow white line on the posterior face of each thigh joining with a median line which extends anteriorly along the back for more than half its length; posterior surfaces of the lower leg indistinctly barred with dark brown. Lower surfaces of body whitish, the chin and thigh indistinctly suffused with brown.

Dimensions

Snout to vent.....	16 mm.
Greatest width of head.....	5 mm.
Axilla to tip of longest digit.....	8 mm.
Groin to tip of longest toe.....	21.5 mm.

NOTES ON PARATYPES.—Four specimens in addition to the type are included in the series. These differ greatly in color and slightly in proportions. The two extreme types of coloration are shown in Figures 1 and 2. In the paratype figured, the ground tone is a pale yellowish brown. A sharply defined pattern is formed by blotches of dark brown. The two inguinal spots are nearly black. The ventral surface is uniformly suffused with a reddish brown which is darker on the throat than on the thighs. The other three paratypes exhibit stages of intergradation between the coloration of the paratype figured and that of the type specimen. Their browns are

redder than in the type and one has a broad hour-glass shaped pattern of dark reddish brown dorsally. The paratypes exhibit some variation in leg length. In all, the hind limb is longer than in the type.

***Atelopus bicolor*, new species**

DIAGNOSIS.—A large species, closely allied to *A. Boulengeri* Peracca, but differing in the webless digits of the manus and the shorter webs of the toes, also in the different proportions, shorter leg and shorter snout. Skin smooth; first toe distinct; tibio-tarsal articulation not reaching eye; generally dark brown above, yellow below, irregularly marked on the sides.

RANGE.—Known only from the type locality.

TYPE.—A. M. N. H. No. 13132; from Cordillera Kutuku (1800–2000 meters), east of Macas, Ecuador; collected by E. Feyer; 1921.

DESCRIPTION OF TYPE (Adult male).—Head a trifle wider than long, its length (tip of snout to angle of jaw) contained three and a half times in head and body length; distance from the eye to the end of the snout one-third greater than the longest diameter of the eye; nostril much nearer the end of the snout than the eye; snout projecting only a little beyond mouth; interorbital space 1.3 or 1.2 times the width of the upper eyelid. Anterior limb stout; distance from axilla to tip of longest digit equals the body length; no webbing between the digits of the manus although the skin between the first and second digits is thick; first digit much shorter than the fourth. Tibio-tarsal articulation nearly reaching the eye; toes webbed to the tips (except the fourth), but the web deeply indented, making the toes appear half webbed; a single metatarsal tubercle; subarticular tubercles feeble. Skin smooth above and below; a number of feeble transverse furrows on the ventral surface.

Color above dark reddish brown; below and on the sides yellow; an irregular dark streak on the sides of the abdomen; yellow of the sides encroaching upon the periphery of the dorsal ground tone, forming a symmetrical yellow margin to the dorsal coloration; limbs broadly crossbarred with yellow; ventral surface of the head and body immaculate; a few dark crossbars on the legs.

Dimensions

Snout to vent.....	51 mm.
Greatest width of head.....	15.5 mm.
Axilla to tip of longest digit.....	37 mm.
Groin to tip of longest toe.....	68 mm.

NOTES ON PARATYPES.—Three specimens in addition to the male were collected. Two are males and the third is an immature specimen. They vary considerably in coloration but agree in having the ventral surface yellow and immaculate, the dorsal surface dark brown or reddish with no markings except an irregular border of yellow.

***Atelopus rugulosus*, new species**

DIAGNOSIS.—Very similar to *A. tricolor* Boulenger, from which it differs in the warty upper surfaces, somewhat different proportions and absence of "flash colors." Inner toe rudimentary; tibio-tarsal articulation extending beyond the eye; interorbital space twice as broad as the upper eyelid.

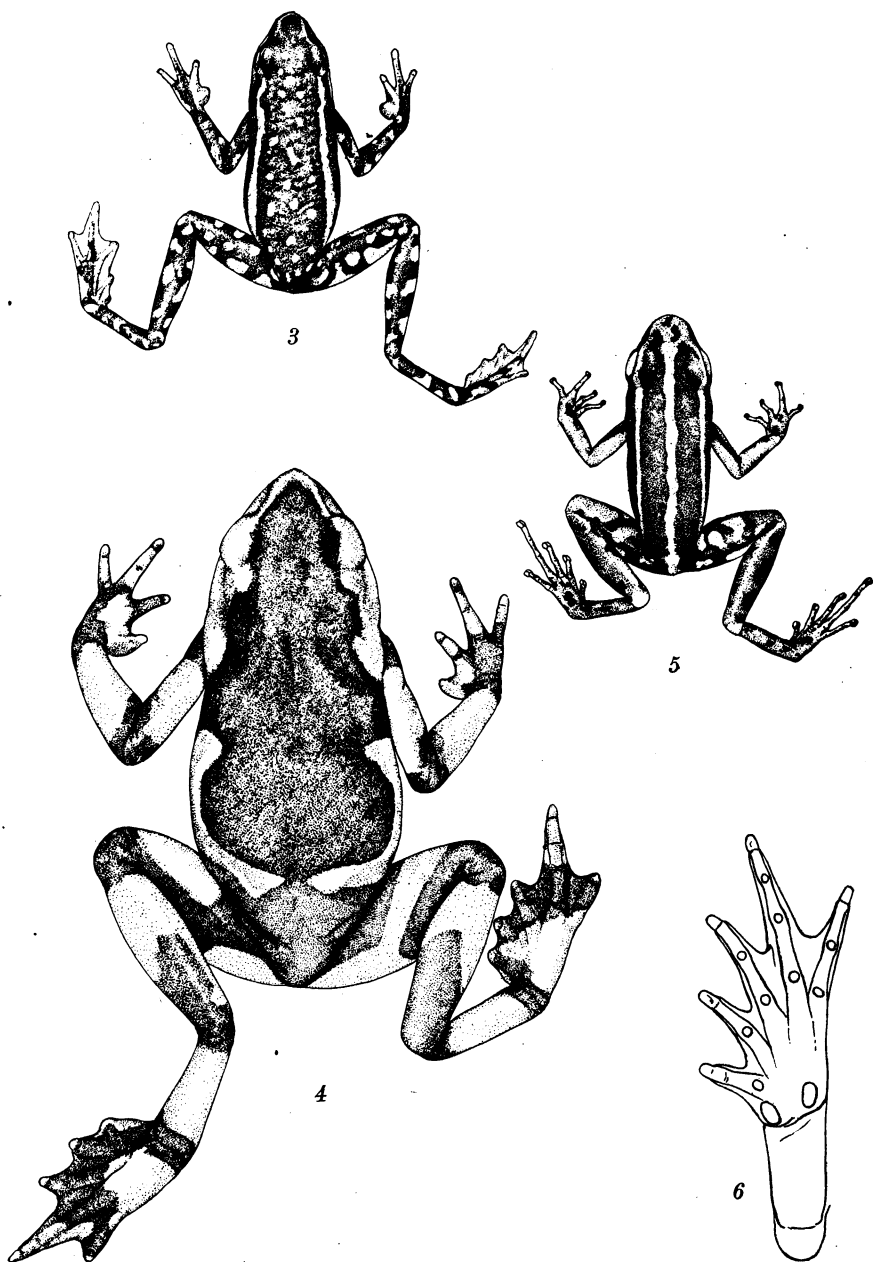


Fig. 3. *Atelopus rugulosus*, new species. Type.

Fig. 4. *Atelopus bicolor*, new species. Type.

Fig. 5. *Phyllobates anthonyi*, new species. Type.

Fig. 6. *Telmatobius cinereus*, new species. Type. Ventral surface of left foot.

RANGE.—Known only from the type locality.

TYPE.—A. M. N. H. No. 6097; vicinity of Juliaca, Peru; H. H. Keays.

DESCRIPTION OF TYPE (Adult male).—Distance from the angle of the jaw to the tip of snout one-fifth wider than the greatest width of the head, exactly three times as great as the head and body length; snout prominent, overhanging the mouth for a distance equal to the greatest diameter of the eye; nostril nearer the tip of the snout than the eye; interorbital space twice as broad as the upper eyelid. Fingers webbed slightly at the base, first very short; toes entirely webbed, but the web between the third and fourth, and the fourth and fifth digits notched; first toe rudimentary, enclosed within the web; no metatarsal or subarticular tubercles. Tibio-tarsal articulation reaches nearer the tip of the snout than the eye. Skin covered with flat warts above, smooth below, except for the throat which is somewhat granular.

Dark brown above spotted with yellow, a broad streak of yellow on each side of the back from eye to groin; upper lip yellow, and a series of yellow spots on the sides of the body; ventral surfaces yellow with a few dark spots on the belly; a tinge of pink on the thighs near their proximal end, but no axillary or inguinal spots of the same color.

Dimensions

Snout to vent.....	22 mm.
Greatest width of head.....	6.8 mm.
Axilla to tip of longest digit.....	14.5 mm.
Groin to tip of longest toe.....	30 mm.

NOTES ON PARATYPE.—Only two specimens, both males, of this species were secured. The paratype differs from the type in being more spinose, the tubercles being pointed, not flat as in the type. The coloration is essentially the same in both specimens, but the paratype is nearly immaculate below.

Phyllobates anthonyi,¹ new species

DIAGNOSIS.—Similar to *P. tricolor* (Boulenger), but readily distinguishable by its longer leg, longer first finger, longer snout, and different coloration. The color pattern is somewhat similar to that of *P. tricolor* but the flash colors are lacking and the stripes are bluish not yellowish.

RANGE.—Known only from the type locality.

TYPE.—A. M. N. H. No. 13739; from a small stream at Salvias, Prov. del Oro, Ecuador; collected August 10, 1920, by H. E. Anthony.

DESCRIPTION OF TYPE.—Snout depressed, a little longer than the greatest diameter of the eye; nostril much nearer the end of the snout than the eye; loreal region vertical; interorbital space 1.4 times as broad as the upper eyelid; tympanum a little more than half as long as the greatest diameter of the eye, edged above by a prominent supratympanic fold. Disks of the digits small, much smaller than the tympanum; first finger slightly longer than the second; two metatarsal tubercles, the inner prominent; a well-developed tarsal tubercle; tibio-tarsal articulation reaching the anterior corner of the eye. Skin smooth above and on the sides.

¹Named for Mr. H. E. Anthony, Associate Curator of Mammals of the Western Hemisphere in The American Museum of Natural History, and collector of the type series.

Ground tone above dark chestnut brown; a broad medial stripe and two dorso-lateral ones of pale bluish gray, the medial stripe widening anteriorly to form the major coloration of the snout, and restricting the ground tone in this region to a number of spots. Ground tone of the sides a little darker than that of the back; in addition to the dorsolateral stripe, a ventrolateral one of the same color; the latter forming anteriorly a prominent stripe on the upper lip, while the former passes along the outer edge of the eyelid and merges into the light tone of the snout. Thighs cross-barred with pale gray; concealed portion of the thigh blotched with white which may have been yellowish in life. Ventral surface white or slightly tinged with yellow and heavily marbled with dark brown, the marbling most pronounced about the periphery of the ventral surface; no dark bands on the chest or throat.

Dimensions

Snout to vent.....	21 mm.
Greatest width of the head.....	6.5 mm.
Axilla to tip of longest digit.....	14 mm.
Groin to tip of longest toe.....	30 mm.

NOTES ON PARATYPE.—A single paratype was secured. It differs from the type in having the lateral stripes more whitish and in having the ventral surface marbled with brown on the periphery only.

Telmatobius cinereus, new species

DIAGNOSIS.—Very similar to *T. niger* Barbour and Noble, from which it differs chiefly in the narrower webbing of the toes (compare Figure 6 with Fig. 1, Barbour and Noble, 1920, Bull. Mus. Comp. Zool., LXIII, p. 414), the narrower interorbital space, the absence of a ventral disk, and the grayish, not chestnut, coloration.

RANGE.—Known only from Bestion, Ecuador, the type locality.

TYPE.—A. M. N. H. No. 13968; from Bestion, Ecuador, caught in a mouse-trap set among low bushes and grass; January 7, 1921, by H. E. Anthony.

DESCRIPTION OF TYPE.—Size moderate; head much broader than long, narrower than the body, its length contained in the total length of the body a trifle more than three times; snout very short and high without canthus rostralis; nostril nearer the orbit than the labial border. Vomerine teeth prominent in two well-defined groups between the choanæ; tongue about as long as broad. Interorbital space exactly as long as the diameter of the eye; length of the snout 1.4 times that of the eye; tympanum hidden; a prominent supratympanic fold. Digits free, stout, not dilated at the tips, the first finger longer than the second, a trifle longer than the fourth; the elbow extended forward reaches nearly to the eye. Toes a trifle less than half webbed, but narrow seams extending to the bases of the terminal phalanges; a well-defined tarsal fold; subarticular tubercles well developed; two metatarsal tubercles of about the same size; heels just in contact when the hind limbs are folded at right angles to the axis of the body; tibio-tarsal articulation reaching to the middle of the orbit or slightly beyond. Skin very glandular above, but not warty; no baggy lateral fold; a few irregular folds on each side of the body; no ventral disk, the skin of the abdomen not marked off from the lateral regions; a slight indication of a pectoral fold formed by a small fold on each side immediately posterior to the humerus; posterior surfaces of the thighs not folded or baggy.

Color above lead gray; ventral surface pinkish, heavily blotched and mottled with dark brown, the spots most abundant on the throat, least on the thighs.

Dimensions

Tip of snout to vent.....	62 mm.
Tip of snout to angle of jaw.....	20 mm.
Greatest width of head.....	24.5 mm.
Axilla to tip of longest digit.....	36 mm.
Groin to tip of longest toe.....	88 mm.

The species is known only from the type specimen. As might be expected from its distribution, the species is intermediate between *T. niger* Barbour and Noble and *T. ignavus* Barbour and Noble, but more closely related to the former.

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FRANK E. LUTZ, Editor

Issued, as occasion requires, for the publication of preliminary announcements, descriptions of new forms, and similar matters.

The articles are numbered serially but paged independently. An index will be provided for each 300 (approximately) pages.