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Neusticurus ocellatus Sinitsin, 1930: A Valid Species of Teiid Lizard from Bolivia

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ABSTRACT

Comparison of the holotype of *Neusticurus ocellatus* Sinitsin, 1930, with 22 paratypes shows that two species are involved. *Neusticurus ocellatus*, type locality Rurrenabaque, Beni, Bolivia, is revalidated; the holotype is the only specimen assigned to it at present. The paratypes from Chanchamayo and Perené, Department of Junin, Peru, are assigned to *Neusticurus ecpleopus* Cope, "1876" [1875] (sensu Uzzell, 1966), which is considered to be a composite taxon not yet susceptible of dissection.

INTRODUCTION

Sinitsin (1930) described *Neusticurus ocellatus* based on 55 specimens in the collection of the American Museum of Natural History—the holotype, AMNH 22512 (fig. 1), from Rurrenabaque, Beni, Bolivia (14°28'S, 67°34'W) and 54 paratypes from Chanchamayo (11°04'S, 75°19'W) and Perené (10°52'S, 75°16'W), both in Junin, Peru.

This is at first blush a rather improbable distribution: the localities are about 1000 km apart. Rurrenabaque is in the rainforests of the Beni lowlands, the others in montane forest at an elevation of about 1000 m on the lower reaches of the Peruvian Andes. Sinitsin (1930) neither discussed the distribution nor mentioned variation in the large type series; his is a very laconic paper. In a footnote, however, Sinitsin stated that the new form would be discussed by Charles E. Burt in his forthcoming report on South American lizards in the collection of the American Museum of Natural History.

In that report (Burt and Burt, 1931), *Neusticurus ocellatus* is reduced to a subspecies of

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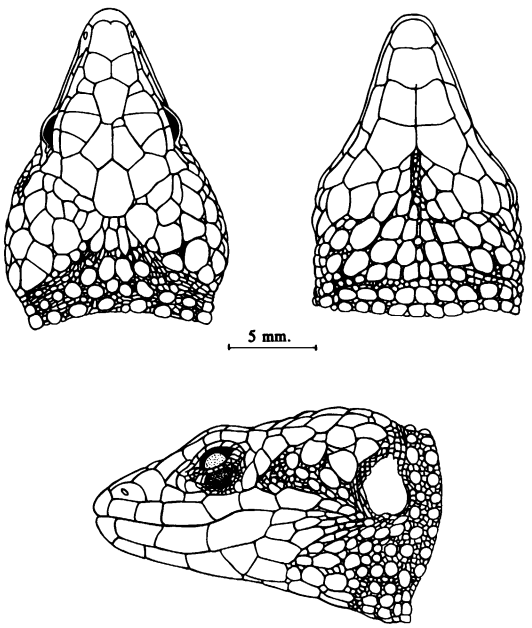

Fig. 1. *Neusticurus ocellatus* Sinitsin. Head of male holotype (AMNH 22512) in dorsal, ventral, and lateral aspect. *Patricia J. Wynne.*

Neusticurus ecpleopus Cope, "1876" [1875]. In the respective key (pp. 350–351) it is stated, as I see it with entire relevance:

> Paired median series of longitudinal dorsal keels more or less irregular, seldom continuous; the large scutes bearing these keels usually entirely surrounded by granules, seldom juxtaposed or imbricate (Bolivia, and southern and central Peru).

Burt and Burt's figure 11 is a good rendition of the dorsal scutellation and bears the remark, "Note the isolation of the large dorsal scales." The holotype is described in more detail by the Burts than by Sinitsin. There is a specific section on variation, based solely on the paratypes, but no relevant points are made.

The next time that *Neusticurus ecpleopus ocellatus* was considered (Uzzell, 1966), it was taken one further step down, into the synonymy of *N. ecpleopus*, of which no subspecies were recognized. Uzzell (loc. cit.: 297) said that the "holotype is quite different from the paratypes" and further stated that he would take no steps to recognize either *ocel-*

TABLE 1
Measurements (in mm) and Scale Counts of Holotype and Paratypes of *Neusticurus ocellatus*

AMNH	Sex	Femoral pores	Snout-vent length	Tail length	Head length[a]	Head width	Hind limb length[b]	Ventrals	IV finger lamellae	IV toe lamellae
Holotype										
22512	♂	41	75	--	18.6	12.3	37	21	15	24
Paratypes										
23156	♂	40	44	—	10.5	7.5	22	22	14	20
23159	♂	41	52	—	13.1	9.4	27	22	14	19
23169	♂	20+	26	36	7.2	5.0	14	25	14	19
23179	♂	42	35	55	8.4	5.5	15	25	15	22
23180	♂	40	37	56	8.9	6.1	18	26	14	18
23199	♂	44	62	—	14.9	10.4	31	22	15	21
23201	♂	43	60	—	14.8	10.1	32	23	14	21
23208	♂	41	40	63	9.5	5.8	19	23	14	21
23214	♂	16	31	46	7.6	5.2	15	26	13	20
23225	♂	32	25	36	6.5	4.2	14	22	14	22
23237	♂	39	49	—	11.8	7.4	27	22	13	21
23155	♀	4	55	—	13.0	8.7	29	22	15	21
23158	♀	2	53	—	12.4	8.2	28	24	15	19
23168	♀	3	26	35	7.6	4.2	13	24	14	20
23176	♀	4	28	41	6.9	4.5	14	23	16	21
23178	♀	4	40	—	9.6	6.2	19	23	16	18
23183	♀	6	58	—	12.9	8.2	27	24	15	19
23184	♀	3	58	—	12.6	8.2	33	23	15	22
23187	♀	4	52	—	11.6	7.3	25	22	14	20
23189	♀	4	57	—	12.7	8.5	30	22	15	20
23235	♀	6	46	—	10.6	7.5	23	24	16	21
23238	♀	3	65	—	14.5	9.2	28	23	14	19

[a] Tip of snout to tympanum.
[b] Groin insertion to tip of longest finger.

latus or other forms as subspecies of *ecpleopus* until the latter name (the type of which is lost and for which no definite type locality can be assigned) could be properly applied, and until additional materials could afford a better perspective of the differentiation of the whole group, which is extensively distributed in South America.

In his discussions of geographic differentiation in *Neusticurus ecpleopus*, Uzzell treated the Perené materials as one geographical unit, but made no further mention of the holotype.

In the process of describing a new species of *Neusticurus* from Rondônia, Brazil, belonging to the *ecpleopus* species group, I was impressed with the figure of the dorsal scutellation of *ocellatus* in Burt and Burt (1931: fig. 11), unlike anything I had seen in my coverage of the group. Thanks to the customary courtesy of C. W. Myers, I was able to examine the relevant materials (holotype and 33 paratypes, the other 21 having been exchanged) in the American Museum of Natural History. I am satisfied that the holotype of *Neusticurus ocellatus* represents a valid species, clearly distinct from any regional representatives of the *ecpleopus* complex, and especially distinct from its own paratypes.

TABLE 2
Summary of Scale Counts for Paratypes and Holotype of *Neusticurus ocellatus*

	Paratypes			Holotype
	♂	♀	♂♀	♂
Ventrals				
21	-	-	-	1
22	5	3	8	-
23	2	4	6	-
24	-	4	4	-
25	2	-	2	-
26	2	-	2	-
Total	11	11	22	1
Fourth finger lamellae				
13	2	-	2	-
14	7	3	10	-
15	2	5	7	1
16	-	3	3	-
Total	11	11	22	1
Fourth toe lamellae				
18	1	1	2	-
19	2	3	5	-
20	2	3	5	-
21	4	3	7	-
22	2	1	3	-
23	-	-	-	-
24	-	-	-	1
Total	11	11	22	1

COMPARISONS

SCUTELLATION: The four pholidotic characters following are important in comparisons:

1, 2. Dorsal and caudal crests, which are present and prominent in all members of the *ecpleopus* group, while in the holotype of *ocellatus* there are no dorsal crests and caudal crests are inconspicuous.

3. Dorsal tubercles. The flat, buttonlike tubercles of the holotype, separated by granules, are in sharp contrast with the general *ecpleopus* condition of high-keeled, flanged, closely serried tubercular scales.

4. Tail annuli are complete rings of enlarged scales in the holotype; in the paratypes they are interrupted on the sides by small irregular scales (flat granules).

The following additional characters are less pronounced but nevertheless distinctive:

5. Shape of the transverse rows of scales. These in the holotype, as shown in Burt and Burt (1931: fig. 11), are arranged in regular rows, forming definite folds on the flanks; two transverse rows of ventral scales correspond to one flank fold of small tubercles. In the paratypes the arrangement is irregular, no definite flank rows being discernible.

6. The temporal region of the holotype (fig. 1) is covered with large, round, flat scales, interspersed with granules. In the paratypes all scales are small, close-set, tubercular, and prominent.

7. On the ventral surface of the forearm of the holotype the scales are large, round, flat, and arranged in an oblique checkerboard; on the paratypes they are tubercular and prominent.

8. Finally, there are quite obvious differences in the scalation of the gular region. In

TABLE 3
Proportions of Paratypes and Holotype of *Neusticurus ocellatus*

Sex	Paratypes N	R(x)	R(y)	b	a	F	r^2	Holotype obs.	calc.
Tail length x body length									
♂	6	25-40	36-63	1.84±0.086	-10.9±2.81 *	459.62 ***	0.9914	incomplete	
♂♀	8	25-40	35-63	1.88±0.080	-12.3±2.52 **	550.20 ***	0.9822		
Hind limb length x body length									
♂	11	25-62	14-32	0.53±0.037	-1.0±1.60 n.s.	209.60 ***	0.9588	37	38.8
♀	10	26-58	13-33	0.54±0.048	-1.7±2.33 n.s.	129.64 ***	0.9419		
♂♀	21	25-62	13-33	0.54±0.027	-1.2±1.26 n.s.	384.80 ***	0.9529	37	39.0
Head length x trunk length									
♂	11	18.5-47.1	6.5-14.9	0.30±0.014	0.7±0.46 n.s.	461.76 ***	0.9809	18.6	17.9
♀	11	18.4-50.5	6.9-14.5	0.23±0.015	2.8±0.57 ***	243.58 ***	0.9644		
Head width x head length									
♂	11	6.5-14.9	4.2-10.4	0.72±0.037	-0.4±0.40 n.s.	373.77 ***	0.9765	12.3	12.4
♀	11	6.9-14.5	4.2- 9.2	0.69±0.047	-0.4±0.54 n.s.	216.60 ***	0.9601		
♂♀	22	6.5-14.9	4.2-10.4	0.69±0.030	-0.4±0.33 n.s.	522.71 ***	0.9631	12.3	12.4
Head width x body length									
♂	11	25-62	4.2-10.4	0.17±0.013	0.0±0.56 n.s.	161.62 ***	0.9473	12.3	12.4
♀	11	26-65	4.2- 9.2	0.13±0.015	1.0±0.46 n.s.	196.98 ***	0.9563		

Abbreviations: N, individuals in sample; R(x), range of independent variable; R(y), range of dependent variable; b, slope (coefficient of regression) and its standard deviation; a, intercept (regression constant); F, Fisher's quotient of variances (significance of the regression); r^2, coefficient of determination; n.s., not significant; *, **, ***, significant at .05, .01, and .001 levels, respectively.

the holotype the gulars are large, oval, flat, arranged in 4–5 oblique rows, and set off by a transverse row of granules; between this and the collar there are 9 transverse rows of flat gulars, the median scales 3 to 7 forming an enlarged longitudinal row. In the paratypes there is an anterior triangular area of moderately enlarged scales, followed by an area of smaller ones, behind which there are, to the collar, four poorly arranged rows of scales.

COLOR PATTERN: The dorsal aspect of the holotype—head, trunk, and tail—is rather uniformly brick reddish. The ventral parts are also reddish, but lighter, with diffuse melanophores on the throat. The sides of the head are like the top. On each side of the body there are four ocelli, one on the neck, one on the scapula, and two on the flank. These are well-defined ocelli, with a definite black ring encircling a white center.

The paratypes have a reddish head with dark markings, mostly along the sutures, and scattered light markings. On the trunk the color pattern is variable; typically there is a distinct dorsolateral light stripe, a transverse light nuchal bar, and scattered small lateral spots. The side of the head is vividly patterned: there is an anterior light spot on the upper lip; one distinct stripe from eye to chin; parallel to and behind this stripe, a similar but less vivid one. The sides of the body are very variable, showing 0–6 ocelli, which, when present, vary from rudimentary to trim and contrasting. The throat and venter vary widely from immaculate yellowish to heavily spotted with black, but are never reddish. The tail varies from indistinctly patterned to showing a light dorsolateral stripe. All in all this is a very different color pattern from that of the holotype.

SCALE COUNTS: Tables 1 and 2 summarize the comparable scale counts of the holotype and paratypes. It is clear that there is one significant difference ($P < 0.001$) in the number of fourth-toe lamellae.

BODY PROPORTIONS (table 3): Four characters were studied using regression analysis: (1) hind limb length on body length; (2) head length on trunk length (body minus head); (3) head width on head length; (4) head width on body length. No significant differences were found (fig. 2), the holotype consistently agree-

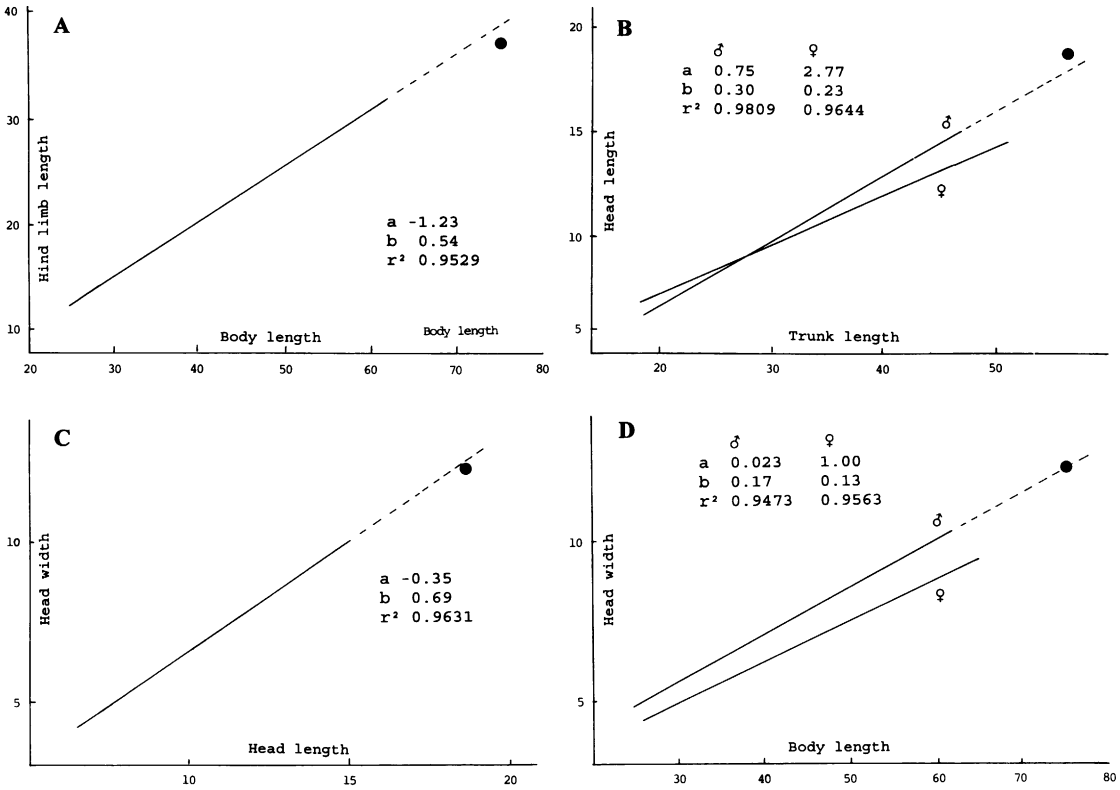

Fig. 2. Regression analyses of paratypes of *Neusticurus ocellatus*, with large male holotype (closed circle) added to extrapolated (dashed) regression lines. Male and female paratypes combined in A and C. **A,** Hind limb length on body length; **B,** head length on trunk length; **C,** head width on head length; **D,** head width on body length.

ing with the male paratypes when applicable—except that, at 75 mm snout-to-vent (SVL), the holotype is much larger than any of the paratypes, the largest of which (a female) measures 65 mm SVL; the largest male paratype is 62 mm SVL.

Regressions of tail length on body length and of head width and limb length on total length were not carried out because the holotype has a broken tail.

DISCUSSION

It is clear that the name *Neusticurus ocellatus* must be preserved, as applicable to the population represented by the holotype, from Rurrenabaque, Beni, Bolivia, and disassociated from the paratypes from Perené and Chanchamayo in Junin, Peru (fig. 3). The fact that the two geographical samples must be thus dissociated raises anew the problem of their status.

Neusticurus ocellatus is broadly separated from the rest of the species group. To call it a subspecies of *ecpleopus* would demand, as I see it, proof of intergradation. The genus certainly occurs in the intervening regions, but no investigation is possible with available materials.

The type of *ocellatus* differs from the paratypes—and from all specimens currently assigned to *ecpleopus*—in the character of the dorsal scutellation and in the color pattern. Differences like these make it probable that *ocellatus* represents a valid species and this position I adopt.

The Junin paratypes present a different problem. It appears that *Neusticurus ecpleopus*, as defined by Uzzell, is a composite of several species. However, as Uzzell himself

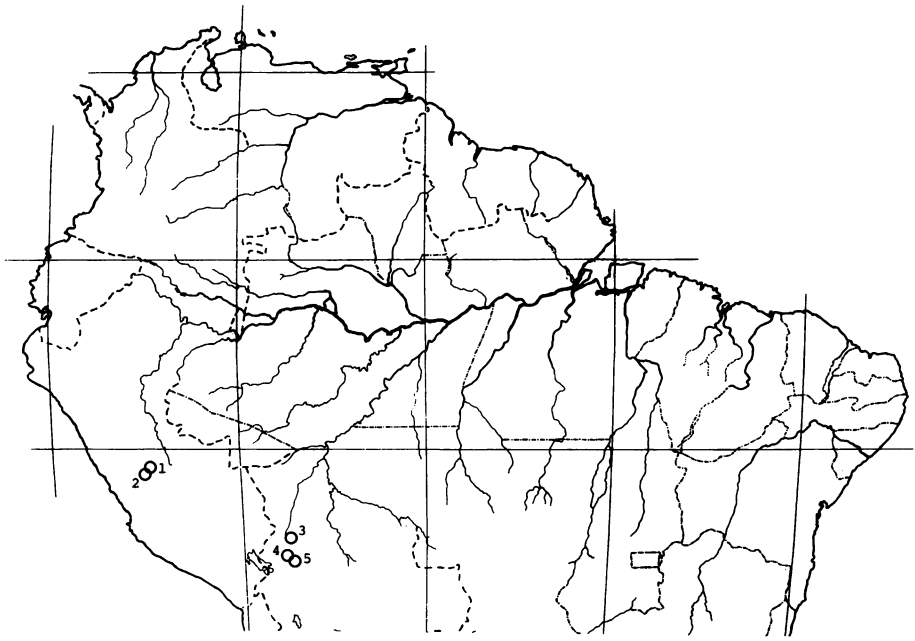

Fig. 3. Relative positions of localities mentioned in text. **1,** Perené. **2,** Chanchamayo. **3,** Rurrenabaque (type locality). **4** and **5,** Misiones Mosetenes, from (4) Muchanes through Sant'Anna to (5) Covendo.

noted in the 1966 paper, and as can still be reasonably repeated today, the problem is not simple, and the available materials possibly not yet sufficient to resolve it. Thus, although I am sure that the name *ecpleopus* represents a species group, I cannot at present assign names or define subgroups within it.

BOLIVIAN SPECIMENS

There are in the literature two citations, involving three specimens, of *Neusticurus ecpleopus* from Bolivia.

Boulenger (1898: 129) mentioned, without comment, one specimen collected by Balzan at the Misiones Mosetenes (no further specification), on the Beni, and preserved in Genova. Balzan (1931: 160–199), canoeing down the Río Beni, visited the three Mosetenes missions, from Covendo (15°49'S, 67°06'W) through Sant'Anna (15°31'S, 67°30'W) to Muchanes (15°14'S, 67°39'W). Rurrenabaque, type locality of *Neusticurus ocellatus*, is about 85 km north of Muchanes. Balzan's specimen is certainly relevant, but I was not able to obtain information on it. However, I am sure Boulenger would not have failed to notice the peculiarities of *ocellatus*.

Werner (1910: 28) described two examples in the Hamburg Museum, collected by C. Bock at "Yungas, ca. 1800–1000 [sic] m, Rio Suapi and Songo, Bolivien, 17° s. Br." This is the same general area as the Misiones Mosetenes—only a little farther south and uphill from them.

Thanks to the courtesy of Dr. H.-W. Koepcke, of the Hamburg Museum, I have been able to see photographs of these specimens. They are undoubtedly *Neusticurus ecpleopus* (s.l.). The fact that they are nearly sympatric with *ocellatus* strengthens the idea that *Neusticurus ocellatus* is a different species.

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