

PROCEEDINGS
OF THE
CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

Vol. XXIX, No. 12, pp. 445-463

February 27, 1959

REPORT ON A COLLECTION OF REPTILES
FROM AFGHANISTAN

BY

ALAN E. LEVITON

*Department of Herpetology
California Academy of Sciences*

During the months of March through September, 1950, Mr. John Gasperetti, on a petroleum exploration survey in Afghanistan, made a small collection of reptiles which he subsequently presented to the California Academy of Sciences. These reptiles, 65 specimens representing 19 species, were collected at the town of Chah-i-Angir¹, in the Dasht-i-Margo Desert, approximately 100 miles southwest of Khānadar, Afghanistan. There are no new forms in this collection. Several species, however, are for the first time definitely recorded from that country.

Following the systematic notes on the collection, I have summarized what is currently known of the affinities of the herpetofauna of Afghanistan and have prepared a checklist of the reptiles and amphibians presently known from that country.

In regard to the specimens at hand, Mr. Gasperetti has kindly supplied the following information about the region in which he made the collection:

¹ The locality Chah-i-Angir has been found on the Girishk quadrangle, no. 34-A, of the 1940 edition of Army Map Service map 103127, 1942, International number H-41 E. It has been determined to be 64° 26' 55" E. Long., and 31° 40' 53" N. Lat., approximately 16.5 miles north of the confluence of the Helmand and Arghandāb rivers, southern Afghanistan.

"Chah-i-Angir is at the confluence of the Helmand and Arghandāb rivers, about 100 miles southwest of Khāndahar, in the Dasht-i-Margo Desert. The Dasht-i-Margo is a high desert . . . the elevation is about 1,000 feet above sea level. There are large sandy areas and intermittent alluvial gravel plains with sparse, small vegetation. Gazelle and lesser bustard abound. The weather in this area is severe, ranging from 120°F. summer temperature to near 0°F., with snow, in winter. Daily extremes are probably 50 degrees or more, as for example 50°F. to 120°F. in summer and 30°F. to 70°F. or 80°F. in winter. The dry season extends from April through September."

SYSTEMATIC NOTES

Class REPTILIA

Order SAURIA

Family GEKKONIDAE

Agamura persica (Duméril)

Gymnodactylus persicus DUMÉRIL, 1856, Arch. Mus. Hist. Nat., Paris, vol. 8, p. 481 (type loc.: Iran).

Agamura persica BLANFORD, 1876, Zool. E. Persia, p. 358, pl. 23, fig. 4a-b. BOULENGER, 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 95, pl. 9, fig. 2. SMITH, 1935, Fauna Brit. India, vol. 2, p. 61, fig. 19.

MATERIAL EXAMINED (2): CAS 84690-84691.

REMARKS: The identification of these specimens is somewhat in doubt. *Agamura persica* and *Gymnodactylus stoliczkai* are very similar in appearance except for the structure of their tails, which differs very strikingly. The tails, however, are missing from both of our specimens, only a few millimeters of stump remaining. The stump is not broadened as in *G. stoliczkai* but rather normal and cylindrical. On the other hand, there are only 10-11 upper labials, fewer than recorded for *A. persica*, but within the limits for *G. stoliczkai*. Since the structure of the tail is certainly the more important of these two taxonomic characters, I have assigned the specimens to the former species.

The two specimens at hand are juveniles, measuring 22.5 mm. and 28.0 mm. in standard (snout-vent) length. In both individuals there are 10-11 upper labials; the scales of the dorsum are heterogenous, with somewhat enlarged, rounded and slightly keeled tubercles scattered among the small

juxtaposed granules; the ventral scales are slightly larger than those of the dorsum and are imbricate; and there is an indistinct pattern of darker cross-bands on the otherwise pale grayish background of the dorsum.

***Alsophylax tuberculatus* (Blanford)**

Bunopus tuberculatus BLANFORD, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 13, p. 454 (type loc.: Baluchistan); 1876, Zool. E. Persia, vol. 2, p. 348, pl. 22, fig. 4.

Alsophylax tuberculatus BOULENGER, 1885, Cat. Lizards Brit. Mus., vol. 1, p. 20. SMITH, 1935, Fauna Brit. India, vol. 2, p. 36, fig. 14.

MATERIAL EXAMINED (1): CAS, unnumbered specimen.

REMARKS: This individual was taken from the stomach of our specimen of *Lytorhynchus ridgewayi*. The head had been largely digested. Otherwise the body is in good condition and the characteristics of the toes and tuberculation of the body are readily discernible. The specimen lacks pre-anal pores and presumably is a female.

***Teratoscincus* cf. *T. bedriagai* Nikolsky**

Teratoscincus bedriagai NIKOLSKY, 1899, Ann. Mus. Zool. Acad. Imp. Sci. St. Petersburg, 1899, p. 146 (type loc.: eastern Iran).

MATERIAL EXAMINED (1): CAS 84689.

REMARKS: The identification of this specimen is only tentative. This conditional identification results from the fact that *T. bedriagai* may be conspecific with *T. przewalski*, known from central China and eastern Turkestan, from which species *T. bedriagai* has been distinguished by the single character of relative size of ventral versus dorsal scales. According to Bedriaga (1905, pp. 159–162) the ventral scales are equal to or slightly larger than the dorsals in *T. przewalski*, and are slightly smaller than the dorsals in *T. bedriagai*. Both species are readily distinguished from other members of *Teratoscincus* by a combination of two conspicuous characters: 1) the enlarged scales on the dorsum do not extend forward beyond the shoulder, and 2) there usually are less than 50 scales around the middle of the body.

In the specimen at hand there are 52 scale rows around the middle of the body, and the enlarged and imbricate cycloid scales of the dorsum do not extend forward beyond the anterior border of the shoulders. The ventral scales are either subequal to or slightly smaller than the dorsals. There are 12 granules in a longitudinal row between the anterior corner of the eye and the nasal shields, 80 granules in a longitudinal row extending from the snout to the first of the enlarged dorsal cycloid scales, and 55 granules

in a median longitudinal series extending from the mental to the first enlarged ventral scales. Nine upper and nine lower labials are present. The nostril is bordered by the rostral and four circumnasal shields.

Measurements (in mm.): Standard length 46; tail length 25.

***Teratoscincus scincus* (Schlegel).**

Stenodactylus scincus SCHLEGEL, 1858, Handl. Dierk., vol. 2, p. 16 (type loc.: Ili River, Turkestan).

Teratoscincus keyserlingii STRAUCH, 1863, Bull. Acad. Sci. St. Petersbourg, vol. 6, p. 280 (type loc.: Seri-Tschah, Iran).

Teratoscincus scincus BOULENGER, 1885, Cat. Lizards Brit. Mus., vol. 1, p. 12, pl. 2, fig. 3; 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 94, pl. 8, fig. 1. SMITH, 1935, Fauna Brit. India, vol. 2, p. 30, fig. 12.

Teratoscincus zarudnyi NIKOLSKY, 1897, Ann. Mus. Zool. Acad. Imp. Sci. St. Petersbourg, 1897, p. 309, pl. 18, fig. 1 (type loc.: eastern Iran).

Teratoscincus roborowskii BEDRIAGA, 1905, Ann. Mus. Zool. Acad. Imp. Sci. St. Petersbourg, vol. 10, p. 159 (type loc.: Oase Ssatschsheu [= Oasis of Sachow, Kansu, *fide* Pope, 1935, Rept. China, p. 458]).

MATERIAL EXAMINED (2): CAS 84648-84649.

REMARKS: Of seven nominal species presently assigned to the genus *Teratoscincus*, three are regarded as conspecific with *T. scincus*. Terentjev and Chernov (1949, p. 128) have suggested that differences in scutellation and color pattern may permit recognition of *T. keyserlingi* and *T. roborowski* as distinct subspecies of *T. scincus*.

Our specimens agree with the description of *T. scincus* given by Smith (1935, p. 30). In CAS 84649, an adult male, there are 31 scales around the body; the enlarged dorsal scales, 49 in a longitudinal series counted from the first enlarged scale on the occiput to the first of the large caudal scales, extend in a band six scale-rows wide from the shoulder to the occiput. There are 35 granules between the eyes (about 45 in CAS 84648), and 17 granules between the eye and nasal shields. The nostril is bordered by a rostral and four circumnasal shields, and there are 11 upper and 11 lower labials. A few small blackish spots are arranged more or less longitudinally on either side of the middorsal line. There is a scattering of reddish spots in the shoulder region, and two diagonal lines on each side of the neck extend from behind the eye to the arm. Otherwise, the ground color is pale gray.

The skin, which among species of *Teratoscincus* is extremely delicate, has been badly damaged in CAS 84648 and body scale patterns cannot be determined.

Measurements (in mm.) are as follows:

	CAS 84648	CAS 84649
Standard length	90.0	98.5
Tail length	31.0	33.0

Family AGAMIDAE

Agama agilis Olivier.

Agama agilis OLIVIER, 1807, Voy. Emp. Otho., vol. 4, p. 394, pl. 24 (in atlas), fig. 2 (type loc.: vicinity of Baghdad, Iraq). SMITH, 1935, Fauna Brit. India, vol. 2, p. 221. *Agama isolepis* BOULENGER, 1885, Cat. Lizards Brit. Mus., vol. 1, p. 342; 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 96, pl. 10, figs. 1-3.

MATERIAL EXAMINED (6) : CAS 84642-84647.

REMARKS: Three of this series of six specimens are females. These are all somewhat lighter on the dorsum than the males; all have black stripes on the throat, but these are very light. The females lack the distinctive black ventrolateral patches which are present in the males. In two of the females, CAS 84645 and 84646, the anterior portions of the head are light gray, which stands in sharp contrast with the much darker grayish black of the dorsum.

The throats of all the males are striped grayish black, the dark color tending to suffuse over the entire throat surface. The black ventrolateral patches do not meet midventrally, but are separated by a narrow grayish space. In CAS 84647, the upper labials, nasals, rostrals, and the anterior half of the throat are light gray; in CAS 84644, the upper and lower labials similarly are light gray.

Eggs were found in all females: CAS 84642 contained five eggs, the largest, measuring one centimeter in diameter, appeared ready for expulsion; in CAS 84645, about 15 eggs were counted in a grape-like cluster at the ovary, the largest measuring only two millimeters in diameter.

The testicular tissues in all male specimens appeared to be greatly enlarged.

Tenebrionid beetles were found in the stomachs of several individuals. Measurements (in mm.) and counts are summarized in table I.

TABLE I
Measurements (in mm.) and counts for specimens of Agama agilis

CAS number	Sex	Standard length	Tail length	Scale rows	Upper labials	Lower labials	Preanal pores
84642	♀	90	136	74	16	18	0
84643	♂	94	147	76	19	17	21
84644	♂	77	130	76	20	17	15
84645	♀	81	117	76	17	16	0
84646	♀	86	117	75	19/21	18	4/7
84647	♂	92	129	72	19	16	25

Phrynocephalus ornatus Boulenger.

Phrynocephalus ornatus BOULENGER, 1887, Cat. Lizards Brit. Mus., vol. 3, p. 496 (type loc.: between Nushki and Helmand River, Afghan-Baluchistan frontier); 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 97, pl. 8, fig. 3. SMITH, 1935, Fauna Brit. India, p. 232.

MATERIAL EXAMINED (7): CAS 84650-84653, 84660-84662.

REMARKS: The four females and three males of this series agree closely with Smith's description (1935, p. 232) of the species. Ovarian eggs were found in each of the females.

MEASUREMENTS (range in mm.) for this species of specimens are as follows:

	Males	Females
Standard length	38.7-39.5	37.0-41.5
Tail length	50.0-55.0	49.0-54.5

Phrynocephalus scutellatus (Olivier).

Agama scutellata OLIVIER, 1804, Voy. Emp. Otho., vol. 3, p. 110 (type loc.: near Ispahan, Iran); 1807, *ibid.*, pl. 42 (in atlas), fig. 1.

Phrynocephalus olivieri DUMÉRIL and BIBRON, 1837, Erp. Gen., vol. 4, p. 517 (based upon Olivier's specimen). BOULENGER, 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 96, pl. 8, fig. 2.

Phrynocephalus scutellatus SMITH, 1935, Fauna Brit. India, vol. 2, p. 229.

MATERIAL EXAMINED (12): CAS 84654-84659, 84663-84668.

REMARKS: Eggs were found in the oviducts of six of the seven females, and the testicular tissues were enlarged in all male specimens. Several ants were found in the stomach of one individual.

The measurements (in mm.) for the sample are as follows:

	Male	Female
Standard length	42.5-48.0	40.5-50.5
Tail length	57.5-74.0	56.5-68.0

Family SCINCIDAE

Ophiomorus tridactylus (Blyth).

Sphenocephalus tridactylus BLYTH, 1855, Jour. Asiatic Soc. Bengal, vol. 22, p. 654 (type loc.: Afghanistan).

Sphenoscincus tridactylus PETERS, 1875, Monatsb. Berl. Akad., 1875, p. 553, figs. 6-12.

Ophiomorus tridactylus BOULENGER, 1887, Cat. Lizards Brit. Mus., vol. 3, p. 394. SMITH, 1935, Fauna Brit. India, vol. 2, p. 346, fig. 78.

MATERIAL EXAMINED (7): CAS 84669–84675.

REMARKS: All specimens at hand are uniform pale cream above with a narrow dorsolateral dark brown stripe which originates at the nostril, passes through the eye, and extends onto the tail. In several specimens there is a dense spotting of dark brown on the posterior portion of the tail.

There is no variation in head scutellation with the exception of CAS 84674 in which there are five rather than six upper labials, and the large fourth shield borders the eye; the loreal on the right side is divided into two small shields.

Enlarged ovarian eggs were found in each of the two females.

Sand grains and fragmentary insect remains were found in the stomachs of two specimens.

The measurements for the sample are as follows:

	Male	Female
Standard length	72–82	86–90
Tail length	56–65	66

Family LACERTIDAE

Acanthodactylus cantoris cantoris Günther.

Acanthodactylus cantoris GÜNTHER, 1864, Rept. Brit. India, p. 73 (type loc.: Ramnagar, Punjab, India). BLANFORD, 1876, Zool. E. Persia, p. 381, pl. 26, fig. 3.
Acanthodactylus cantoris cantoris SMITH, 1935, Fauna Brit. India, vol. 2, p. 371.

MATERIAL EXAMINED (6): CAS 84676, 84678–84679, 84681–84683.

REMARKS: This appears to constitute the second record for this species from Afghanistan. Heretofore, the species has been recorded from eastern Iran, Baluchistan, and the North West Frontier Province, and once from southern Afghanistan (Boulenger, 1889, p. 101).

Four of the six specimens in this series are females. In three of these, eggs were found in the oviduct, and in one the eggs were clumped together in the ovary. A single egg in the oviduct of CAS 84682, an individual 63 mm. in standard length, measured 14 mm. along its long axis.

Insect remains were found in the stomachs of several specimens. However, in one individual, CAS 84683, the largest male of the series, the partially digested remains of a skink, *Ophiomorus tridactylus*, were found.

As indicated by the data in table II, the difference between the sexes in the number of scale rows on the dorsum and in the number of femoral pores suggests these characters are subject to sexual dimorphism. There are no marked differences in coloration or in proportional measurements between the sexes, but the males seem to reach a slightly larger size.

TABLE II
Summary of measurements (in mm.) and counts for the sample
of *Acanthodactylus cantoris cantoris*

Character	Male	Female
Dorsal scale rows	38-41	33-37
Ventral scale rows	13-14	12-14
Femoral pores	21-23	18-20
Standard length	66.0-70.5	63.0-66.5
Tail length	130	96-123

Eremias fasciata Blanford.

Eremias fasciata BLANFORD, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 14, p. 32 (type loc.: Saidabad, southwest of Karman, Iran); 1876, Zool. E. Persia, p. 374, pl. 25, fig. 3. SMITH, 1935, Fauna Brit. India, vol. 2, p. 386.

MATERIAL EXAMINED (5): CAS 84684-84688.

REMARKS: Smith (1935, p. 386) records this species from southern Afghanistan but gives no exact locality. Boulenger (1889, p. 100) records a single specimen from Helmand. The five specimens reported on here, four males and one female, agree closely with Smith's description of the species in scutellation, but differ in color pattern. According to Smith there are five to nine stripes on the neck which reduce to five to seven on the back. In our specimens there are nine to eleven stripes on the neck which extend, without reduction in number, onto the back.

Measurements (in mm.) and counts for this series of specimens are summarized in table III.

TABLE III
Measurements (in mm.) and counts for specimens of
Eremias fasciatus

CAS number	Sex	Scale rows		Upper labials	Femoral pores	Standard length	Tail length
		Dorsal	Ventral				
84684	♂	50	14	11/11	17/19	58	99
84685	♂	49	17	12/13	19/18	62	—
84686	♂	52	16	11/11	17/15	47	—
84687	♂	51	15	11/11	18/18	61	91
84688	♀	46	15	12/12	16/18	42	83

Eremias guttulata watsonana Stoliczka.

Eremias (Mesalina) watsonana STOLICZKA, 1872, Proc. Asiatic Soc. Bengal, 1872, p. 86 (type loc.: between Karachi and Sukkur, Sind).

Eremias guttulata watsonana SMITH, 1935, Fauna Brit. India, vol. 2, p. 389.

MATERIAL EXAMINED (1): CAS 84680.

REMARKS: Previously recorded from the Afghan-Baluch border by Alcock and Finn (1896, p. 558) and from Afghanistan proper by Boulenger (1889, p. 99) and Smith (1935, p. 390; 1940, p. 384) this subspecies has also been recorded from Sind and the North West Frontier Province to the east and from Iran on the west. Lantz's record (1918, p. 15) of *E. guttulata* from the River Tajan, Transcaspia, probably belongs here.

Our specimen is a gravid female measuring 49 mm. in standard length and 89 mm. in tail length. A single egg was found in the left oviduct. There are 44 longitudinal rows of dorsal scales and ten longitudinal rows of ventrals. No preanal or femoral pores are present.

***Eremias velox persica* Blanford.**

Eremias persica BLANFORD, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 14, p. 370 (type loc.: near Ispahan, Iran); 1876, Zool. E. Persia, p. 370, pl. 26, fig. 1.

Eremias velox persica BOULENGER, 1921, Monog. Lacertidae, vol. 2, p. 312. SMITH, 1935, Fauna Brit. India, vol. 2, p. 383.

MATERIAL EXAMINED (1): CAS 84677.

REMARKS: This single male specimen measures 87 mm. in standard length and 172.5 mm. in tail length. Its scale counts fall within the range for the species given by Smith (1935, pp. 383-385).

Family VARANIDAE

***Varanus (Psammosaurus) griseus* (Daudin).**

Tupinambus griseus DAUDIN, 1803, Hist. Nat. Rept., vol. 8, p. 352 (type loc.: Egypt).

Varanus griseus BOULENGER, 1885, Cat. Lizards Brit. Mus., vol. 2, p. 306. ANDERSON, 1898, Zool. Egypt, vol. 1, p. 134 col. pl. SMITH, 1935, Fauna Brit. India, vol. 2, p. 400.

Varanus (Psammosaurus) griseus MERTENS, 1942, Abh. Senck. Mus., Abh. 466, p. 338, pls. 1, 3, 11, 15, figs. 3, 13, 51-52, 91 respectively.

MATERIAL EXAMINED (1): CAS 84641.

REMARKS: According to Smith (1935, p. 401) the scales on the crown of the head are usually larger than those in the neck. In our specimen the lateral nuchal scales are noticeably larger than those on the crown.

The dorsum is light tan and is crossed by eight dark brown cross bars on the body, each approximately four scale rows in width, and at least nine cross bars on the tail; there are indications of a number of yellowish cross bars between the dark brown markings. The head is medium to light brown with two parallel dark brown stripes, one originating at the corner of the

eye, the other below and somewhat behind the eye, both then coursing posteriorly onto the neck where they join with their fellows from the opposite side at the middorsal line just in front of the shoulder.

The specimen measures approximately 350 mm. in standard length; the tail has been damaged.

This species, found widely distributed throughout the Middle East, southwestern Asia, and India, has been recorded from the Shorawuk Plain, at Robat I, on the Afghanistan-Baluchistan frontier (Alcock and Finn, 1896, p. 558; Annandale, 1906, p. 197 [citing previous record]) and in the valley of the Hari-rud (Boulenger, 1889, p. 99).

Order SERPENTES

FAMILY BOIDAE

***Eryx jaculus miliaris* (Pallas).**

Anguis miliaris PALLAS, 1773, Reise Rus., vol. 2, p. 718 (type loc.: Caspian Sea).

Eryx jaculus miliaris BOETTGER, 1888, Zool. Jahrb., vol. 3, p. 939. STULL, 1935, Proc. Boston Soc. Nat. Hist., vol. 40, p. 407.

MATERIAL EXAMINED (1): CAS 84638.

REMARKS: This species has been recorded from Afghanistan only once (Boulenger, 1889, p. 101). According to Dr. J. E. T. Aitchison (in Boulenger, 1889, p. 101) it was found to be common throughout the Badghis region. Two other species of *Eryx* have been recorded from this country; *E. elegans*, described from Afghanistan, and *E. tataricus*, recently reported from Afghanistan by Terentjev and Chernov (1949, p. 230). *Eryx johnei*, known from northwestern India, Pakistan (in Baluchistan), and eastern Iran, has not yet been taken in Afghanistan, although it seems likely that it will be found there.

Measurements (in mm.) and counts for our female specimen are as follows: scales in 49 longitudinal rows, ventrals 191, subcaudals 19, standard length 396, tail length 34.

Family COLUBRIDAE

***Coluber karelini* Brandt.**

Coluber (Tyria) karelini BRANDT, 1838, Bull. Acad. Sci. St. Petersbourg, vol. 3, p. 243 (type loc.: southwestern Asia).

Coluber karelini SMITH, 1943, Fauna Brit. India, vol. 3, p. 169.

MATERIAL EXAMINED (7): CAS 84630-84636.

REMARKS: The identification of these specimens is open to question. The specimens at hand may be divided into two groups. The three smaller individuals, characterized by the color pattern in which there are a series of 40 or more discrete rectangular black cross bars on the dorsum and a series of lateral blotches which alternate with the cross bars, range in their ventral count from 202 to 211, and their subcaudal count from 100 to 102. The four remaining specimens, all larger, have indistinct black cross bars on the body. Among these the ventrals range from 221 to 228, and the subcaudals range from 110 to 118 (for both sexes).

In six of the seven specimens, the sixth upper labial is separated from the ocular border by a small subpostocular; in one specimen, however, these two shields are fused and the sixth upper labial borders the orbit.

Based upon the structure of the sixth upper labial, which in six of the seven specimens does not border the orbit, it is concluded that these specimens must be assigned to *C. karelini*, although the ventral counts of the four largest specimens fall outside the range for this species. The ventral counts of these large specimens, however, agree with those of *C. rhodorachis*, a species distinguished from *C. karelini* by the character of the sixth upper labial, which borders the orbit.

Excluding from consideration the character of the sixth upper labial, the three smaller specimens could easily fit the description of *C. ventromaculatus*.

It must be pointed out that the three species already mentioned, *C. karelini*, *C. rhodorachis*, and *C. ventromaculatus*, are known from southwestern Asia where their distributions overlap most extensively. They exhibit the same ranges of morphological variation, the same color pattern variations, and are found in similar environmental situations.

It seems rather striking, at least to this author, that three species which show so close a morphological and ecological identity, which are sympatric throughout most of their ranges, and which are distinguished, at most, by two variable characters could exist sympatrically and yet be reproductively isolated.

In regard to the variable morphological characters, I have already noted the possible variation in the subpostocular and sixth upper labial which is exhibited among the specimens at hand. When present, the subpostocular prevents the sixth upper labial from bordering the orbit and from contacting the subanterior temporal. However, when the subpostocular is absent or fused to the sixth upper labial, then this latter shield and the fifth upper labial both border the orbit, and the sixth shield borders the subanterior temporal.

Close examination of the ventral counts given by Smith (1943, pp. 167-

170) suggests something is amiss which cannot be explained by separating "ventral count groups" into distinct species. According to Smith, *C. ventromaculatus* may be characterized by a range of ventral counts from 199 to 211, *C. rhodorachis* by a range for males of 205 to 229 (252), and for females 218 to 244, and *C. karelini* by a range of 193 to 212. It should be noted that Smith includes among his counts for *C. rhodorachis* a single male with 252 ventrals, more than 20 ventrals above the limit for males, and in fact 8 more than among his sample of female specimens. I believe it is self-evident that the difference between 199 and 211, the known range for male *C. ventromaculatus* (Boulenger, 1894, pp. 400-401) and 205 to 229, the presumed range for males of *C. rhodorachis* is considerably less than the difference between 205-229 and 252, the range of ventrals for males within the single series.

In so far as *C. ventromaculatus* and *C. karelini* are concerned, based upon a comparison of Smith's data, and the examination of specimens at hand, these species are indistinguishable but for the variable character of the sixth upper labial.

It is not my intention here to alter the established nomenclatural or zoological arrangement of these species, but only to point out that their recognition is based upon characters of rather nebulous taxonomic value, and their present partition is not entirely satisfactory.

Measurements (in mm.) and counts for our sample of *C. karelini* are summarized in table IV.

TABLE IV
Measurements (in mm.) and counts for specimens of
Coluber karelini

CAS number	Sex	Upper labials	Labials in eye	Subpost-ocular	Ventrals	Subcaudals	Standard length	Tail length
84630	♀	9/9	5, 6	— ²	222	—	548	—
84631	♂	9/9	5	+	223	118	724	365
84632	♀	9/9	5	+	228	110+	670	233+
84633	♀	9/9	5	+	221	115	626	224
84634	♀	10/9	5	+	211	100	564	193
84635	♂	9/9	5	+	202	—	296	—
84636	♂	9/9	5	+	209	102+	185	58+

² + = shield present; — = shield absent.

***Lytorhynchus ridgewayi* Boulenger.**

Lytorhynchus ridgewayi BOULENGER, 1887, Ann. Mag. Nat. Hist., ser. 5, vol. 20, p. 413 (type loc.: Chinkilok, Afghanistan); 1889, Trans. Linnean Soc. London, ser. 2, vol. 5, p. 102, pl. 11, fig. 1. SMITH, 1943, Fauna Brit. India, vol. 3, p. 190, fig. 58.

MATERIAL EXAMINED (1): CAS 84639.

REMARKS: A single female of this deserticolous species was collected. A specimen of *Alsophylax tuberculatus* was found in its stomach.

Measurements (in mm.) and counts of this specimen are as follows: 12 maxillary teeth; 7/8 upper labials; 11 lower labials; nasal divided; 1/1 loreal; 1/1 pre- and 2/2 postoculars; 2/2 suboculars; 2/2 anterior temporals; prefrontal divided; scales in 19 longitudinal rows at midbody; 182 ventrals; anal plate single; 41 dark blotches on dorsum; standard length 334; tail damaged.

***Psammophis schokari* (Forskål).**

Coluber schokari FORSKÅL, 1775, Desc. Anim., p. 14 (type loc.: Yemen).

Psammophis schokari BOULENGER, 1896, Cat. Snakes Brit. Mus., vol. 3, p. 157. SMITH, 1943, Fauna Brit. India, vol. 3, p. 363.

MATERIAL EXAMINED (1): CAS 84629.

REMARKS: Only one female of this species was obtained. The color pattern of this specimen is normal except that the dorsomedian pair of black stripes are broken up into series of longitudinally arranged black spots.

Measurements (in mm.) and counts of this individual are as follows: scales in 17 longitudinal rows at midbody; 9/9 upper and 10/10 lower labials; nasal divided; 1/1 loreal; 1/1 pre- and 2/2 postoculars; 2+2+3/2+2+3 temporals; 184 ventrals; 116 subcaudals; standard length 634; tail length 312.

***Boiga trigonata melanocephala* (Annandale).**

Dipsadomorphus trigonata var. *melanocephalus* ANNANDALE, 1904, Jour. Asiatic Soc. Bengal, vol. 73, p. 209, pl. 9, figs. 3-4 (type loc.: Iranian-Baluchistan frontier).

Boiga trigonata SMITH, 1943, Fauna Brit. India, p. 349 (in part).

MATERIAL EXAMINED (1): CAS 84637.

REMARKS: Annandale's variety *Dipsadomorphus t. melanocephalus*, based upon three specimens with dark heads, was considered by Smith (1943, p. 350) to be a color variety not worthy of subspecific rank. In view of the fact that the dark-headed forms of *B. trigonata* appear to occupy a geographical area distinct from the more typical color phase of this species, I am inclined to regard it as a distinct subspecies.

The specimen at hand has been badly damaged. Its measurements (in mm.) and counts are as follows: 11 maxillary teeth; scales in 21 longitudinal rows at midbody; 8/8 upper labials, the third, fourth and fifth bordering the orbit; 1/1 pre- and 2/2 postoculars; 2+3/2+2 temporals; 230 ventrals; standard length (approximate) 470; tail damaged.

Annandale does not give the exact locality at which his specimens were collected. Smith records *B. trigonata* from Baluchistan, the North West Frontier Province, and the Transcaspian region, as well as elsewhere in India. Our record appears to be the first for Afghanistan.

Family VIPERIDAE

Echis carinatus (Schneider).

Pseudoboa carinata SCHNEIDER, 1801, Hist. Amphib., vol. 2, p. 285 (based on figure by Russell, 1796, Ind. Serp., vol. 1, pl. 2).

Echis carinata FAYRER, 1874, Thanatophidia India, pl. 12.

Echis carinatus SMITH, 1943, Fauna Brit. India, vol. 3, p. 487, fig. 154.

MATERIAL EXAMINED (2): CAS 84627-84628.

REMARKS: The two specimens, both females, agree closely with descriptions of this species. Specimen CAS 84628 contained the partially digested remains of an *Acanthodactylus c. cantoris* in its stomach.

Measurements (in mm.) and counts of these specimens are given in table V.

TABLE V
Measurements (in mm.) and counts for specimens of
Echis carinatus

CAS number	Scale rows	Upper labials	Circum- oculars	Inter- oculars	Ventrals	Subcaudals	Standard length	Tail length
84627	36	12/11	17	9	181	31	415	45
84628	31	13/11	18	10	182	35	477	56

DISCUSSION

Afghanistan is a land-locked country bounded by Russian Turkestan on the north, Iran on the east, and the Pakistan provinces of Baluchistan, Sind, and the North West Frontier Province on the south and west. The low lands along the southern borders of Afghanistan lie about 1000 feet above sea level. The level of the land rises toward the north, and especially toward the northeast where altitudes in excess of 25,000 feet are reached. Rainfall throughout the country is meager, especially so in the southern deserts. Extremes of temperature are to be expected, and within one year may range as much as 140 degrees in one locality.

The herpetofauna of Afghanistan is largely deserticolous, the genera

and species being for the most part Palearctic origin. Genera, such as *Agama*, *Eremias*, *Phrynocephalus*, *Uromastix*, *Varanus*, *Stenodactylus*, *Alsophylax*, *Echis*, *Leptotyphlops*, *Lytorhynchus*, *Psammophis*, and *Eryx* are all prominently represented in the arid and semiarid regions of southwestern Asia, the Transcaspian region, and farther west in the Arabian Peninsula and northern Africa.

Other genera found in Afghanistan, notably *Teratoscincus* and *Crossobamon*, are known from the Transcaspian region and eastward into Turkestan. They have entered Afghanistan and eastern Iran, but do not appear to have extended farther into the deserts of southwestern Asia.

Three European species of reptiles have entered Afghanistan: *Typhlops vermicularis*, *Natrix tessellatus*, and *Vipera lebetina*. These species are also known from Transcaspia, Iran, and Iraq.

Only a single reptile is endemic to Afghanistan, *Eryx elegans*.

Among the amphibians, two species, *Bufo viridis* and *Rana ridibunda*, both of which are widely distributed throughout the Palearctic region, have been found in Afghanistan. In so far as is known, these species are found in the mountains of central and northern Afghanistan where there are sufficient water resources, especially from the melt of the winter snows, to provide for their activities.

Recently Smith (1940, p. 382) described a new salamander from the mountain streams above Paghman, at an altitude in excess of 9,000 feet. This salamander, *Batrachyperus mustersi*, presently known only from the type locality, is related to *B. pinchoni* and *B. tibetanus*, both known from the highlands of southwestern China.

The fourth amphibian recorded from Afghanistan, *Rana sternosignata*, has been taken at Arbarp, in the highlands to the immediate west of Kabul, at an altitude of 7,000 feet. The species has been recorded from Sind, Baluchistan, and Kashmir where it has always been found in an aquatic habitat. The relationships of this frog are not certain; Boulenger (1920, pp. 70-71), however, places it next to *Rana tibetiana*, a species known from the high plateau region of southwestern China.

At least two Oriental genera and species have entered Afghanistan from the east, *Ptyas mucosus* and *Boiga trigonata*. It would seem remarkable that this latter species, which is adapted to arboreal habitats, should live where such habitats are unavailable. However, other specimens of *Boiga trigonata* have been found in widely scattered places throughout the Afghanistan-Baluchistan desert region where there is little or no vegetation, so it is reasonably certain that the snake is not just a casual entrant into this area.

In summary, it is evident that Afghanistan has been populated by elements of the Palearctic herpetofauna, including many forms from the Iranian and Turkestan regions, and one or two amphibians from Tibet.

At least two Oriental genera are also represented. The high-altitude Himalayan lizard fauna of northern India and Pakistan does not appear to have made inroads into northern Afghanistan. However, very little collecting has been done in that region, and it is by no means certain that future effort will not demonstrate closer affinities between the mountain faunas of northern Afghanistan and India than has been found among the Oriental Indian and Afghan faunal elements to the south.

CHECKLIST

In the following list of reptiles and amphibians I have mentioned only those forms which have been collected within the political boundaries of Afghanistan or at localities in the vicinity of the international borders between Afghanistan and its neighboring countries. Evaluation of literature records, upon which this list is largely based, has in some cases been difficult. This is especially true of the records of Alcock and Finn, Blanford, and Boulenger, which were based upon the collections made in the course of the Persian-Afghanistan-Baluchistan Boundary Delimitation Commission expeditions. Some specimens collected by these expeditions were obtained at border localities; some were obtained at varying distances south of the international border, in Baluchistan, or east of the border, in Iran. I have included in this checklist all records of specimens which were collected at border localities, as for example Koh-i-Malik-Shar, but not from localities several miles distant from the border, as for example Darband.

Afghanistan records have been obtained from several sources, most important of which are Alcock and Finn (1896), Boulenger (1889), Smith (1935; 1940; 1943), and Terentjev and Chernov (1949).

Class AMPHIBIA

Order CAUDATA

Family HYNOBIIDAE

Batrachyperus mustersi Smith

Order SALIENTIA

Family BUFONIDAE

Bufo viridis Laurenti

Family RANIDAE

Rana ridibunda Pallas

Rana sternosignata Murray

Class REPTILIA

Order SAURIA

Family GEKKONIDAE

<i>Agamura persica</i> (Duméril)	<i>Gymnodactylus fedtschenkoi</i> Strauch
<i>Alsophylax tuberculatus</i> (Blanford)	<i>Gymnodactylus scaber</i> (Heyden)
<i>Crossobamon eversmanni</i> (Wiegmann)	<i>Teratoscincus bedriagai</i> Nikolsky
<i>Eublepharus macularius</i> (Blyth)	<i>Teratoscincus scincus</i> (Schlegel)
<i>Gymnodactylus caspius</i> Eichwald	

Family AGAMIDAE

<i>Agama agilis</i> Olivier	<i>Phrynocephalus luteo-guttatus</i>
<i>Agama caucasica</i> (Eichwald)	Boulenger
<i>Agama nupta</i> de Filippi	<i>Phrynocephalus maculatus</i> Anderson
<i>Agama ruderata</i> Olivier	<i>Phrynocephalus mystaceus</i> (Pallas)
<i>Agama sanguinolenta</i> (Pallas)	<i>Phrynocephalus ornatus</i> Boulenger
<i>Agama tuberculata</i> Gray	<i>Phrynocephalus scutellatus</i> (Olivier)
<i>Phrynocephalus interscapularis</i> Lichtenstein	<i>Uromastix asmussi</i> (Strauch)

Family SCINCIDAE

<i>Ablepharus grayanus</i> (Stoliczka)	<i>Eumeces taeniolatus</i> (Blyth)
<i>Ablepharus pannonicus</i> Fitzinger	<i>Ophiomorus brevipes</i> (Blanford)
<i>Eumeces schneideri</i> (Daudin)	<i>Ophiomorus tridactylus</i> (Blyth)

Family ANGUINIDAE

Ophiosaurus apodus Pallas

Family LACERTIDAE

<i>Acanthodactylus cantoris</i> Günther	<i>Eremias guttulata watsonana</i> Stoliczka
<i>Eremias acutirostris</i> (Boulenger)	<i>Eremias lineolata</i> (Nikolsky)
<i>Eremias aporosceles</i> (Alcock & Finn)	<i>Eremias regeli</i> Bedriaga
<i>Eremias fasciata</i> Blanford	<i>Eremias scripta</i> (Strauch)
<i>Eremias grammica</i> (Lichtenstein)	<i>Eremias velox persica</i> Blanford

Family VARANIDAE

Varanus griseus (Daudin)

Order SERPENTES

Family TYPHLOPIDAE

Typhlops vermicularis Merrem

Family LEPTOTYPHLOPIDAE

Leptotyphlops blanfordi (Boulenger)

Family BOIDAE

Eryx elegans Gray*Eryx tataricus* (Lichtenstein)*Eryx jaculus miliaris* (Pallas)

Family COLUBRIDAE

Boiga trigonata melanocephala
(Annandale)*Lytorhynchus maynardi* Alcock & Finn*Lytorhynchus ridgewayi* Boulenger*Coluber karelini* Brandt*Natrix tessellata* Laurenti*Coluber raverigieri* Ménétriés*Psammophis leithi* Günther*Coluber rhodorachis* (Jan)*Psammophis lineolatus* (Brandt)*Coluber ventromaculatus**Psammophis schokari* (Forskål)

Gray & Hardwick

Ptyas mucosus (Linnaeus)*Sphaerosophis diadema* (Schlegel)

Family ELAPIDAE

Naja naja oxiana (Eichwald)

Family VIPERIDAE

Echis carinata (Schneider)*Vipera lebetina* (Linnaeus)*Pseudocrastes persica* (Duméril, Bibron, Duméril)

Order CHELONIA

Family TESTUDINIDAE

Testudo horsfieldi Gray

BIBLIOGRAPHY

ALCOCK, A., and F. FINN

1897. An account of the Reptilia collected by Dr. F. P. Maynard, Captain A. H. McMahon, C.I.E., and the members of the Afghan-Baluch Boundary Commission of 1896. *Journal of the Asiatic Society of Bengal*, 65:550-566, pls. 11-15.

ANNANDALE, NELSON

1906. Notes on the fauna of a desert tract in southern India. Part I. Batrachians and reptiles, with remarks on the reptiles of the desert region of the North-West Frontier. *Memoirs of the Asiatic Society of Bengal*, 1:183-202, pls. 9-10.

BEDRIAGA, J. VON

1905. Verzeichnis der von der Central-Asiatischen Expedition unter Stabs-Kapitän W. Roborowski in den Jahren 1893-1895 gesammelten Reptilien. *Annuaire du Musée Zoologique de l'Académie Impériale des Sciences de St. Petersburg*, 10:159-200.

BOULENGER, GEORGE ALBERT

1889. Reptiles and batrachians. In: Aitchison, J. E. T., The zoology of the Afghan Delimitation Commission. *Transactions of the Linnean Society of London*, ser. 2, vol. 5, Zoology, pp. 94-106, pls. 8-11.

BLANFORD, W. T.

1876. Eastern Persia, an account of the journeys of the Persian Boundary Commission, 1870-71-72. Vol. II. The zoology and geology. London, 516 pp., 28 pls.

FORCART, LOTHAR

1950. Amphibien und reptilien von Iran. *Verhandlungen der naturforschenden Gesellschaft*, Basel, 61:141-156.

LANTZ, L. A.

1918. Reptiles from the River Tajan (Transcaspia). *Proceedings of the Zoological Society of London*, 1918, pp. 11-17, pl. 1.

MURRAY, J. A.

1892. The zoology of Beloochistan and southern Afghanistan. London, 83 pp.

SMITH, MALCOLM ARTHUR

1935. The fauna of British India, including Ceylon and Burma. Reptilia and Amphibia. Vol. II. Sauria. London, xiii + 440 pp., 1 pl.
1940. Contributions to the herpetology of Afghanistan. *Annals and Magazine of Natural History*, ser. 11, vol. 5:382-384.
1943. The fauna of British India, Ceylon, and Burma, including the whole of the Indo-Chinese subregion. Reptilia and Amphibia. Vol. III. Serpentes. London, xii + 583 pp.

TERENTJEV, PAUL V., and S. A. CHERNOV

1949. S. A. Operedlitel Presmykaiushchikhsia i Zemnovodnykh. Moscow, 3 ed., 340 pp. (In Russian.)

ZUGMAYER, ERICH

1909. Beiträge zur Herpetologie von Zentral-Asien. *Zoologischen Jahrbüchern*, Abt. Systematik, 27:481-508.



Leviton, A E. 1959. "Report on a collection of reptiles from Afghanistan."
Proceedings of the California Academy of Sciences, 4th series 29, 445–463.

View This Item Online: <https://www.biodiversitylibrary.org/item/53422>

Permalink: <https://www.biodiversitylibrary.org/partpdf/51714>

Holding Institution

MBLWHOI Library

Sponsored by

MBLWHOI Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: California Academy of Sciences

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.