

REPTILIA AND BATRACHIA OF THE SALT RANGE, PUNJAB.

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As long ago as 1851-52 a fairly large collection of reptiles was made in the Punjab Salt Range by William Theobald of the Geological Survey of India. The specimens were sent to Calcutta in two lots. The earlier consignment was despatched from Pind Dadan Khan¹ and was described by Blyth in the *Proceedings of the Asiatic Society of Bengal* for 1853. It comprised seven species of lizards and one of snake. The second lot, which contained specimens from several other localities besides the Salt Range, was also described by Blyth² in the same journal in the following year. It was richer than the first and included specimens of several interesting forms. Unfortunately we do not know any particulars of the exact localities in which Theobald made his collections. Most of the specimens sent by Theobald are still preserved in the collection of the Zoological Survey of India, including the types of Blyth's new species. In the following table Blyth's identifications are shown, together with the modern names of the species and their distribution. We have also added the names of the species collected by one of us and not obtained by Theobald. Those recently collected are distinguished by a star (*). The only addition to our knowledge of the herpetology of the Range since 1854 is Dr. Annandale's³ description of a new species of lizard (*Gymnodactylus montium-salsorum*) based on specimens from Theobald's collection.

Blyth's identification.	Modern name,	Further distribution.
Lizards.		
<i>Gymnodactylus geckoides</i>	<i>Gymnodactylus montium-salsorum</i> Annand.	Endemic.
<i>Stenodactylus scaber</i> ...	<i>Gymnodactylus scaber</i> * (Rüppel)	Egypt, Abyssinia through south-western Asia to Baluchistan and Sind.
	<i>Gymnodactylus kachhensis</i> * Stoliczka	Cutch, Sind.
<i>Hemidactylus coctaei</i> ...	<i>Hemidactylus flaviviridis</i> * Rüppel	Abyssinia, Arabia, Persia, Baluchistan, India, Burma and Malay Peninsula.
	<i>Hemidactylus brookii</i> * Gray	Southern Europe, N. W. Africa, South Asia, Malay Archipelago and Australia.

¹ Blyth, *Journ. As. Soc. Bengal* XXII, p. 410 (1853).

² Blyth, *Journ. As. Soc. Bengal* XXIII, p. 737 (1854).

³ Annandale, *Rec. Ind. Mus.* IX, p. 313, pl. xvii, fig. 2 (1913).

Blyth's identification.	Modern name.	Further distribution.
Lizards— <i>contd.</i>		
<i>Hemidactylus leschenaultii</i> ?	<i>Hemidactylus flaviviridis</i> ¹ Rüppel.*	India, Ceylon and Malay Peninsula (<i>H. leschenaultii</i>).
<i>Cryptodactylus macularius</i>	<i>Eublepharis macularius</i> * (Blyth)	Euphrates, Persia, Baluchistan and N. W. India.
	<i>Calotes versicolor</i> (Daud.)*	Afghanistan to China.
<i>Charasia dorsalis</i>	<i>Charasia dorsalis</i> (Gray)	Southern India.
<i>Laudakia</i> (?) <i>melanura</i>	<i>Agama melanura</i> * (Blyth)	W. Baluchistan, Sind and N. W. India.
<i>Agama agilis</i> (<i>Trapelus flavimaculatus</i> (Rüpp.))	<i>Agama isolepis</i> Blg. ...	Egypt, Persia, Baluchistan, Sind and Punjab.
<i>Uromastix hardwickii</i> ...	<i>Uromastix hardwickii</i> * Gray	W. Baluchistan and N. W. India.
<i>Monitor dracaena</i> ...	<i>Varanus bengalensis</i> (Daud.)	India and Ceylon.
	<i>Varanus flavescens</i> * (Gray)	N. India, Burma and Malay Peninsula.
<i>Acanthodactylus vulgaris</i>	<i>Acanthodactylus cantoris</i> Günth.	S. E. Persia, Baluchistan, Sind and N. W. India.
<i>Cabrita leschenaultii</i> ...	<i>Cabrita leschenaultii</i> D. & B,	Peninsular India, Ceylon and S. E. Berar.
	<i>Ophiops jerdonii</i> * Blyth	N. W. Baluchistan, Sind and India.
	<i>Mabuia dissimilis</i> * (Hallow)	Sind to Bengal.
<i>Eurolepis taeniolatus</i> ...	<i>Eumeces taeniolatus</i> (Blyth)	Endemic.
Snakes.		
<i>Tortrix eryx</i> (<i>Eryx indica</i> Gray)	<i>Eryx johnii</i> (Russell)	Sind, Cutch, Punjab and sandy tracts of Central and Southern India.
	<i>Oligodon arnensis</i> * (Shaw)	India and Ceylon.
	<i>Zaocys mucosus</i> * (Linn.) ...	Afghanistan to Malay Peninsula and Java.
<i>Vipera echis</i> Ind. var. ...	<i>Echis carinata</i> (Schneider)	N. Africa, S. W. Asia and India.

Considering the old and the recent collections together, we find that at least 18 species of lizards and 4 of snakes are known from the

¹ The only specimen in our collection from northern India referred to *H. leschenaultii* proved on examination to belong to *H. flaviviridis*. The former species is essentially a south Indian form and, therefore, Blyth's record of it from the Salt Range is doubtful. Unfortunately we have not been able to trace the Salt Range specimen identified by Blyth as *H. leschenaultii* in the collection of the Indian Museum

Salt Range. Of the 18 species of lizards 2 are evidently endemic, 4 are known to be widely distributed in the Oriental region and 5 in India, while the remaining 7 have hitherto been known from the desert tracts of south-east Persia, Baluchistan and Sind. The climate being dry and hot for a considerable part of the year, and consequently the conditions of life being very unfavourable for many terrestrial animals, it is not surprising to find a preponderance of the desert or semi-desert forms in the reptilian fauna of the Salt Range.

Of the four species of snakes, 2 are desert forms, while of the remaining two, one is widely distributed in India and the other in the Oriental Region.

Nothing has so far been known of the Batrachian fauna of the Salt Range. In the recent collection the following four species are represented :—

Rana cyanophlyctis Schneider.
Rana tigrina Daud.
Bufo viridis Laur.
Bufo stomaticus Lütken.

One species of *Rana* and one of *Bufo* are represented by a single tadpole each. *Bufo viridis* is chiefly a palaeartic form, while the other three are quite common throughout India.

We have received great help from Dr. N. Annandale in preparing this paper and are greatly indebted to him for it.

We propose to discuss in the following notes only those forms which have recently been collected in the Pind Dadan Khan Tehsil of the Jhelum District.

REPTILIA

Family GECKONIDAE

***Gymnodactylus scaber* (Rüppel).**

1890. *Gymnodactylus scaber*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 62.

1913. *Gymnodactylus scaber*, Annandale, *Rec. Ind. Mus.* IX, p. 315.

A female specimen, 44 mm. in length without the tail, was obtained from the kitchen walls attached to the civil rest house at Sardhi. It agrees fairly closely with the specimens of the species from Bushire, Malakand, Afghanistan and Sind in the collection of the Indian Museum. The colour is somewhat different. The back in the middle is infuscated with gray and so are also the distal portions of the limbs.

Gymnodactylus scaber has hitherto been found in Egypt, Abyssinia, Baluchistan and Sind, but its occurrence in the Salt Range, Punjab extends its range considerably eastwards.

***Gymnodactylus kachhensis* Stoliczka.**

1890. *Gymnodactylus kachhensis*, Boulenger, *op. cit.*, p. 63.

1913. *Gymnodactylus kachhensis*, Annandale (in part), *op. cit.*, p. 315.

Two specimens of this species were taken on the walls of the civil rest house at Nurpore. They agree with the type-specimen in our collection.

We have examined all the specimens referred to this species in the collection of the Indian Museum and find that those from Quetta and N.W. Baluchistan¹ differ from the others in several important points. They represent Strauch's *G. fedtschenkoi* from Turkestan, with Nikolski's² figure of which they agree in every particular. *G. fedtschenkoi* is thus reinstated as a member of the Indian fauna, though Boulenger³ was wrong in attributing specimens from the Punjab Salt Range to this species.

The four closely allied species of this group of *Gymnodactylus*, now included in the fauna of the Indian Empire, may be distinguished by the following key:—

- A. About 20 longitudinal rows of scales across mid-belly.
 - I. Tubercles between eye and ear-opening prominent and distinctly keeled; both femoral and preanal pores in male *G. montium-salsorum*.
 - II. Tubercles between eye and ear-opening small and rounded or indistinctly keeled; only preanal pores present in male *G. scaber*.
- B. At least 30 longitudinal series of scales across mid-belly.
 - I. Sub-caudal plates large, longer than wide; three pairs of chin shields; about 40 longitudinal rows of scales across mid-belly (preanal pores in male) *G. fedtschenkoi*.
 - II. Sub-caudal plates absent, under surface of tail covered with normal scales; two pairs of chin shields well marked; about 30 longitudinal rows of scales across mid-belly (preanal pores in male) *G. kachhensis*.

Hemidactylus brookii Gray.

1890. *Hemidactylus gleadowii*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 86, fig. 27.
 1898. *Hemidactylus brookii*, Boulenger, *Ann. Mag. Nat. Hist.* (7) I, p. 123.

Four specimens of this common Indian species were taken from a village in the vicinity of Choa Saidan Shah.

Hemidactylus flaviviridis Rüppel.

1890. *Hemidactylus coctaei*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 92.
 1912. *Hemidactylus flaviviridis*, Boulenger, *Faun. Malay Penin. Reptiles*, p. 44.

In the collection from the Punjab Salt Range, this species is represented by three specimens. They were taken from the walls of the dak bungalow at Khewra. The species occurs all over the Indian Empire.

It has been noticed by Boulenger (*op.cit.*) that the upper surface of the tail is provided with "4 or 6 longitudinal series of conical tubercles," but from an examination of a large series of specimens of *H. flaviviridis* in the collection of the Indian Museum from widely different localities

¹ These specimens were recorded by Annandale as *Gymnodactylus* sp. (*prox. kachhensis*) in *Mem. As. Soc. Bengal* I, p. 197 (1907).

² Nikolski, *Herpet. Turanica*, pl. iv, fig. 1 (1899) in Fedtschenko's *Reise in Turkestan*.

³ Boulenger, *Faun. Brit. Ind. Reptiles*, p. 61 (1890); see Annandale, *Rec. Ind. Mus.* IX, p. 313, pl. xvii; fig. 1 (1913).

we find that this character is not constant. The tubercles may be present or absent and specimens of both types are present in fairly large numbers in our collection. Those with a smooth tail are numerically better represented. We have not, however, been able to find any other well-marked character correlated with this difference in the tail. Of the three specimens from the Salt Range, only one has a tail, which is smooth.

Dr. Annandale informs us that this species has frequently been confused with *H. leschenaultii* which he believes to be confined, so far as India is concerned, to the central and southern part of the Peninsula. Blyth's specimen from the Salt Range is no longer available, but we find one from Sind identified as *H. leschenaultii* which actually belongs to *H. flaviviridis*.

Family EUBLEPHARIDAE.

Eublepharis macularius (Blyth).

1890. *Eublepharis macularius*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 108, fig. 33.

A young specimen of this species was procured at night in a field close to the civil rest house at Nurpore.

The type-specimen from the Salt Range is in quite good condition except that it has lost its natural colouration. It is a young female and is about 12 cm. in length including the tail, which is partly reproduced.

As the specimens of the two Indian species of *Eublepharis* have been confused in our collection, we give below the localities whence those of the two Indian species are represented.

E. hardwickii.

4121	...	...	Khurda, Orissa.	...	J. Wood-Mason.
6219	...	...	Gangam, Madras Presidency	...	V. Ball.
6220	...	...	Sunderbuns, Calcutta.	...	W. Swinhoe.
6221-22	...	...	Chaibassa, Chota Nagpur	...	Capt. Haughton.
18460	...	...	Central Provinces, India	...	Zool. Gardens, Calcutta.

E. macularius.

6224 (Type)	...	...	Salt Range, Punjab	...	W. Theobald.
5884, 5889	...	...	Sind	...	Karachi Mus. Ex.
5957-58	...	...	Karachi	...	" " "
5968	...	...	"	...	" " "
14329	...	...	Afghanistan	...	C. R. M. Green.
5840	...	...	Rajanpur, Trans Indus	...	E. Sanders.
5969	...	...	Shahpur, Punjab.	...	E. C. Corbyn.
19343	...	...	Nurpore, Salt Range, Punjab	...	S. L. Hora.
11703	...	...	Quetta, Baluchistan	...	Col. St. John.
18533	...	...	Rawalpindi, N. Punjab	...	R. Hodgart.
6223	...	...	Amritsar, Punjab	...	Purchased.
13682	...	...	Cherat	...	Sir H. Collet.
13967	...	...	Chitral	...	F. J. Daly.
		...	Malakand	...	H. McMahon.

Family AGAMIDAE.

Calotes versicolor (Daud.).

1890. *Calotes versicolor*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 135, fig. 42.

Calotes versicolor is commonly found on bushes and bare rocks in the Salt Range. It is very much dreaded as a poisonous lizard and very few people cared to collect these animals for money.

Three specimens of this species are present in the recent collection. One was shot at Sardhi, while the other two were purchased at Nurpore.

Dr. Annandale informs us that our specimens represent the race *gigas* (*Mem. As. Soc. Bengal* I, p. 189, 1905). This race is a semi-desert form and is not found in the Indo-Gangetic plain, Assam or Burma.

Agama melanura (Blyth).

1885. *Agama melanura*, Boulenger, *Cat. Brit. Mus. Lizards* I, p. 363.

1885. *Agama lirata*, *id.*, *ibid.*, p. 364.

1890. *Agama melanura*, *id.*, *Faun. Brit. Ind. Reptiles*, p. 150.

1890. *Agama lirata*, *id.*, *ibid.*, p. 150.

The types of both the species, *Agama melanura* (Blyth) and *A. lirata* (Blanford) are preserved in the collection of the Indian Museum. From an examination of these specimens, and also of others which have been from time to time referred to these species and are now preserved in our collection, we find that *A. lirata* is identical with *A. melanura*. The only difference noted by Boulenger in these two species is the size and arrangement of the scales on the dorsal surface. But even in this respect we find the specimens identical.

We give below a list of specimens of this species in the collection of the Indian Museum. The type is labelled as having come from Simla but we think that this is really a mistake. It is in all probability from the Salt Range, Punjab.

6703 (Type)	...	?Simla	...	...	W. Theobald.
3410	...	W. Baluchistan	...	...	W. T. Blanford. (Type of <i>A. lirata</i>).
4814-19	...	Sind	...	...	C. H. T. Robinson.
15099-15101	}	Sind	...	...	A. W. Murray.?
15103-15106					
15108-15109					
19344	...	Nurpore, Punjab Salt Range	...	...	S. L. Hora.

Uromastix hardwickii Gray.

1890. *Uromastix hardwickii*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 157, fig. 45.

From the number of specimens present in the collection, it appears that the species is very common in the Salt Range. The shepherd boys are known to play with this lizard when out in the field. They catch it in a curious way. When they see a lizard of this species in the open, they close the nearest hole by placing their foot on it. Then they alarm the lizard by throwing bits of stones and it invariably runs to the hole and finding it closed, dances about the foot and is easily captured.

Several specimens, all young, were obtained in the neighbourhood of Choa Saidan Shah.

Uromastix hardwickii is a desert form and is found in the semi-desert tracts of Baluchistan and N. W. India.

Family VARANIDAE.

Varanus flavescens (Gray).

1890. *Varanus flavescens*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 164.

This is a common North Indian species and is represented in the Salt Range collection by two specimens. Both of them were purchased at Nurpore.

Family LACERTIDAE.

Ophiops jerdonii Blyth.

1921. *Ophiops jerdonii*, Boulenger, *Monograph Lacertidae* II, p. 201.

This is one of the commonest species of lizard found in the Salt Range and is represented in the collection by a large series of specimens. It was seen everywhere along the paths and on the slightest provocation by individuals either hid themselves under stones or amongst thick bushes.

Ophiops jerdonii is found in Baluchistan (Quetta), Cutch, Sind, North-western, central and Peninsular India.

Family SCINCIDAE.

Mabuia dissimilis (Hallow).

1890. *Mabuia dissimilis*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 185.

In the collection from the Punjab Salt Range there are four specimens of *Mabuia dissimilis*. These were obtained from villages in the neighbourhood of Choa Saidan Shah. The species is quite common in the plains of India.

Family COLUBRIDAE.

Oligodon arnensis (Shaw).

1890. *Simotes arnensis*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 314.

1919. *Oligodon arnensis*, Wall, *Snakes of Ceylon*, p. 231.

A single specimen of the common Indian snake *Oligodon arnensis* was captured at night on the walks in the garden attached to the dak bungalow at Choa Saidan Shah. The species is found in India and Ceylon.

Zaocys mucosus (Linn.).

1890. *Zamenis mucosus*, Boulenger, *Faun. Brit. Ind. Reptiles*, p. 324.

1919. *Zaocys mucosus*, Wall, *Snakes of Ceylon*, p. 172.

This species is represented by a single specimen taken in the garden attached to the Kallar Kahar police rest house. It is about four and

half feet in length. *Zaocys mucosus* is very widely distributed. It is found in Afghanistan, throughout India, Ceylon, Burma, S. China, Siam, Malay Peninsula and Java.

BATRACHIA.

Family RANIDAE.

Rana cyanophlyctis Schneider.

1920. *Rana cyanophlyctis*, Boulenger, *Rec. Ind. Mus.* XX, p. 12.

Rana cyanophlyctis is the commonest frog found in the Salt Range and is represented by a large number of specimens including adults, half-grown frogs and tadpoles. The species was also found in slightly saline water.

Its range extends from Arabia to India, Ceylon and the northern part of the Malay Peninsula.

Rana tigrina Daud.

1918. *Rana tigrina* (larva), Annandale and Rao, *Rec. Ind. Mus.* XV, p. 34.

A single tadpole of *Rana tigrina* was obtained in a small stream below Watli in the neighbourhood of Choa Saidan Shah. It is a very widely distributed Indian species and its range is known to extend as far east as Burma and Yunnan.

Family BUFONIDAE.

Bufo viridis Laur.

1890. *Bufo viridis*, Boulenger, *Faun. Brit. Ind. Rep. Batrachia*, p. 594.

1918. *Bufo viridis*, Annandale and Rao, *Rec. Ind. Mus.* XV, p. 40.

Several adult specimens of this species were collected near the Khewra dak bungalow, where they were usually seen hopping about towards the evening. A tadpole was also collected in a stream (Sandreh) about a mile from Khewra.

Bufo viridis is chiefly a Palaearctic species but is known to be very common in the Kashmir Valley and in many districts north and west of the Punjab.

Bufo stomaticus Lütken.

1918. *Bufo stomaticus* (larva), Annandale and Rao, *Rec. Ind. Mus.* XV, p. 39.

There is a single tadpole from a small stream below Watli in the neighbourhood of Choa Saidan Shah, which Dr. Annandale thinks belongs to *Bufo stomaticus*.

This species is found all over the Indo-Gangetic plain, in the western and eastern Himalayas and occasionally in those parts of Bengal and Bihar that lie south of the Ganges Valley.