A New skink from the Thal Desert of Pakistan

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Abstract. - A new skink belonging to the genus *Eumeces* is morphologically described and compared with its Pakistani congeners.

Key words: Eumeces indothalensis new species, description, Sauria, Scincidae, *Eumeces*

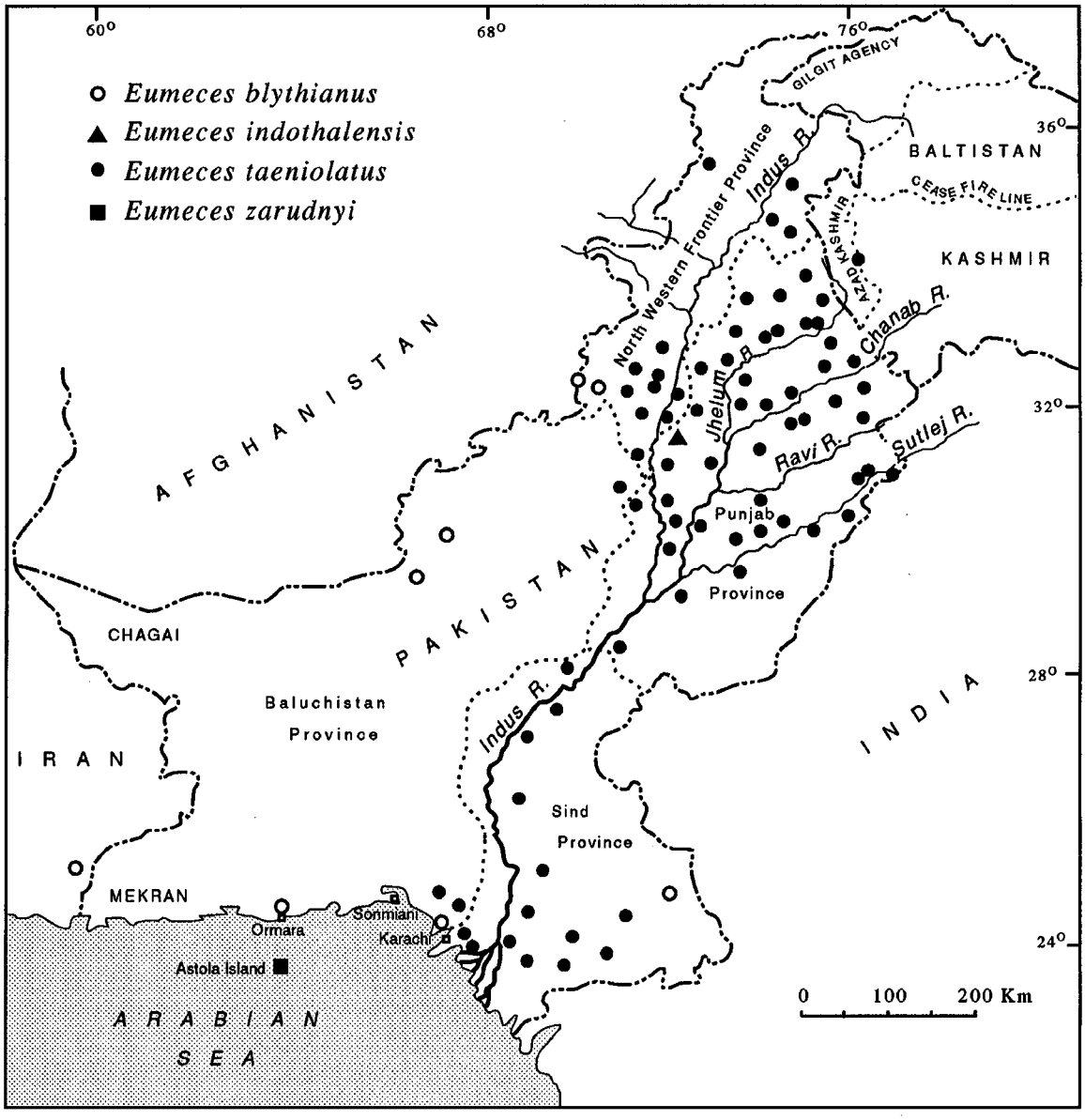

Figure1. The distribution of lizards of the genus *Eumeces* in Pakistan

Figure 2A (top) and B (bottom). *Eumeces indothalensis* new species.

Introduction

In early summer, 1984, the senior author picked up a pair of eviscerated skinks with a vivid dorsal striped pattern from a heap of *E. taeniolatus* skinks. Mr. Nazar Muhammad, an animal and plant collector for local Hakims (physicians), was eviscerating almost a sackful of living mass of writhing and struggling *Eumeces taeniolatus* skinks. He had collected the animals from the roots of common reed-bush, *Sachharum moonja*, close to village Bar Ganga, 9 km SW of Bakkhar, District Mianwali, western Punjab, Pakistan. The eviscerated lizards were to be sun-dried and sold in the market as reg mahi at Rs. 500-800 per 500 gram. Dried skinks are in great demand since the stuff is used in several aphrodisiac preparations (Khan, 1991, in press).

Laboratory examination of the striped pair of skinks proved that they belong to a new species, which is being described here.

Abbreviations used: BMNH=British Museum (Natural History), London; MCZ=Museum of Comparative Zoology, Harvard University, Cambridge, USA; MSK=Herp Laboratory, 15/6 Darul Saddar North, Rabwah 35460, Pakistan.

Taxonomic Considerations

The cosmopolitan genus *Eumeces* is represented by three species in Pakistan: *E. taeniolatus* (Blyth, 1854), *E. blythianus* (J. Anderson, 1871) and *E. zarudnyi* Nikolsky, 1899 (Minton, 1966; Mertens, 1969; Khan and Mirza, 1977) (Fig. 1). Taylor (1935) revised the genus *Eumeces* distinguishing it into several species groups: placing *E. taeniolatus* in the Taeniolatus Group, which is characterized by the presence of a postnasal, frontal in contact with interparietal, a single row of median dorsal much widened scales, dorsum golden yellowish with light and dark flecks which extend on limbs and tail. While both *E. zarudnyi* and *E. blythianus* are included in the *schneiderii* group, which has no postnasal scale, frontal is not in contact with interparietals, has a pair of median dorsal row of wider scales on dorsum with striped or unicolour pattern. However, Mertens (1946) gives *E. zarudnyi* and *E. blythianus* subspecies status of the widely distributed Saharo-Sindhian *E. schneiderii*. The new species has strong affinities with *E. schneiderii*.

Eumeces indothalensis, sp. nov.

Holotype: BMNH 1990.6 (MSK 0423.85, Fig. 2, A), a young male,from under roots of a common reed plant, *Sachharum moonja*, near village Bar Ginga, 9 Km SW of Bakkar, midwestern Punjab, Pakistan, 32°.50' N, 71° E, along west bank of Indus River, elevation 75 m, Nazar Muhammad collector, 16 July, 1984.

Paratype: (1): MSK 0422.85, (Fig. 2, B), an adult male, data as holotype, except 17 July, 1984.

Diagnosis: Medium sized skink, with dorsal pattern of 5-7 dark brown stripes separated by alternating light narrower stripes, extending on to the tail, no scattered scales of different colour on the body and limbs; nasal scale resting on first supralabial; nasal suture horizontal; no postnasal; interparietal about half the size of frontal and is of the same shape; two azygos postmentals; 52-56 scales in paired middorsal row of wider scales; posterior loreal and presuboculars longer than deep; no intercalary scales between subdigital lamellae.

Description of holotype: Rostral as high as broad,triangular, its part visible from above distinctly narrower than frontonasal, broadly truncate posteriorly. Supranasals lateral, about thrice as long as broad, reaching mesially to form a suture above nasals, the length of which equals the breadth of the rostral visible from above. Frontonasal transverse, much smaller than prefrontals, extend considerably forward between supranasals, laterally contacting anterior loreal. Prefrontals two, hexagonal, forming a median suture, contacting on sides with both loreals and first supraciliary. Frontal as long as its distance from rostral tip, abruptly truncated to a median point at anterior and posterior end, its length about twice its greatest breadth, in contact with three supraorbitals. Frontoparietals hexagonal, forming a median suture which is in line with that of prefrontals.

Interprietal longer than broad, about half the length of frontal and of the same shape, much longer than frontoparietals, abruptly truncated at both ends, posteriorly bordered by first pair of nuchals. Parietal,

Table 1. Pholidosic counts and measurements of the type series of the new species *Eumeces indothalensis* (br=broken).

Character	Paratype (MSK 022.85)	Holotype (BMNH 1990.5)
Supralabials	8	8
Infralabials	7	6
Postmentals	2	2
Chin shield	2	2
Preauricular lobes	3/4	3/3
Scales around:		
neck	32	33
axilla	42	41
midabdomen	27	26
groin	30	29
upper arm	16	17
fore arm	13	14
femur	14	14
thigh	22	22
tail base	22	24
Scales from:		
arm pit to groin	56	51
parietal to level of vent	56	52
postmental to vent	63	60
Subdigital lamellae:		
I finger	7	7
II	10	11
III	10	11
IV	11	9
V	7	7
I toe	7	7
II	10	9
III	12	13
IV	16	16
V	12	11
Measurements:		
Snout-vent length	82	57
Caudal length	17 br	40 br
axilla to groin	45	30
Head length	17	13

longer than broad, produced anterolaterally to contact the fourth postocular. A single pair of much broad nuchals, meeting at the posterior pointed tip of interparietal, an azygos nuchal on left side. Nasal slightly longer than broad, lies exactly on first supralabial not touching second, nasal suture horizontal, passing above naris, meeting rostral at its midlateral side, lower nasal larger bears major part of postero-lateral naris which lies posterior to nasorostral suture. Anterior loreal rectangular, oblique, about thrice as long as broad, higher than posterior, touching prefrontal, posterior loreal longer than high narrowing posteriorly to come in contact broad, forms a continuous subocular series with 8 postsuboculars, fifth is broadest, seventh longest; second presubocular longer than broad, smaller than anterior. A distinct small triangular preocular with two posterior smaller ones form a series with several more or less longer scales extending on

to the posterior of eye, separating supraciliaries from pelpebral scales.

A series of 7 supraciliaries, first largest, a little smaller than first supraocular, extending on to head top to contact with prefrontal, second longest, while seventh about as high as first but half of its size. A pair of small postoculars and three oblique rows of granular scales touching lower palpebrals. Supraoculars 4, first three in contact with frontal, parietal separates fourth from upper secondary temporal. A single primary temporal, quadrangular, oblique; secondary temporals two, upper as broad as parietal, lower vertical, produced anteriorly to touch primary temporal. Two tertiary temporals, upper smaller, lower vertical, about twice as long as broad.

Eight supralabials, first five anterior to eye, sixth subocular about twice as long as high, first smallest, subtriangular, narrower along oral orifice, 7th and 8th subequal and largest, 8th supralabial separated from ear by four scales occupying a space equaling the width of 8th supralabial. A slightly distinct preocular from pelpebral scales. Ear opening vertical, oval, preauricular lobes 3/3, upper two broad reaching to the middle of the auditory meatus, third very small. Mental scale broader than rostral. A pair of azygos postmentals, first as broad and as long as mental, second about twice broader than first, mesially produced backwards between first pair of chin shields; chin shields three pairs, first in contact, second separated from each other by a scale while third by three scales. Infralabials seven, 7th largest.

Body scales smooth, polished, imbricate, regular, arranged in parallel longitudinal rows; scales of median dorsal two rows 3-4 times broader than long, 52, from parietal to the level of vent. All ventrals similar except abdominals which are slightly larger; midventrals 60, from postmental to the level of vent; 33 around neck, axilla 41; mid-abdomen 26, around groin 29 and 51 from armpit to groin.

Median dorsal pair of enlarged scales extends on the tail dorsum. At base, the tail squarish in cross section, becoming round at middle, with a very gradual taper to its pointed tip. A median ventral series of transversely enlarged subcaudals, 33 in holotype, as tail is broken. A pair of large median preanal scale surrounded anterolaterally by 8 smaller scales, overlapped later ally by the median large scales; a distinct tubercular large scale on each side of the anal slit; four postanal transverse rows of smaller scales, with a shallow transverse postanal pit; 22 scales round the tail base just posterior to the lateral anal tubercular scale.

Limbs short, anterior when stretched forward claws reaching to eye, posterior reaching to the level of mid-abdomen; when thighs are bent at right angle to the body, toes freely overlap. Limbs with smooth cycloid scales in parallel longitudinal rows, 17 at mid-upper arm, 14 mid-fore arm, mid-thigh 22 and 14 rows scales, no intercalary scales. Claws strong with a basal solid part and long sharp broader tip.

Color (in formalin): Seven vivid dark brown longitudinal stripes on body: a single median dorsal starts from behind inter parietal and extends to the level of vent; second dorsal, paired, from behind parietals to the level of vent, join each other at the level of vent, do not extend on tail; third pair, from behind eye extends laterally to groin than along lateroventral side of tail; fourth pair from behind ear above shoulder to groin. The dark brown stripes separated from each other by narrower lighter stripes, making the pattern distinct. Head uniform brownish, lips, chin and ventrum light yellowish. Measurements (in mm): Snout vent length (SVL) 57, tail length (TL) 40 (broken), snout to eye 4, snout to ear 13 snout to fore limb 21, axilla to groin 30, head length 13, head breadth 9.

Variation: Table 1 summarizes pholidosic and measurement variations in the type series. Both specimen have broken tails, MSK 0422.84 after 11th subcaudal while holotype after 33rd. Snout region of MSK 0422.84 is injured, not allowing detailed morphological study. A part differences in snout-vent length and some minor differences in scale counts the type series is consistent in other pholidosic characteristics, however, MSK 0422.84 has 9 stripes on dorsum, while there are seven in holotype.

Head uniform brownish in both specimens, however, supralabials and preauricular lobules are with brownish specks in the paratype.

Etymology: The name *indothalensis* refers to the part of the Thal Desert lying on the western bank of Indus River, northwestern Punjab, Pakistan, from where the new species was collected.

Comparison: According to the collector, Mr. Nazar Muhammad, *Eumeces taeniolatus* is sympatric with the new species in the type locality and is much more common. *E. taeniolatus* differs from the new species in having a postnasal, single row of broadened median dorsals, frontal in contact with interparietal, dorsum pale grey to bronze, speckled with creamy specks, three dark brown stripes on dorsum with pale specks, tail and limbs similarly speckled. On the other hand absence of postnasal scale, median dorsal double row of broadened scales, a pair of azygos postmentals and separation of frontal from interparietal warrant inclusion of the new species in the *Schneiderii* Group (Taylor, 1935).

Table 2. Comparison of pholidosic and measurement data of *Eumeces indothalensis* new species with its congeners; br=broken. (Data except of type series and *E.zarudnyi* from Taylor, 1935. Data for *E. zarudnyi* partially through courtesy Dr. Rosaldo [per. comm.] for material in Museum of Comparative Zoology collected by Loveridge [1959] from Balochistan).

Character	*E. indothalensis*	*E. schneiderii*	*E. blythianus*	*E.zarudnyi*	*E. pavimentatus*	*E. princeps*
Postmental	2	2	1	2	2	2
Infralabials	6-7	8	6-7		7	5-6
Supraciliaries	7	6	7-8		6	7
Preauricular lobes	3-4	3	4	5-6	4	4
Nuchals	1-1		3-3			
Scale rows at:						
Neck	32-33	27			27	28
Chest (Axillary)	41-42	30				34
Mid-abdomen	26-27	24	30	26	24	26
Groin	29-30					
Base of Tail	22-24				19	20
Mid upper-arm	16-17					
Mid fore-arm	13-14				17	
Mid thigh	22					
Mid femur	14					
Scale counts:						
Median dorsals	52-56	66	60	57		64
Median ventrals	60-63					
Axilla to groin	51-56					
Preanals	9				8	
Subdigital lamellae						
I finger	6-7	6			6	5
II	9	9			9	8
III	10-11	10			11	10
IV	11	12			10	12
V	7	8			7	6
I toe	6-7	5			6	5
II	9-10	10			9	8
III	13	13			9	10
IV	16-17	16			16	14
V	11-12	10			9	9
Measurements						
snout-vent	55-60	90	111	115	79-136	125
Tail	94-259	150	236	112	148	193br
Axilla to groin	30-45	65-81				
Head length	13-17	18-23	15		19-21	18.2
Head width	9-11	16-23		20	16-17	15

Table 2 summarizes comparison of the new species, *E. indothalensis* with its congeners of the *Schneiderii* Group: *E. blythianus* (Anderson) known from Punjab, differs from the new species in having a single postmental, 30 scales round midbody, 50-60 scales from occiput to above anus, 3 pairs of nuchals. Taylor (1935, Plate 6) illustrates *E. blythianus* (BMNH 98.7.12.1) from Afridi country (Waziristan, southern borderline of N.W.F.P. with Afghanistan, similarly Finn (1898) has also reported it from the area. Taylor's photograph shows dorsal pattern of longitudinal stripes on olive-brown dorsum separated by narrower light stripes exactly matching with the dorsal pattern of the new species (Fig. 2,A,B). A similar striped young *E. blythianus* from Karachi (Minton, 1966, plate 19, 2), is reported to have unicolour pink adult phase (Fig. 2). Mertens (1969) reports similar lizards from Astola Island off the Karachi coast. A pinkish unicolour skink has been reported from Sheikh Manda near Quetta, Balochistan by Khan and Ahmed (1987). *E. princeps* also has a striped adult pattern, however, its juveniles are patternless (Mertens, 1969).

The second species, *E. zarudnyi*, nikolsky, from southwestern Iran and southern Balochistan (Loveridge, 1959), differs from the new species in having 5-6 preauricular lobules, wider head, and uniform grey dorsum. While the wide ranging Saharo-Sindhian skink *E. schneiderii* which is known from Mekran to Waziristan, differs from *E. indothalensis* in having 66 scales in the mid dorsal row, 24 scales around midbody, subocular as wide as high, dorsum brown or olive, median dorsal rows shaded dark with light spots, a very dim dorsolateral line and spotted hind limbs.

The new species, *Eumeces indothalensis*, is unique among Pakistani eumecid lizards in having the nasal scale resting exactly on the first supralabial which is triangular and does not touch second labial; horizontal nasal suture which passes above nostril, the nostril lies posterior to rostral-labial suture; dorsal part of rostral much narrower than frontonasal; subocular longer than broad, its ocular side longer than labial side; second loreal longer than broad; presubocular much longer than broad; interparietal as long as parietals, exactly of the shape of frontal but half of its size; three preauricular lobules, upper two much broader than long, third much smaller; 1-2 pairs of nuchals with an additional azygos nuchal; no intercalary scales between subdigital lamellae; dorsum with seven dark brown stripes, which increase to nine in adult (paratype) rather to disappear and become unicolour as in *E. blythianus* (Minton, 1966).

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