

On the taxonomic status of *Eurylepis poonaensis* (Squamata: Scincidae): resolving a long-standing conundrum

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Abstract. The scincid genus *Eurylepis* was split off from the cosmopolitan genus *Eumeces* sensu lato, with *Eurylepis taeniolatus* being the type species, which is taxonomically poorly understood. The other nominate species in this genus is *Eurylepis poonaensis*, which was known only from its type locality and original description, and is the only known member of the subfamily Scincinae from near the Western Ghats. However, earlier studies raised doubts about its specific validity, often without examining type or other specimens. We collected fresh samples of this species from the type locality and nearby areas. Based on the examination of the holotype and the new material, we provide a detailed redescription of *E. poonaensis*, additional data on its skeletal structure, habitat, and natural history. We also provide a detailed redescription of *E. taeniolatus* based on the holotype to avoid further taxonomic ambiguity.

Key words. Taxonomic resolution, species redescription, *Eurylepis taeniolatus*, India.

Introduction

Members of the scincid genus *Eurylepis* were earlier placed in the cosmopolitan genus *Eumeces* sensu lato (SMITH 1935). Recently GRIFFITH et al. (2000) extracted from it the genus *Eurylepis* BLYTH, 1854, largely based on morphological differences along with karyotype (IVANOV & BODGANOV 1975) and included in it two nominate species, *E. taeniolatus* BLYTH, 1854 and *E. poonaensis* SHARMA, 1970. *Eurylepis taeniolatus* is the type species of the genus *Eurylepis* and presently known from northwestern/western Saudi Arabia, southern Turkmenistan, southern Yemen, northeastern Iran, Iraq, Jordan, Afghanistan, Pakistan, and India (Kashmir, Himachal Pradesh, Punjab, Rajasthan, Gujarat) (UETZ & HOŠEK 2015). Subsequent to the original description, publications on this species were mostly reports or redescrptions of *E. taeniolatus* (JERDON 1870, ANDERSON 1871, STOLICZKA 1872) or descriptions of synonyms (THEOBALD 1866, BOULENGER 1887). The only comprehensive analysis of this taxon was that by TAYLOR (1936), who provided a detailed taxonomic history and description based on five specimens that were not part of the type series. However, the specimens he studied differed considerably from the type, suggesting that *E. taeniolatus* was probably a species

complex and warranting further investigation (GRIFFITH et al. 2000).

For its part, *Eurylepis poonaensis* (SHARMA, 1970) was described (as a member of the genus *Eumeces* WIEGMANN, 1834) based on a single female specimen collected by B. K. Tikader from Katrajghat, ca. 27 kilometres south of Pune, Maharashtra, at an altitude of 564 m a.s.l. This species was until recently only known from the original description and type locality, with some anecdotal reports from secondary sources (SRINIVASULU et al. 2014: 38) from Saswad, Chatursinghi (probably Chaturshringi), Katraj in Pune District, Jaijuri (probably Jejuri) in Satara District, which expanded its known distributional range to 1,324 km² (SRINIVASULU et al. 2014). However, these secondary reports were based on personal communications, without any voucher specimens. Although SHARMA (1970) provided considerable morphological and meristic data for *E. poonaensis*, it was still based only on the female holotype. Information on its habitat, natural history, morphological variation, and distinctive features is lacking. DAS (1994) included *E. poonaensis* in his checklist of reptiles of South Asia and suggested that its distribution was restricted to the Deccan region of India. However, DAS (1997) later erroneously omitted this valid taxon (VENUGOPAL 2010). Interestingly, DAS

et al. (1998) mentioned without justification that *E. poonaensis* as a subjective synonym of *E. taeniolatus* in their catalogue of reptile types in the collections of the Zoological Survey of India. GRIFFITH et al. (2000) included this species as valid, although M.S. Khan suggested – without sufficient clarification – that *E. poonaensis* could be a junior synonym of *E. taeniolatus* (fide GRIFFITH et al. 2000). They (GRIFFITH et al. 2000) also recommended further investigation in this group, quoting TAYLOR (1936: 110) that *E. taeniolatus* consists of more than one species.

Thus, *Eurylepis* is currently represented by two species, *E. poonaensis* and *E. taeniolatus* (SCHMITZ et al. 2004, VENUGOPAL 2010, UETZ & HOŠEK 2017). Recently, new specimens of *E. poonaensis* were collected from near the type locality and near the Gangapur Dam area in Nashik District, Maharashtra, India. They were deposited in the research collections of the National Centre for Biological Sciences (NCBS, Bangalore), Bombay Natural History Society (BNHS, Mumbai), and Centre for Ecological Sciences (CES, Bangalore). Here, we provide detailed redescriptions of *E. poonaensis* and *E. taeniolatus* based on their respective holotypes, along with variation and additional information from newly collected specimens in order to stabilize the diagnoses of these taxa.

Material and methods

We conducted fieldwork during September–October of 2013 around the type locality of *E. poonaensis*. Explorations were carried out at low- to mid-altitudes across various habitats, including grasslands, scrub and dry deciduous forests (the typical habitat at the type locality), by searching in leaf litter and upturning rocks and logs from 08.00–12.00 h and again from 16.00–18.00 h. We collected one specimen of *E. poonaensis* from Katrajghat (the type locality) and two specimens near Gangapur Dam (639 m a.s.l.) near Nashik on 27 September 2013. This species is large and visually attractive, for which reason we refrain from providing precise coordinates of the collection localities in an effort to protect it from illegal commercial collection by pet traders.

The following measurements were taken with Mitutoyo digital callipers (to the nearest 0.1 mm): snout–vent length (SVL; from tip of snout to vent), trunk length (TRL; distance from axilla to groin measured from posterior edge of forelimb insertion to anterior edge of hindlimb insertion), body width (BW; maximum width of body), crus length (CL; from base of heel to knee); tail length (TL; from vent to tip of tail), tail width (TW; measured at widest point of tail); head length (HL; distance between anterior margin of ear opening and snout-tip), head width (HW; maximum width of head), head height (HH; maximum height of head, from occiput to underside of jaws), forearm length (FL; from base of palm to elbow); orbital diameter (OD; greatest diameter of orbit), naris to eye distance (NE; distance between anterior most point of eye and nostril), snout to eye distance (SE; distance between anteriormost point of eye and tip of snout), eye to ear dis-

tance (EE; distance from anterior edge of ear opening to posterior corner of eye), internarial distance (IN; distance between nares), interorbital distance (IO; shortest distance between left and right supraocular scale rows). The following scale counts and external observations of morphology were made using a Leica S6E™ microscope: Scale rows (SR-M; row of scales at midbody), enlarged dorsals (EDS; number of enlarged dorsal scales counted in a longitudinal series from behind parietals to the level of hind limb insertion, including nuchals), lamellae (L Manus – lamellae on fingers of left hand; R Manus – lamellae on fingers of right hand; L Pes – lamellae on toes of left foot; R Pes – lamellae on toes of right foot), labials (SL-L; supralabials on left side – counted at angle of jaw; SL-R; supralabials on right side – counted at angle of jaw, IL-L; infralabials on left side – counted at angle of jaw; IL-R; infralabials on right side – counted at angle of jaw). The colour nomenclature follows en.wikipedia.org/wiki/List_of_colours.

Osteology: We used one specimen of *E. poonaensis* (CES 13/803) as a representative to describe its osteological characters. It was clear-stained following protocols from HANKEN & WASSERSUG (1981). Data on skeletal characters follow standard nomenclature (ROMER 1956, GRIFFITH et al. 2000). We compared selected osteological characters as specified by GRIFFITH et al. (2000).

Museum acronyms are as follows: BNHS (Bombay Natural History Society), CES (Centre for Ecological Sciences), NCBS (National Centre for Biological Sciences), and ZSIK (Zoological Survey of India, Kolkata).

Results

We provide a generic diagnosis of *Eurylepis* based on GRIFFITH et al. (2000), followed by detailed redescriptions of the two extant nominate species in this genus.

Eurylepis BLYTH, 1854

Eumeces WIEGMANN, 1834 (in part).

Eurylepis BLYTH, 1854. Type-species: *E. taeniolatus* BLYTH, 1854.

Plestiodon THEOBALD, 1866, by synonymy of *E. taeniolatus*

Mabouia ANDERSON, 1871 (in part), by synonymy of *E. taeniolatus*

Diagnosis: Elongated, 35 or more presacral vertebrae (as in many other scincid groups). Limbs relatively slender, lamellae not expanded. Head somewhat conical, dorsal face convex in lateral view, parietal bone with clear lateral indentations and supratemporal fontanel open. Sexual dimorphism in head proportions not distinct. Scales shiny, separated by shallow sutures. Two loreals, followed by one or two presuboculars. Postnasal scales present. Palpebral scales and superciliaries not separated by groove. Four or five pairs of nuchal scales, followed by several pairs of broadened mid-dorsal scales and a row of broad fused mid-dorsal scales. Large medial preanal scales overlap a small lateral pair. Ear lobules conspicuous, but not covering ear opening. Colour pattern consists of grey-brown

background, with pale, broad, dorsolateral stripes, more distinct anteriorly, brown rectangular spots dominating posteriorly (fide GRIFFITH et al. 2000).

Redescription of *Eurylepis poonaensis* (SHARMA, 1970)

***Eurylepis poonaensis* (SHARMA, 1970)**
(Figs 1–6)

Eumeces poonaensis SHARMA, 1970

Eurylepis poonaensis GRIFFITH et al. 2000

Eurylepis poonaensis SCHMITZ et al. 2004

Holotype: ZSIK 21159. Type locality: Katrajghat, Poona (= Pune), Maharashtra, India.

Additional material: BNHS 2283, NCBS-AQ010, CES 13/ 804

Generic allocation: The species is placed in the genus *Eurylepis* BLYTH, 1854 following GRIFFITH et al. (2000).

Diagnosis: This species is characterized by the following combination of characters: dorsal scales heterogeneous, composed of smaller cycloid, imbricate scales laterally and a median longitudinal (vertebral) series of 84 to 86 enlarged, greatly elongated scales including nuchals; 23 rows of scales at midbody; a single large postnasal and 2 loreals; 7 supralabials, the 5th and 6th forming the lower border of eye, the 7th largest; 6 to 7 infralabials; 3rd toe longer than 4th, with 9 to 11 lamellae under 3rd toe, and 8 to 9 under the 4th; tail longer than SVL.

This species is most similar to *E. taeniolatus*, but differs from it with respect to (*E. taeniolatus* versus *E. poonaensis*): dorsal scalation (with a vertebral series of 75 enlarged, greatly elongated scales including nuchals versus 84–86); length of 3rd toe (shorter than 4th versus longer); midbody scale rows (21 versus 23); number of lamellae under 4th toe (13 to 14 versus 8 to 9); shape of frontal (hexagonal with straight posterior margin, barely touching interparietal versus roughly hexagonal with rounded posterior margin, widely touching interparietal).

External morphology: Holotype, an adult female in good state of preservation, but in curled-up position, with the left forelimb bent backwards, and there is an incision of 54 mm running from just above the cloaca towards the chest, which is an artefact of the preservation technique (Fig. 1). SVL 117.00 mm; snout acute (IN/IO ratio 0.41), slightly projecting beyond lower jaws; nostril circular, laterally orientated, situated closer to the snout tip than to the eye (NE/SE ratio 0.74); head longer than wide (HL/HW 1.61). Body slender (BW/SVL ratio 0.1); head not distinct from neck, trunk elongated (TRL/SVL ratio 0.67). Regenerated tail slightly shorter than SVL (TL/SVL ratio 0.73). Forelimbs and hindlimbs relatively poorly developed and stout; forearm very short (FL/SVL ratio 0.06); tibia very short (CL/SVL ratio 0.06); digits moderately long, slender and ending with a distinctly visible, sharp, thin, slightly

curved, and pointed claw; subdigital lamellae smooth on manus and distinctly keeled on pes, entire; number of subdigital lamellae including claw sheath, ** denotes damaged digit: left manus 7-9-11-11-7; right manus 7-5**-11-11-8; left pes 5-9-10-9-5; right pes 5-9-10-9-5. Relative lengths of digits (measurements in mm in parentheses): V (4.5) < I (5.6) < II (6.3) < IV (6.4) < III (6.5) (left manus); V (3.2) < I (3.6) < II (4.9) < IV (5.7) < III (6.1) (left pes).

Rostral wider (3.2 mm) than high (2.6 mm), in contact with first supralabials, nasals and supranasals. Paired supranasals widely in contact medially, and widely in contact with slightly smaller postnasals laterally. Frontonasal roughly octagonal, wider than long, widely in contact with postnasal and anterior loreal laterally. A pair of prefrontals touching each other medially, anteriorly in wide contact with frontonasal, and laterally, widely touching anterior loreal and weakly so the posterior loreal and the first and second anterior supraoculars. Frontal roughly hexagonal with rounded posterior margin and elongated, in wide contact with second, third and fourth supraoculars laterally, in wide contact with frontoparietals and interparietal posteriorly. Frontoparietals widely in contact with parietals, interparietal posterolaterally and frontal and 5th supraocular, anterolaterally in contact with parietals. Interparietal roughly pentagonal and acorn-shaped, posteriorly in contact with nuchals; parietal eye indistinct. Parietal anteriorly in contact with frontoparietal and two posterior supraoculars, laterally touching upper posterior temporal. Six supraoculars, with the 6th being slightly smaller than all others (Fig. 2).

Nostril circular, in the centre of nasal. Postnasals large, slightly smaller than the anterior loreal, bordered by supranasal, frontonasal, anterior loreal, supralabials I and II. Anterior and posterior loreals roughly pentagonal, the latter



Figure 1. Female holotype of *Eurylepis poonaensis* in preservative. Scale bar = 10 mm. Photograph by C. MURTHY, Zoological Survey of India, Kolkata.

wider than the former, loreals bordered by postnasal, frontonasal, prefrontal, 1st supraocular, preoculars and supralabials II and III. Two preoculars, the upper one smaller than the lower one, one presubocular, which is slightly larger than the upper preocular. Seven supralabials, gradually increasing in size, with the 7th being the largest, and the 5th and 6th forming the lower border of the eyelid. Two moderately enlarged scales behind eye form the postoculars. Two anterior and two posterior temporals, the upper ones smaller than their lower counterparts, all smooth and cycloid (Fig. 3). Seven infralabials. Mental scale wider than long, its posterior margin straight. Two postmentals, anterior postmental widely in contact with infralabial I on both sides, posterior postmental widely in contact with infralabial II and barely with infralabial I on both sides. First pair of adjoining chin shields barely touching infralabial II, but strongly III on both sides. First pair of chin shields in contact medially; second pair separated by a smaller cycloid scale.

Dorsal scalation heterogeneous, composed of smaller cycloid, imbricate scales laterally and a vertebral series of enlarged, greatly elongated scales, starting from behind parietals and interparietal and ending at level of groin, roughly two to four times larger than adjoining dorsal scales. The vertebral series is composed of 84 scales, of which the anterior 16, including 4 nuchals, are paired and the remaining 68 are single. 23 rows of scales around midbody. Scales on lateral aspects of neck and limbs much smaller and more or less similar in shape to those on flanks. Ventral scales similar in size and shape to those on flanks, the midventral series is composed of 85 scales when counted from chin shield to cloaca. Tail regenerated, scales on original portion of tail cycloid, smooth, imbricate; those of the vertebral series are smaller in size, becoming larger laterally, with subcaudals being largest (twice the size of vertebral row) and greatly elongated; a similar pattern is observed on regenerated portion of tail. Scales in the palmar and plantar regions much smaller than the associated lamellae and underside of limbs, rounded or slightly elongated, smooth, and sub-imbricate.

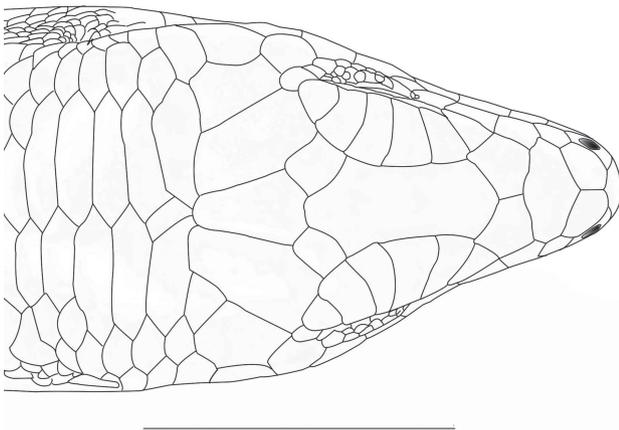


Figure 2. Line drawing showing arrangement of scales on dorsal aspect of head of the female holotype of *Eurylepis poonaensis*. Scale bar = 5 mm.

Colour in preservative: Snout including rostral, nasal and postnasal pale brown. First three supralabials with a longitudinal streak of light brown. Fourth supralabial with an off-white spot. Sixth supralabial off-white, bleeding dorsally towards the postocular. Anterior lobules of the ear opening within an off-white patch in the ventral region of the ear opening. Head scales antique bronze in colour (HEX#665D1E). Parietals with two off-white spots each. Frontal with a single off-white spot at the right margin. Streaks of off-white on the flanks, continuing dorsally and breaking up to form fused spots on the dorsals. Underside of the body completely off-white to the anal scales. The dorsal side of both the fore- and hindlimbs interspersed with off-white spots while the underside is completely off-white. Digits of both the fore- and hindlimbs olive-brown while the claws are translucent and slightly orange. Dorsal side of the tail olive-brown with interspersed off-white spots. Caudal scales from the middle to the tip flaked off, revealing olive-brown skin with the scale boundaries visible in a darker shade. Tip of the tail pale brown (Fig. 1).

Variation and additional information from freshly collected samples: Mensural data for the holotype and additional material are given in Table 1. There are three specimens, ranging in SVL from 113.0 to at least 139.0 mm. Length of regenerated tail is shorter in the holotype, but it is 140.7 mm in BNHS 2283 and 187 mm in NCBS-AQ010. All specimens have a longitudinal series of enlarged vertebral scales. In BNHS 2283, the anteriormost 12 scales are paired and the remaining 74 single; in NCBS-AQ010, the anteriormost 13 rows are paired, followed by four single and three paired, and the remaining 66 scales are single. In BNHS 2283, the frontonasal weakly touches the postnasal and strongly the anterior loreal laterally; a pair of medially separated prefrontals is in strong contact with the frontonasal anterolaterally, strongly touching the anterior and posterior loreals, and the first and second anterior supraoculars.

Colour in life: Although fossorial, this is a colourful skink (Fig. 4). Snout including the rostral, supralabial I, nasal, postnasal and supranasal amber in colour (HEX #FFBF00).

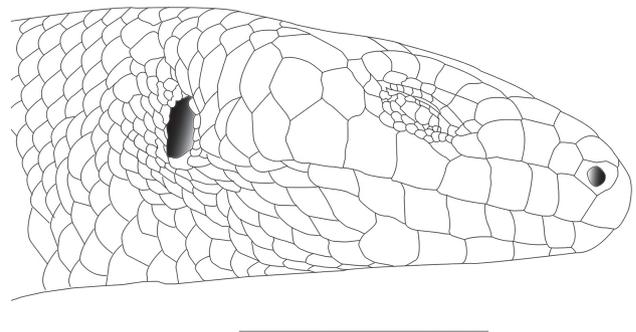


Figure 3. Line drawing showing arrangement of scales on the right side of the head of the female holotype of *Eurylepis poonaensis*. Scale bar = 5 mm.

Taxonomic validity and redescription of *Eurylepis poonaensis*

Table 1. Measurements (in mm) and scale counts for type series and specimens of *Eurylepis taeniolatus* and *E. poonaensis*. SVL – snout–vent length; TRL – trunk length; BW – body width; CL – crus length; TL – tail length; HL – head length; HW – head width; HH – head height; FL – forearm length; OD – orbital diameter; NE – nares-to-eye distance; SE – snout-to-eye distance; EE – eye-to-eye distance; IN – internarial distance; IO – interorbital distance; SR-M – row of scales at midbody; EDS – number of enlarged dorsal scales; L Manus – lamellae under fingers of left hand; R Manus – lamellae under fingers of right hand; L Pes – lamellae under toes of left foot; R Pes – lamellae under toes of right foot; SL-L – supralabials on left side; SL-R – supralabials on right side; IL-L – infralabials on left side; IL-R – infralabials on right side. * tail incomplete; ** finger damaged. Numbers in parenthesis indicate numbers of poreless scales separating femoral pore series, number of notched or undivided lamellae, midorbital supralabial.

Species	<i>E. taeniolatus</i>		<i>E. poonaensis</i>	
	ZSI 2382	ZSI 21159	NCBS AQ010	BNHS 2283
SVL	78.7	117	139	113.5
Trl	49.5	79	95.5	85.6
Bw	11.2	12	16	12
Cl	7	7.6	8.2	7.6
Tl	118.7	86*	187	140.7*
Hl	12.5	18	18.2	17.5
Hw	8.5	11.2	12.2	11.2
Hh	7	9	10.9	9.5
Fl	6.5	7.1	8.1	8.1
Od	3.1	3.9	3.5	3.9
Ne	3.7	5.6	5.5	4.8
Se	5.5	7.5	8	7.6
Ee	5	7.7	7.8	7.2
In	2	2.5	3	2.6
Io	5	6.1	6.3	6.3
Sr-M	21	23	23	23
Eds	75	84	86	85
L Manus	5-10-11-11-6	7-9-11-11-7	6-9-11-10-8	7-10-10-10-8
R Manus	5-10-11-11-7	7-5**-11-11-8	6-8-11-9-7	6-9-11-11-9
L Pes	5-8-12-14-7	5-9-10-9-5	5-7-9-8-5	6-8-11-9-6
R Pes	5-8-12-14-8	5-9-10-9-5	5-9-9-8-6	6-10-11-9-6
SL-L	7	7	7	7
SL-R	7	7	7	6
IL-L	7	7	7	7
IL-R	7	7	6	6

Frontonasal and dorsals silver (HEX #CoCoCo). Frontal with two whitish spots, one in the centre and the second one on the posterior edge. Posterior halves of the fourth and fifth infralabials lemon-yellow (HEX #FFF44F) with this colour continuing towards the orbit through the upper adjacent supralabial. Subsequently, after a gap of every three scales, streaks of lemon-yellow rising from the lateral side of the body towards the dorsum where they are broken up into white spots edged with yellow. The lobules at the anterior side of the ear opening are also lemon-yellow. All scales on the dorsum and flanks, starting from the nuchals to down the length of the tail with blackish borders. Scales on the forelimbs silver with intermittently arranged white and yellow spots. Ventral scales from throat to preanal region lemon-yellow. Subcaudals amber in colour to almost half the length of the tail, followed by amber-coloured bands at intervals of two scales wide. Intermittent black spots throughout the length of the tail.



Figure 4. *Eurylepis poonaensis* (BNHS 2283) in life. Photograph by V. GIRI.

Osteology: Skull laterally compressed, dorsal surface convex, triangular anteriorly (between premaxilla and behind orbit) and with a roughly square shape behind orbit and quadrate. Orbit large and oval in shape; squamosal bone long, forming the square shape in the posterior portion of skull along with postorbital (Fig. 5A). Maxilla has 15 teeth, most of which with a flat apex, but some are pointed. Premaxilla short and narrow, frontal long and narrow (Fig. 5B). Parietal constricted at its midpoint, with a broad supratemporal fontanel. Supratemporal fontanel broad; postfrontal and postorbital bones contact the parietal bone only anteriorly. The hyoid is composed of six parts (Fig. 5C): 1. The entoglossal process; 2. The paired ceratohyals; 3. Ceratobranchial I; 4. Ceratobranchial II; 5. The paired epibranchials articulated posterior to ceratobranchial I; 6. All these structures originate from a central body called the hyoid body. Ceratobranchial I is ~25% of the length of ceratobranchial II. 41 presacral vertebrae (Fig. 6A); 11 of the ribs are connected to the sternal segments of the ribs and the mesosternum (Fig. 6B); all trunk vertebrae have ribs of similar lengths, except the three posterior to presacral vertebrae, which are shorter; sacral ribs are one quarter the size of the smallest presacral vertebrae (Fig. 6D). 58 caudal verte-

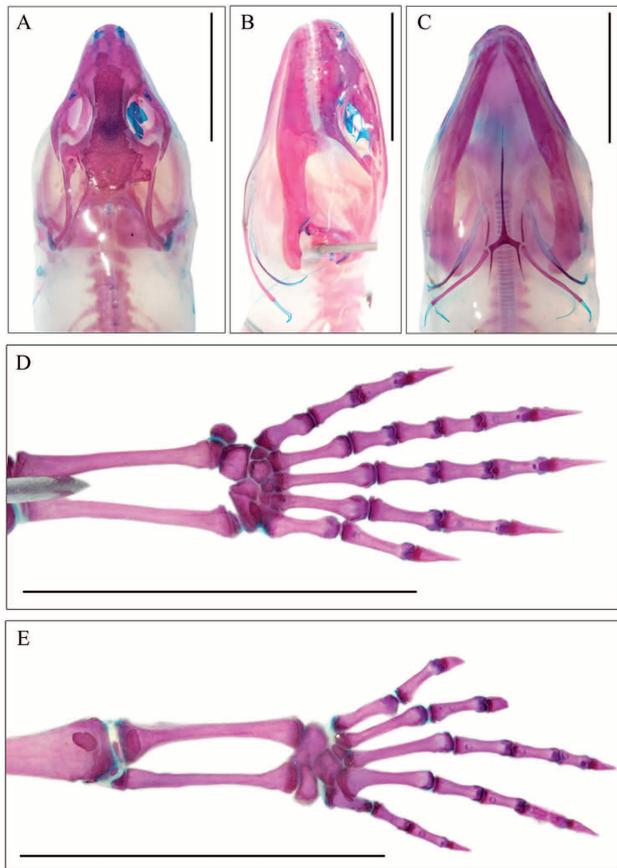


Figure 5. Cleared and stained specimen of *Eurylepis poonaensis* (CES 13/ 803): dorsal (A), left lateral (B), ventral (C) views of head, left manus (D), and left pes (E). Scale bar = 5 mm. Photograph by V. DEEPAK.

brae. The forelimb is composed of a humerus with well-developed proximal and distal ends, ulna, and radius, the latter two of which are similar in thickness, and a series of carpals and phalanges; phalanges on manus 2:3:4:5:3 (Fig. 5D). Femur well developed; tibia and fibula are relatively shorter than femur; phalanges on pes 2:2:4:4:3 (Fig. 5E).

Distribution, habitat and habits: Based on the type locality and secondary reports from Saswad, Chatursinghi, Katraj (Pune district), and Jejuri (Satara district), the distributional range of this species has been estimated to be 1,324 km² (SRINIVASULU et al. 2014). This may be misleading since this is based on limited sampling effort, small sample size, without proper assessments of populations and the ecological requirements of this species. During our study, we found specimens at the type locality on degraded hill slopes with scanty vegetation and plantations and near Nashik, in open grasslands with red soil interspersed with small rocky outcrops (Fig. 7). Although these landscapes appear unsuitable for fossorial reptiles, *E. poonaensis* appears to be successfully utilizing them. It is reasonable to assume that the range is much wider, although we are unable to estimate it with any confidence at this point of time.

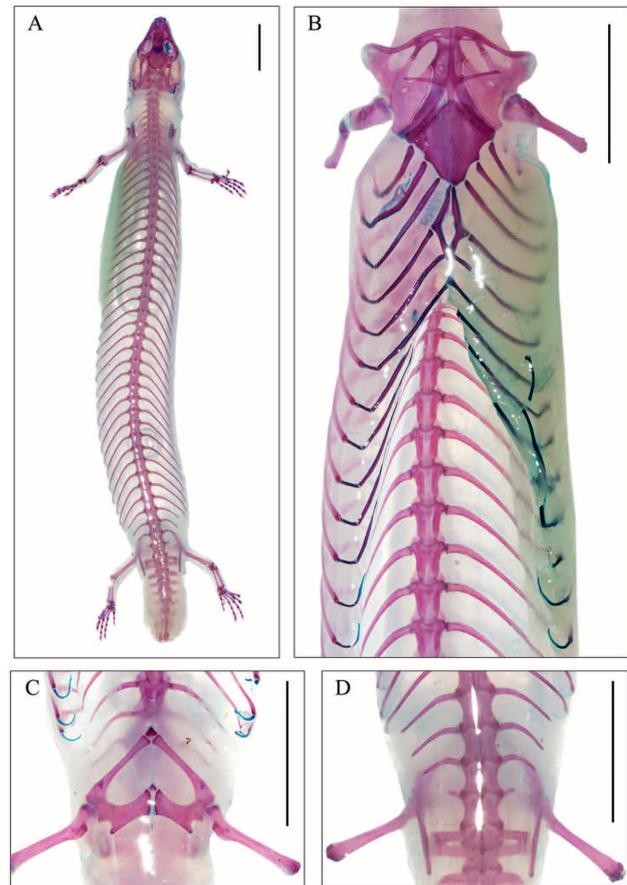


Figure 6. Cleared and stained specimen of *Eurylepis poonaensis* (CES 13/ 803): dorsal view (A), sacral and part of abdominal region (B), pelvic dorsal (C), and pelvic ventral regions (D). Scale bar = 5 mm. Photograph by V. DEEPAK.



Figure 7. Habitat of *Eurylepis poonaensis* near Gangapur Dam, Nashik, Maharashtra. Photograph by V. DEEPAK.

The habitat requirements also need to be studied carefully based on confirmed sightings and further collections.

Near Nashik, the first individual was located in a crevice where it hid most of its body under a large rock while the tail remained visible. The second individual was found under a rock within two metres from the first. Both these specimens were found at approximately 11.00 h at 639 m a.s.l. On capture, the specimens appeared docile, unlike other Indian skinks. They moved with their forelimbs adpressed when released on leaf litter or soil for the purpose of taking photographs. The animals used their tails in a peculiar manner. While we were handling them, they would tightly curl their tails around our fingers, sometimes almost hanging freely from their tails. Whether this was to avoid falling or not is unknown, but it is a strange behaviour for a fossorial skink. This is especially unexpected considering that its habitat is dominated by low grass cover and hardly any tall vegetation where such a prehensile use of the tail may be advantageous.

Redescription of *Eurylepis taeniolatus* BLYTH, 1854

Eurylepis taeniolatus BLYTH, 1854 (Figs 8–10)

Eumeces taeniolatus STOLICZKA, 1872

Mabouia taeniolata ANDERSON, 1871

Plestiodon scutatus THEOBALD, 1868

Eumeces scutatus BOULENGER, 1887

Eumeces taeniolatus SMITH 1935

Eumeces taeniolatus TAYLOR 1936

Eurylepis taeniolatus GRIFFITH et al. 2000

Eurylepis taeniolatus SCHMITZ et al. 2004

Holotype: ZSI 2382. Type locality 'Alpine Punjab'.

Diagnosis: This species is characterized by the following combination of characters: dorsal scalation heterogeneous, composed of smaller cycloid, imbricate scales laterally and a vertebral series of 75 enlarged, greatly elongated

scales including nuchals; 21 rows of scales at midbody; a single large postnasal and 2 loreals; 7 supralabials, with the 5th and 6th forming the lower border of eye, the 7th the largest; 6 to 7 infralabials; 3rd toe is shorter than 4th, with 9 to 11 lamellae under 3rd toe and 8 to 9 under the 4th; tail longer than SVL.

External morphology: Holotype in good state of preservation, except the specimen is curved, both forelimbs are bent backwards, tail is curved towards left, incision of 21 mm running from abdomen towards chest, and the specimen is faded, an artefact of preservation (Fig. 8). SVL 78.7 mm; snout acute (IN/IO ratio 0.4), slightly projecting beyond lower jaws; nostril oval, laterally orientated, situated closer to snout tip than to eye (NE/SE ratio 0.67); head longer than wide (HL/HW 1.47). Body slender (BW/SVL ratio 0.14), head not distinct from neck, trunk elongated (TRL/SVL ratio 0.62). Tail longer than SVL (TL/SVL ratio 1.50). Fore- and hindlimbs relatively poorly developed and stout; forearm very short (FL/SVL ratio 0.08); tibia very short (CL/SVL ratio 0.08); digits moderately long, slender, and ending in a distinctly visible, sharp, thin, slightly curved, and pointed claw (Fig. 5 A); subdigital lamellae undivided, smooth on manus and distinctly keeled on pes, number of subdigital lamellae including claw sheath: left manus 5-10-11-11-6; right manus 5-10-11-11-7; left pes 5-8-12-14-7; right pes 5-8-12-13-8. Relative lengths of digits (measurements in mm in parentheses): I(3.4) < V(3.5) < II(4.6) < IV(5.3) < III(5.5) (left manus); I(2.9) < V(4.0) < II(4.2) < III(5.3) < IV (6.7) (left pes). Rostral wider (2.1 mm) than high (1.5 mm), in contact with first supralabials, nasals and supranasals. Paired supranasals widely in contact medially, widely in touch with slightly smaller postnasals laterally. Frontonasal roughly octagonal, wider than long, widely in contact with postnasal and anterior loreal laterally. A pair of prefrontals touching each other medially, anteriorly in wide contact with frontonasal, laterally widely touching anterior loreal and posterior loreal, first and second anterior supraoculars. Frontal hexagonal and elongated, in wide contact with second, third and fourth supraoculars laterally, in wide contact with frontoparietals and barely touching interparietal posteriorly. Frontoparietals widely in contact



Figure 8. Holotype of *Eurylepis taeniolatus* in preservative. Scale bar = 10 mm. Photograph by C.MURTHY.

with parietals, interparietal posterolaterally and frontal and 4th and 5th supraocular anterolaterally. Interparietal roughly pentagonal and acorn-shaped, posteriorly in contact with nuchals; parietal eye indistinct. Parietal anteriorly in contact with frontoparietal and 2 posterior supraoculars, laterally touching upper posterior temporal. Six supraoculars, the 6th slightly smaller than all others (Fig. 9).

Nostril oval, obliquely orientated, in the centre of nasal. Postnasals large, slightly smaller than the anterior loreal, bordered by supranasal, frontonasal, anterior loreal, supralabials I and II. Anterior and posterior loreals roughly pentagonal, the latter wider than the former, loreals bordered by postnasal, frontonasal, prefrontal, 1st supraocular, preoculars and supralabials II and III. Two preoculars, the upper one smaller than the lower one, and one presubocular, which is slightly larger than the upper preocular. Seven supralabials, gradually increasing in size, the 7th the largest, and the 5th and 6th forming the lower border of the eyelid. Two moderately enlarged scales behind the eye form the postoculars; they are slightly smaller than the anterior temporal. Two anterior and two posterior temporals; the upper one smaller than its counterpart, both smooth, cycloid (Fig. 10). Seven infralabials. Mental scale wider than long, its posterior margin straight. Two postmentals, anterior postmental widely in contact with infralabial I on both sides, posterior postmental widely in contact with infralabial II and barely with infralabial III on both sides. First pair of adjoining chin shields widely touching infralabials III and IV on both sides. First pair of chin shields in contact medially; second pair separated by a smaller cycloid scale.

Dorsal scalation heterogeneous, composed of smaller cycloid, imbricate scales laterally and a vertebral series of enlarged, much elongated scales, starting from behind parietals and interparietal and ending at level of groin, roughly two to four times larger than the adjoining dorsal scales. The vertebral series is composed of 75 scales, of which the anterior 11, including 4 nuchals, are paired and the remaining 64, single. 21 rows of scales around midbody.

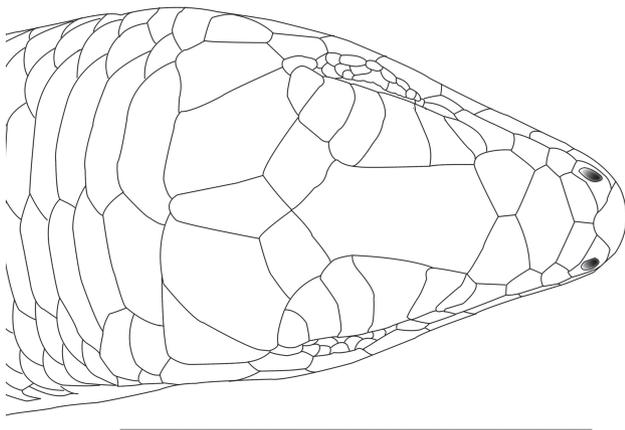


Figure 9. Line drawing showing arrangement of scales on dorsal aspect of head of the holotype of *Eurylepis taeniolatus*. Scale bar = 10 mm.

Scales on sides of neck and limbs much smaller and more or less similar in shape to those of dorsals on flank. Ventral scales similar in size and shape to those on flank, the midventral series is composed of 85 scales when counted from chin shield to cloaca. Scales on tail cycloid, smooth, imbricate; those in the vertebral series smaller in size than the others, those on the sides larger, and subcaudals largest (twice the size of vertebral row) and greatly elongated. Scales on the palmar and plantar faces much smaller than the associated lamellae and underside of limbs, rounded or slightly elongated, smooth.

Colour in preservative: The entire specimen is faded and looks uniformly off-white (Fig. 8).

Discussion

Although there has been considerable ambiguity regarding the taxonomic status of *Eurylepis poonaensis*, we have demonstrated that there are clear morphological differences between this species and *E. taeniolatus*. It is now evident that the apparent doubts raised about the validity of *E. poonaensis* were mostly due to poorly understanding its congener, *E. taeniolatus*. Most of the available information on the morphological characters of *E. taeniolatus* thus far, although provided by various authors (BLYTH 1854, THEOBALD 1866, ANDERSON 1871), was based on the same (type) specimen (TAYLOR 1936). Additionally, the distributional records of *E. taeniolatus* are largely from arid to temperate habitats whereas *E. poonaensis* is known from near the Western Ghats.

The tail is shorter than the SVL in the holotype of *Eurylepis poonaensis*, and this was one of the diagnostic characters to distinguish this species from *E. taeniolatus* as suggested in the original description (SHARMA 1970). However, the tail is regenerated in the type specimen of *E. poonaensis*, which was overlooked in its original description. The tails of the freshly collected specimens are considerably longer than their SVLs (Table 1) and thus, this character is not really diagnostic.

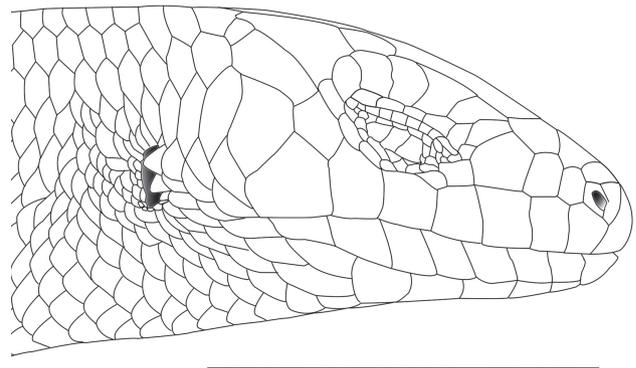


Figure 10. Line drawing showing arrangement of scales on right side of the head of the holotype of *Eurylepis taeniolatus*. Scale bar = 10 mm.

The osteological characters used by GRIFFITH et al. (2000), which we also verified in *E. poonaensis*, are synapomorphic and shared with other closely related genera (*Eumeces*, *Scincopus* and *Scincus*). In reptiles with reduced limbs, girdles (snake-like lizards and snakes) and poorly developed iliac connections (aquatic reptiles), a secondary reduction of sacral ribs is evident (ROMER 1956). Considering that *E. poonaensis* has an elongated body, it is not surprising that it has very short sacral ribs, too.

Our study suggests that *E. poonaensis* is a distinct species that is endemic to the northwestern part of the Indian peninsula. Scincines are believed to be more ancient among the three subfamilies within the family Scincidae (GREER 1970, HEDGES & CONN 2012). The other endemic Scincines (*Sepsophis*, *Barkudia*) are distributed in the Eastern Ghats and along the east coast of the Indian subcontinent. Although much of the northern Western Ghats was part of the Deccan trap volcanic episode around 65 mya, the herpetofauna of this region is replete with unique endemics that have derived from endemic radiations in the adjoining areas [e.g., caecilians, *Xanthophryne* (GOWER et al. 2002, GOWER et al. 2007, BIJU et al. 2009)]. The genus *Eurylepis* was split from the genus *Eumeces* sensu lato, which was thought to have once been widespread across the arid Palaearctic region. Given this distribution, it is likely that *E. poonaensis* could have evolved from an ancestor that was distributed in the arid northwestern parts of the Indian subregion and may have subsequently dispersed southwards towards the northern Western Ghats.

The only two known localities where we found *E. poonaensis* are covered with expansive grasslands and some scrub. However, these habitats are dwindling owing to anthropogenic pressure and the rapid rate of urbanization. Katrajghat is already under considerable pressure due to quarrying and extensive modifications to accommodate urban settlements. This type of disturbance was also observed around Nashik. Many grassland animals and plants, some of them endemic and threatened, depend on this habitat. Hence, it is imperative that these grasslands and other open habitats be protected for biodiversity conservation, and that at the same time indigenous migratory shepherds and agricultural practices be sustained, both of which are critical for maintaining this seminatural ecosystem.

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