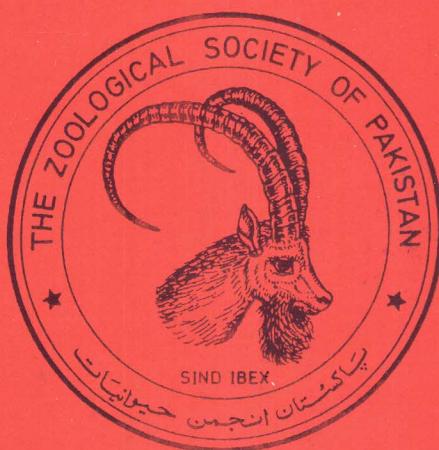


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CHECKLIST AND KEY TO THE SNAKES OF PAKISTAN

MUHAMMAD SHARIF KHAN



Published by

THE ZOOLOGICAL SOCIETY OF PAKISTAN

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In pursuance of the decision of the Zoological Society of Pakistan taken in its General Body Meeting held on 17-3-2001, the *Supplement Series* of the *Pakistan Journal of Zoology* has been started. It will contain large articles like monographs, checklists, catalogues, reviews, etc. Each issue will contain a single article. The price of the publication will vary with the size of the article.

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Checklist and Key to the Snakes of Pakistan

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Abstract.- Checklist of the snakes of Pakistan is presented, with notes on type locality and distribution in and outside Pakistan of each species and subspecies. It includes 79 species and subspecies representing 34 genera and 8 families.

Key words: Checklist, key, snakes, Pakistan.

INTRODUCTION

By the time Boulenger (1890) published the *Fauna of British India – Reptilia and Batrachia*, wealth of knowledge on the taxonomy, habits and habitats of the Indian snakes had been accumulated. The volume was enlarged and revised by Smith in 1941.

After the partition of the subcontinent, several reports have been published on the herpetology of Pakistan with special reference to local snakes (Minton, 1962, 1966; Mertens, 1969, 1970; Khan, 1982, 1984, 1985, in press), adding much to the knowledge to Smith's (1941). As a result, 79 species and subspecies of snakes belonging to 34 genera and 8 families have so far been reported from Pakistan.

The present checklist is written to compass the status of the species of snakes known to occur within the political bounds of Pakistan.

In the checklist, species are arranged alphabetically with no reference to phylogenetic relationships. Notes on distribution in and outside Pakistan are provided. Some important publications pertaining to the snakes are also included in the reference section.

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CHECKLIST

Pakistani snakes belong to 8 families: Leptotyphlopidae, Typhlopidae, Boidae, Colubridae, Elapidae, Hydrophiidae, Viperidae and Crotalidae. The number of species of snakes recorded from Pakistan, has steadily increased since Minton's (1966) report. Minton recorded 58 species, Mertens (1969) 66, Khan (1980) 72 and Khan (in press) 79 species and subspecies which belong to 34 diverse genera.

Family LEPTOTYPHLOPIDAE
(Single genus with two species represented in
Pakistan)

Genus *Leptotyphlops* Fitzinger
(Two species reported from Pakistan)

Key to snakes of Family Leptotyphlopidae in Pakistan

1. Rostral large, hooked; total length of body 80-110 times its diameter *Leptotyphlops macrorhynchus*
Rostral normal, round; total length 55-70 times its diameter *Leptotyphlops blanfordii*

***Leptotyphlops blanfordii* (Boulenger)**

1890. *Glauconia blanfordii* Boulenger, *Fauna Br. India, Rept. Batr.*: 243.

Type locality

Sindh, Pakistan.

Distribution in Pakistan

This snake has been frequently recorded from throughout the riparian system of Pakistan, at low elevations. Hahn and Wallach (1998), while commenting on the old world leptotyphlopids, do not include Pakistan in the range of *Leptotyphlops blanfordii*, although the type locality of this species is Sindh, Pakistan (Gasperetti, 1988).

***Leptotyphlops macrorhynchus* (Jan)**

1862. *Stenostoma macrorhynchus* Jan, *Arch. zool. anat. Fis. Genova*, 1:190.

Type locality

Sennar, Egyptian Sudan.

Distribution in Pakistan

Recorded from Quetta to the Indus valley. Hahn and Wallach (1998), while commenting on Old World leptotyphlopids, do not include Pakistan in the range of *Leptotyphlops macrorhynchus*.

Distribution outside Pakistan

The beaked thread snake is reported from Sudan, Egypt, Saudi Arabia, Iraq, and Iran

Family TYPHLOPIDAE

(Two genera with six species and subspecies are represented in Pakistan)

Key to snakes of Family Typhlopidae in Pakistan

1. Midbody scales 25 or more..... *Typhlops diardii*
Midbody scale less than 25..... 2
2. Twenty scales round midbody *Ramphotyphlops braminus*
Eighteen scales round the midbody 3
3. Midbody diameter does not exceed 2 mm..... *Typhlops ductiflormes*

Midbody diameter exceeds 2 mm.....	4
4. Nasal scale completely divided ... <i>Typhlops madagascariensis</i>	
Nasal scale incompletely divided	5
5. Preocular in contact with third supralabial only	
..... <i>Typhlops ahsanai</i>	
Preocular in contact with 3 rd and 4 th supralabials	
..... <i>typhlops madagascariensis shermani</i>	

Genus ***Ramphotyphlops*** Fitzinger, 1843

(A single species represented in Pakistan)

***Ramphotyphlops braminus* (Daudin)**

1803. *Eryx braminus* Daudin, *Hist. nat. Rep.*, 7: 279.

Type locality

Vizagapatam, peninsular India.

Distribution in Pakistan

In Pakistan it is quite abundant in the upper and lower Indus Valleys and, except for the high mountains and deserts, it is reported from almost all over Pakistan.

Distribution outside Pakistan

Almost cosmopolitan in distribution, which is attributed to the human activity and has been carried to remote areas in potted plants, etc.

Genus ***Typhlops*** Oppel

(Five species known from Pakistan)

***Typhlops ahsanai* Khan**

1999. *Typhlops ahsanai* Khan, *Russian J. Herpet.*, 6: 238.

Type locality

Nadari village, 2 km east of Goi Madan, District Kotli, Azad Kashmir, 33°30'N and 74°00'E, elevation 1315 m.

Distribution in Pakistan

Known only from its type locality, Nadari village, 2 km east of Goi Madan, District Kotli, Azad Kashmir.

***Typhlops diardii* Schlegel**

1839. *Typhlops diardii* Schlegel, *Abbild. Amphib.*, p. 39.

Type locality

India, Orientales.

Distribution outside Pakistan

Known from Nepal, Bengal, Assam, Myanmar, Singapore, Thailand, Malaysia, Cambodia, and Laos.

***Typhlops diardii platyventris* Khan**

1998. *Typhlops diardii platyventris* Khan, *Pakistan J. Zool.*, **30**: 213-221.

Type locality

Goi Madan, Kotli, Azad Kashmir.

Distribution

T. diardii platyventris is known only from its type locality.

***Typhlops ductuliformes* Khan**

1999. *Typhlops ductuliformes* Khan, *Pakistan J. Zool.*, **31**: 385-390.

Type locality

Jhangir's tomb, Lahore.

Distribution in Pakistan

Recorded from Lahore, Hyderabad, and Karachi.

***Typhlops madgemintonai* Khan**

1999. *Typhlops madgemintonai* Khan, *Russian J. Herpet.*, **6**: 233-236.

Type locality

Goi Madan, District Kotli, Azad Kashmir.

Distribution in Pakistan

Known from Goi Madan and Barmoach, District Kotli, Azad Kashmir.

***Typhlops madgemintonai shermanai* Khan**

1999. *Typhlops madgemintonai shermanai* Khan, *Russian J. Herpet.*, **6**: 236-238.

Type locality

Charnali village, 2 km west, Goi Madan, District Kotli, Azad Kashmir.

Distribution in Pakistan

Rabwah, Punjab. Probably washed down by flood water in the Chenab River from Kashmir.

Family BOIDAE

(Two genera occur in Pakistan)

Key to snakes of family Boidae in Pakistan

1. Premaxilla toothed; head with large symmetrically arranged scales; subcaudals in double row..... *Python molurus*
Premaxilla not toothed; head with small scales; subcaudals in a single row..... 2
2. A mental groove present 3
A mental groove absent..... *Eryx conicus*
3. Anterior half of body with smooth scales; anal and caudal scales keeled; 49 scales at midbody *Eryx tataricus*
All body scales keeled; 51-61 midbody scales rows *Eryx johnii*

Genus *Eryx* Daudin

(Three species known from Pakistan)

***Eryx conicus* (Schneider)**

1801. *Boa conica* Schneider, *Hist. Amphib.*, **2**: 268.

Type locality

Madras, India.

Distribution in Pakistan

In Pakistan it has been reported from southern Sindh and the Cholistan Desert.

Distribution outside Pakistan

Extends from Bihar and Orissa through India and Sri Lanka.

Eryx johnii johnii (Russell)

1801. *Boa johnii* Russell, *Indian Serp.*, 2: 18, 20.

Type locality

Tranquebar, India.

Distribution in Pakistan

Recorded from the plains of Punjab, Sindh, and Baluchistan, not extending above 200 m.

Distribution outside Pakistan

It occurs throughout central India.. It is reported from eastern Afghanistan and Iran.

Eryx tataricus speciosus Zarewsky

1915. *Eryx speciosus* Zarewsky, *Ann. Mus. Zool. Acad. Sci. St. Petersburg*, 20: 361.

Type locality

Bukhara, Uzbekistan.

Distribution in Pakistan

Reported from north-western Baluchistan.

Distribution outside Pakistan

Extends from the Aral Sea to the Altai Mountains and Iran.

Genus *Python* Daudin
(Single species in Pakistan)

Python molurus (Linnaeus)

1758. *Coluber molurus* Linnaeus, *Syst. Nat.*, 1: 225.

Type locality

India.

Distribution in Pakistan

Most of the records are from the Indus Delta. Occasionally, flood washed down specimens are reported in dams and under bridges on the rivers, indicating a population existing in the upper valley of the Indus and its tributaries (Khan, 1993a).

Distribution outside Pakistan

About a century ago the rock python was common in India, Sri Lanka, and Pakistan, from the plains to an elevation of 2000 m. Its merciless persecution at the hand of man has reduced its population and now the snake is lingering only in some remote areas.

Family COLUBRIDAE

(Family Colubridae is represented by 16 genera and 40 species and subspecies in Pakistan)

Key to snakes of family Colubridae in Pakistan

1. Ventrals extend across abdomen; rostral deeply grooved 2
Ventrals do not extend across abdomen; rostral not grooved, projected downward *Enhydris pakistanica*
2. A subocular scale present; prefrontal fragmented 3
Subocular scale absent; prefrontal not fragmented 5
3. Rostral long, wedged between but not completely separating internasals; midbody scales 25
Spalerosophis arenarius
Rostral of normal size; midbody scale rows more than 25 4
4. Belly white with gray smudges, subcaudals less than 100 *Spalerosophis schirazianus*
Belly with reddish tint; subcaudals more than 100 *Spalerosophis diadema*
5. Dorsals smooth throughout 6
At least some dorsals keeled 29
6. Lower jaw countersunk *Argyrogena fasciolatus*
Lower jaw normal 7
7. Pupil of eye dark, hardly visible in life 8
Pupil of eye large, clearly visible in life 10
8. Loreal not or slightly in contact with internasals; subcaudals in a single row *Lycodon travancoricus*
Loreal extensively in contact with internasals, subcaudals in pairs 9
9. Posterior nasal distinctly smaller than anterior; 8 supralabials *Lycodon striatus*
Nasals equal in size; 9 supralabials *Lycodon aulicus*
10. Rostral large, projecting, concave below; naris narrow slits 11
Rostral and naris not as above 13
11. Rostral truncate anteriorly *Lytorhynchus ridgewayi*
Rostral pointed 12
12. Fifth labial touching eye *Lytorhynchus paradoxus*
No labial touching eye *Lytorhynchus maynardi*
13. Pupil elliptical; head much wider than neck 14
No labial touching eye 16
14. Head black, labials and chin scales dark; ventrals white, without dark specklings *Bioga melanocephala*
Head and rest of the characters not as above 15
15. Supralabials 8; nostrils large in a pair of nasal scales
Bioga trigonata

- Supralabials 9-10; nostril in a partially divided nasal scale *Telescopus rhinopoma*
16. A pair of oblique or cross dark bars on head and nape; fewer than 60 subcaudals 17
Pattern on head and nape not as above; more than 60 subcaudals 19
17. Fifteen scales rows at midbody; a thick dark cross bar at nape *Oligodon taeniatus*
Seventeen scale rows at midbody 18
18. A thick inverted V-shaped dark stripe one on head other on nape *Oligodon arnensis*
Head and nape dark brown or black, a large yellow mark on each side of head *Sibynophis sagittarius*
19. Ventrals fewer than 190 20
Ventrals 190 or more 23
20. Anal scale not divided *Psammophis leithii*
Anal scale divided 21
21. Nasal scale completely divided 22
Nasal scale incompletely divided *Psammophis condanarus*
22. A pair of supralabials ($4^{\text{th}} + 5^{\text{th}}$ or $5^{\text{th}} + 6^{\text{th}}$) in contact with eye *Psammophis lineolatus*
Three supralabials ($4^{\text{th}} + 5^{\text{th}} + 6^{\text{th}}$) in contact with eye *Psammophis lineolatus*
23. Head scales with regular dark border; adult exceeds 1250 mm in total length *Ptyas mucosus*
Adult does not exceed 1100 mm in total body length 24
24. Two anterior temporals; eye large 25
Single anterior temporal; eyes small *Pseudocyclophis persica*
25. Scales at midbody in 19 rows 26
Scale at midbody in 21 rows *Coluber ravergeri*
26. Dorsals keelless 27
Dorsals keeled 29
27. Single labial (5^{th}) touching eye; body dorsum with vivid pattern of sooty black cross-bands, scales of bands uniformly black *Coluber karelini*
A pair of supralabials touching eye; dorsum unicolor, or with a pattern of spots or rhombs 28
28. Ventrals 199-211, subcaudals 82-119; dorsal pattern of light brown rhombs, center of scales forming pattern light *Coluber ventromaculatus*
Ventrals 205-244, subcaudals 110-144; dorsal pattern of dark spots or unicolor, scales of the pattern unicolor *Coluber rhodorachis*
29. Three supralabials in eye 30
Less than three supralabials in eye 31
30. Ventrals 160 or fewer *Amphiesma stolata*
Ventrals more than 160 *Amphiesma platyceps*
31. A pair of supralabials touching eye 32
One supralabials touching eye *Xenochrophis cerasogaster*
32. A pair of anterior temporals; ventrals 160 or less 33
Single anterior temporal; ventrals 60 or more *Natrix tessellata*
33. A pair of oblique orbitolabial dark stripes; dorsum light olive, with pattern of dark spots *Xenochrophis piscator*
Orbitolabial stripes indistinct; dorsum yellowish green, unicolor *Xenochrophis sanctijohannis*

Genus **Amphiesma** Dúmeril, Bibron and Dúmeril
(Three species are reported from Pakistan.
Amphiesma platyceps and *Amphiesma sieboldii* are regarded as simbling species (Malnate, 1966).

Amphiesma platyceps (Blyth)

1854. *Tropidonotus platyceps* Blyth, *J. Asiatic Soc. Bengal, Calcutta*, 23: 297.

Type locality

Assam and Darjeeling, Eastern Himalayas.

Distribution in Pakistan

In Pakistan it is known only from Changla Gali, western North Western Frontier Province (NWFP).

Distribution outside Pakistan

Extends from the western to the eastern Himalayas. Known to be common in Darjeeling District, between 1500 and 3000 m of elevation.

Amphiesma sieboldii (Günther)

1860. *Herpetoreas sieboldii* Günther, *Proc. zool. Soc. Lond.*, 1860: 156.

Type locality

Sikkim, 2500 m.

Distribution in Pakistan

Ghora Gali in alpine Punjab, Pakistan.

Distribution outside Pakistan

Assam in the Eastern Himalayas.

Amphiesma stolatus (Linnaeus)

1758. *Coluber stolatus* Linnaeus, *Syst. Nat.*, 1: 219.

Type locality

Asia.

Distribution in Pakistan

Widely distributed in Indus Valley, not crossing west of the Indus River into Baluchistan.

Distribution outside Pakistan

Most widely distributed snakes in Southeast Asia. It extends from the valley of the Mekong River in Laos, Thailand, north to southern China, then throughout India, Bangladesh, Burma, Sri Lanka, to the Indus valley in Pakistan.

Genus *Argyrogena* Werner
(Single species known from Pakistan)

Argyrogena fasciolatus (Shaw)

1802. *Coluber fasciolatus* Shaw, *Gen. Zool.*, 3:528.

Type locality
India.

Distribution in Pakistan

Known from Sindh and southern Punjab.

Distribution outside Pakistan

Extends from Bangladesh throughout India and Sri Lanka.

Genus *Boiga* Fitzinger

(Two morphologically very closely related species reported from Pakistan, which are geographically isolated from each other)

Boiga trigonata (Schneider)

1802. *Coluber trigonatus* Schneider, *Naturgesch. Amph.*, 4: 156 (256).

Type locality
Vizagapatam, southern India.

Distribution in Pakistan

Throughout Indus valley exclusive of higher mountains and Baluchistan highland.

Distribution outside Pakistan

From Bangladesh throughout India, Sri Lanka, Kashmir, and Pakistan.

Boiga melanocephala (Annandale)

1904. *Dipsadomorphus trigonata melanocephala*

Annandale, *J. Asiatic Soc. Bengal, Calcutta*, 73: 209.

Type locality

Border between Iran and Baluchistan.

Distribution in Pakistan

Western Baluchistan.

Distribution outside Pakistan

Through eastern Iran, Saudi Arabia, north to southern Uzbekistan.

Genus *Coluber* Linnaeus

(Nine species and subspecies are reported from Pakistan)

Coluber karelini karelini Brandt

1838. *Coluber (Tyria) karelini* Brandt, *Bull. Acad. Sci. St. Petersburg*, 3: 243.

Type locality
South-western Asia.

Distribution in Pakistan

Recorded from Quetta and Pishin area. Specimens have also been collected from northwestern Punjab, from Sulaiman Range.

Distribution outside Pakistan

Recorded from Transcaspia to Kirghiz and southward to Iran.

Coluber karelini mintonorum Mertens

1969. *Coluber karelini mintonorum* Mertens, *Stuttg. Beitr. Naturk.*, 197: 56-60.

Type locality

Zangi-Nawar, 27 km southwest of Nushki, District Chagai, Baluchistan.

Distribution in Pakistan

Reported from sand desert in the Chagai area. The author collected two specimens from the Sulaiman Range, in western Punjab, Pakistan, in a rocky area.

***Coluber ravergeri* Ménétriés**

1832. *Coluber ravergeri* Ménétriés, Cat. Rrais. Obj. Zool., 69.

Type locality

Baku, Azarbaijan.

Distribution in Pakistan

Recorded from mountainous areas in northern Baluchistan to Chitral.

Distribution outside Pakistan

A western Asian snake, it extends from Transcaucasia to Israel to western Mongolia.

***Coluber rhodorachis rhodorachis* (Jan)**

1865. *Zamenis rhodorachis* Jan, In: de Filippi, Note viaggio. Persia :356.

Type locality

Persia (Iran).

Distribution in Pakistan

Recorded from Baluchistan, and is common around Karachi, however, it does not extend in plains of Punjab.

Distribution outside Pakistan

The cliff racer has a wide range in the west, from Turkmenistan, Syria, Iraq, Iran, Saudi Arabia and extends to Somalia.

***Coluber rhodorachis ladacensis* (J. Anderson)**

1871. *Zamenis ladacensis* Anderson, J. Asiatic Soc. Bengal, Calcutta, 40: 16.

Type locality

Ladakh, Baltistan, northeastern Pakistan.

Distribution in Pakistan

Quetta (Baluchistan) and Peshawar (NWFP).

***Coluber rhodorachis kashmirensis* M. S. Khan and A. Q. Khan**

2000. *Coluber rhodorachis kashmirensis* M. S. Khan and A.Q. Khan, Pakistan J. Zool., 32: 49.

Type locality

Goi Madan, Kotli, Azad Kashmir.

Distribution in Pakistan

The cliff racer was collected from several localities in southern Azad Kashmir, Mirpur, Bhimbar, Dulliah Jattan, Kotli, Goi Madan, Aram Bari, Palandri, Punch, Bagh and Muzaffarabad.

***Coluber ventromaculatus ventromaculatus* Gray and Hardwicke**

1834. *Coluber ventromaculatus* Gray and Hardwicke, Ill. Indian Zool. 2, Plate 80, Figure 1.

Type locality

Not stated.

Distribution in Pakistan

Widely distributed in the Indo-Gangetic plains through India and Pakistan, below 200 m.

Distribution outside Pakistan

It extends westward to Uzbekistan and Israel.

***Coluber ventromaculatus bengalensis* M. S. Khan and Q. Khan**

2000. *Coluber ventromaculatus bengalensis* M. S. Khan and A. Q. Khan, Pakistan J. Zool., 32: 50-51.

Type locality

Bengal.

Distribution in Pakistan

A rare snake in Punjab, Pakistan.

***Coluber ventromaculatus indusai* M. S. Khan and A. Q. Khan**

2000. *Coluber ventromaculatus indusai* M. S. Khan and A.Q. Khan, Pakistan J. Zool., 32: 50-51.

Type locality

Indus Valley, Pakistan.

Distribution in Pakistan

Indus Valley, Pakistsan.

Genus ***Enhydris*** Sonnini and Latreille
(Single species reported in Pakistan)

***Enhydris pakistanica* Mertens**

1959. *Enhydris pakistanica* Mertens, *Senckenb. Biol. Frankfurt a.M.* **40**: 117.

Type locality

Jati, Sindh, Pakistan.

Distribution in Pakistan

Reported only from the Indus Delta in lower Sindh, Pakistan.

Genus ***Lycodon*** Boie
(Three species are known from Pakistan)

***Lycodon aulicus aulicus* (Linnaeus)**

1758. *Coluber aulicus* Linnaeus, *Syst. Nat. Ed. 10*,
1: 220.

Type locality

America.

Distribution in Pakistan

Spotty in distribution, reported from different localities in Sindh, Lahore and Rabwah, District Jhang, Pakistan.

Distribution outside Pakistan

Widely distributed throughout India, Sri Lanka, Nepal, Assam, and Burma.

***Lycodon striatus* (Shaw)**

1802. *Coluber striatus* Shaw, *Gen. Zool.*, **3**: 527.

Type locality

Vizagapatam and Hyderabad, southern India.

Distribution in Pakistan

This snake has been collected from different localities in Punjab, Sindh, Baluchistan and North-

Western Frontier Province. In Pakistan it has two races.

Distribution outside Pakistan

It ranges from Chhota Nagpur in the east throughout India and Sri Lanka. Westward it extends to Transcaspia region.

***Lycodon striatus striatus* (Shaw)**

1802. *Coluber striatus* Shaw, *Gen. Zool.*, **3**: 527.

Type locality

Vizagapatam and Hyderabad, southern India.

Distribution in Pakistan

Mainly the Indus Valley and along the coastal strip.

***Lycodon striatus bicolor* (Nikolsky)**

1903. *Contia bicolor* Nikolsky, *Ann. Mus. Zool. Acad. Sci. St. Petersburg*, **8**: 96.

Type locality

Transcaspia.

Distribution in Pakistan

It is the northwestern race of the species, extending into Pakistan from upland Baluchistan and Waziristan, NWFP.

***Lycodon travancoricus* (Beddome)**

1870. *Cercaspis travancoricus* Beddome, *Madras Monthly J. med. Sci.*, **2**: 169.

Type locality

Travancore Hills, southern India.

Distribution in Pakistan

Reported once from Hyderabad, Sindh.

Distribution outside Pakistan

This snake is widely reported from southern India.

Genus *Lytorhynchus* Peters
(Three species known from Pakistan)

***Lytorhynchus maynardi* Alcock and Finn**

1896. *Lytorhynchus maynardi* Alcock and Finn, *J. Asiatic Soc. Bengal, Calcutta*, **65**: 562.

Type locality

South of Koh Malik-do-Khand, Afghan-Baluchistan border, Pakistan.

Distribution in Pakistan

Characteristic snake of windblown sand dune habitat of western Baluchistan. It has been recorded from Nushki to eastern Iran in the west.

Distribution outside Pakistan

Eastern Iran.

***Lytorhynchus paradoxus* (Günther)**

1875. *Aconitophis paradoxus* Günther, *Proc. zool. Soc. Lond.*, 1875: 232.

Type locality

Northern India, restricted to Zangipur, northern Sindh, Pakistan.

Distribution

This sand snake extends from the Thar Cholistan, deserts and Thal Deserts in northwestern Punjab, Pakistan.

***Lytorhynchus ridgewayi* Boulenger**

1887. *Lytorhynchus ridgewayi* Boulenger, *Ann. Mag. nat. Hist.*, **20**: 413.

Type locality

Chinkalok, Afghanistan.

Distribution in Pakistan

Reported from western Baluchistan up to an elevation of 2000 m.

Distribution outside Pakistan

Extends to Transcaspia, central Iran, and Afghanistan.

Genus *Natrix* Laurenti
(Single species in Pakistan)

***Natrix tessellata* (Laurenti)**

1768. *Coronella tessellata* Laurenti, *Spec. med. Syn. Rep.* :87.

Type locality

"in Japidia (= Lapydia), vulgo Cars (= alpine meadow)" (probably Italy).

Distribution in Pakistan

Reported from Mastuj in Chitral, North Western Fronteir Province, Pakistan by Wall (1911) with no subsequent confirmation.

Distribution outside Pakistan

Widely distributed in central and south-eastern Europe to Western Asia, as far as Turkey, across south-western Asia to Pakistan. Also reported from Iraq, Syria, and Jordan to the Nile Delta in Egypt.

Genus *Oligodon* Boie,
(Two species known from Pakistan)

***Oligodon arnensis arnensis* (Shaw)**

1802. *Coluber arnensis* Shaw, *Gen. Zool.*, **3**: 526.

Type locality

Vizagapatam and Arni, southern India.

Distribution in Pakistan

Reported from Sindh, throughout Punjab and southern NWFP.

Distribution outside Pakistan

Bengal, central Nepal, central and peninsular India, and Sri Lanka.

***Oligodon taeniatus taeniatus* (Jerdon)**

1853. *Coronella taeniolata* Jerdon, *J. Asiatic Soc. Bengal, Calcutta*, **22**:528.

Type locality

Vizagapatam, peninsular India.

Distribution in Pakistan

Recorded throughout the plains from Rawalpindi to Las Bela, at low altitudes.

Distribution outside Pakistan

Recorded from Bihar, throughout India and Sri Lanka.

Genus ***Psammophis*** Fitzinger
(Four species reported in Pakistan)

***Psammophis condanarus condanarus* (Merrem)**

1820. *Coluber condanarus* Merrem, *Tent. Syst. Amp.*: 107.

Type locality

Ganjam District, Orissa, India.

Distribution in Pakistan

Records are from Jacobabad, Lahore, and the Indus Delta. In the western Himalayas it is one of the commonest snakes at altitudes between 1000 and 2000 m.

Distribution in Pakistan

Known from western Bengal, Orissa to Bombay, Sindh and Punjab.

***Psammophis leithii leithii* Günther**

1869. *Psammophis leithii* Günther, *Proc. zool. Soc. Lond.*, 1869: 505.

Type locality

Sindh, Pakistan.

Distribution in Pakistan

Recorded from Azad Kashmir, the Thar, Cholistan, and Thal Deserts to Kalat District in Baluchistan, below 800 m of elevation. It is fairly common in lower Indus Valley.

Distribution outside Pakistan

A northern Indian snake, ranging from the United Provinces of India, Poona to Waziristan and southeastern Baluchistan, in the west.

***Psammophis lineolatus lineolatus* (Brandt)**

1838. *Coluber (Taphrometopon) lineolatus* Brandt, *Bull. Acad. Imp. Sci. St. Petersburg*, 3: 243.

Type locality

Transcaspia.

Distribution in Pakistan

Recorded around Quetta, Baluchistan.

Distribution outside Pakistan

Central Asian species extending from Transcaspia to northern Iran, east to Mongolia and north-west China.

***Psammophis schokari schokari* (Forskål)**

1775. *Coluber schokari* Forskål, *Descr. Anim.*:14.

Type locality

Yemen, South Arabia.

Distribution in Pakistan

It extends in Cholistan and Thal Deserts of Punjab.

Distribution outside Pakistan

Geographical range of *P. schokari* is continuous across northern Africa through Somalia, south-western Asia to Soviet Central Asia, Baluchistan and Sindh.

Genus ***Pseudocyclophis*** Boettger
(Single species in Pakistan)

***Pseudocyclophis persica* (Anderson)**

1872. *Cyclophis persicus* Anderson, *Proc. zool. Soc. Lond.*, 1872:371-404.

Type locality

Neu-Serachs, north-eastern Persia.

Distribution in Pakistan

Reported from Baluchistan, western Sindh to Swat in the north.

Distribution outside Pakistan

Reported from Turkmenistan, Iraq, and Iran.

Genus ***Ptyas*** Fitzinger
(Single species in Pakistan)

***Ptyas mucosus mucosus* (Linnaeus)**

1758. *Coluber mucosus* Linnaeus, *Syst. Nat.*, 1: 226.

Type locality

India.

Distribution in Pakistan

Widely distributed in Indus Valley, Baluchistan and NWFP.

Distribution outside Pakistan

Range quite extensive in Southeast Asia; from Java, Sumatra, Viet Nam, and China. It extends throughout India, the Andaman Islands, Sri Lanka, Pakistan, Iran, and Afghanistan. It particularly avoids deserts throughout its range. It is common at moderate elevations of 200 m, however, it has been recorded about 1600 m of elevation near Quetta.

Genus ***Sibynophis*** Fitzinger
(Single species in Pakistan)

***Sibynophis sagittarius* (Cantor)**

1839. *Calamaria sagittaria* Cantor, *Proc. zool. Soc. Lond.*, 49

Type locality

Western Himalayas.

Distribution in Pakistan

Recorded from Azad Kashmir.

Distribution outside Pakistan

Western Himalayas; Ganges basin, and lower Bengal.

Genus ***Spalerosophis*** Jan
(Three species recorded from Pakistan)

***Spalerosophis arenarius* (Boulenger)**

1890. *Zamenis arenarius* Boulenger, *Fauna Brit.*

India, 329.

Type locality

Sindh and Karachi, Pakistan. Restricted by Marx (1959) to Karachi.

Distribution

Apart from Cholistan and the Thar Deserts, it has recently been reported from Dera Ghazi Khan and the Thal Desert in northwestern Punjab, Pakistan.

***Spalerosophis diadema diadema* (Schlegel)**

1837. *Coluber diadema* Schlegel, *Phys. Serp.*, 2: 148.

Type locality

Buchier "near Bombay", India.

Distribution in Pakistan

Recorded from throughout NWFP, Punjab, Sindh and Baluchistan, from sea level to 2000 m, in Gilgit, northern Pakistan.

Distribution outside Pakistan

Widely distributed throughout India, Bangladesh, and northern Sri Lanka.

***Spalerosophis diadema atriceps* (Fisher)**

1885. *Zamenis diadema* var. *atriceps* Fisher, *Jb. Hamburg Wiss. Anst.*, 2: 82-119.

Type locality

Himalayas.

Notes

A colour mutant of *Spalerosophis diadema* as it grows old.

***Spalerosophis schirazianus* (Jan)**

1865. *Periops parallelus* var. *schiraziana* Jan, in: *de Filippi, Note viaggio Persia* : 356.

Type locality

Shiraz, Iran.

Distribution in Pakistan

It is at its easternmost distribution range and has been recorded from western Baluchistan and Las Bela.

Distribution outside Pakistan

It has wider range in the west, from Transcaspia to the Zagros Mountains in southern Iran and Tajikistan.

Genus ***Telescopus*** Wagner
(A single species in Pakistan)

Telescopus rhinopoma (Blanford)

1874. *Dipsas rhinopoma* Blanford, *Ann. Mag. nat. Hist.*, 13:34.

Type locality

Kirman, southern Iran.

Distribution in Pakistan

Waziristan, Kacha Thana, Baluchistan, Miranshah, Tochi Valley, Waziristan, NWFP. A specimen BMNH 94.210.4.4. from Sindh is in the British Museum, London.

Distribution outside Pakistan

South-central Iran

Genus ***Xenochrophis***
(Three species recorded from Pakistan)

Xenochrophis cerasogaster cerasogaster (Cantor)

1839. *Psammophis cerasogaster* Cantor, *Proc. zool. Soc. Lond.*, 1839: 52.

Type locality

Near Calcutta, India.

Distribution in Pakistan

It is known only from lower Sindh.

Distribution outside Pakistan

Ranges widely in the Indo-Gangetic plains, from Assam through Bangladesh, to the Indus Delta. Northward it extends up to Nepal.

Xenochrophis piscator piscator (Schneider)

1799. *Hydrus piscator* Schneider, *Hist. Amphib.*, 1: 247.

Type locality

East Indies.

Distribution in Pakistan

It is quite common in all major drainage systems in the upper and lower Indus Valley.

Distribution outside Pakistan

Has wide distribution in southeast Asia, from Borneo, Taiwan, throughout India, westward to the Indus Delta.

Xenochrophis sanctijohannis Boulenger

1890. *Tropidonotus sanctijohannis* Boulenger, *Fauna Brit. India*, :350.

Type locality

Kashmir.

Distribution in and outside Pakistan

Primarily a highland water snake, it is washed down the Sutlej River and finds its way into irrigation channels in areas surrounding Bahawalnagar and Bahawalpur, southern Punjab, Pakistan.

Family ELAPIDAE

(Two genera and five species in Pakistan)

Key to genera of family Elapidae

1. Vertebral row of dorsals distinctly enlarged, subcaudals not divided *Bungarus*
Vertebral row not enlarged; subcaudals divided *Naja*

Genus ***Bungarus*** Daudin

(Two species occur in Pakistan)

Bungarus caeruleus caeruleus (Schneider)

1801. *Pseudoboa caerulea* Schneider, *Hist. Amphib.*, 2: 284.

Type locality

Vizagapatam, southern India.

Distribution in Pakistan

Reported from throughout Punjab including the alpine area, North-Western-Frontier-Province, Azad Kashmir, Sindh, and southern Baluchistan.

Distribution outside Pakistan

The common krait is reported from Bangladesh, throughout India, and northern Sri Lanka.

***Bungarus sindanus sindanus* Boulenger**

1897. *Bungarus sindanus* Boulenger, J. *Bombay nat. Hist. Soc.*, 11: 73-74.

Type locality

Umarkot and Sukkhur, Sindh, Pakistan.

Distribution

The Sindhi krait has been reported from Umar Kot and Khanpur in Sindh, Bahawalpur, Bahawalnagar, Rhimyar Khan, Mianwali and Makerwal in Punjab, Pakistan.

***Bungarus sindanus razai* M.S. Khan**

1985. *Bungarus sindanus razai* M. S. Khan, *The Snake*, 17: 71-78.

Type locality

Dandot, District Mianwali, Punjab, Pakistan.

Distribution in Pakistan

Northwestern highland, Punjab, Pakistan and Azad Kashmir.

Genus ***Naja*** Laurenti
(Two species known from Pakistan)

***Naja naja naja* (Linnaeus)**

1758. *Coluber naja* Linnaeus, *Syst. Nat.* 1: 221.

Type locality

India.

Distribution in Pakistan

Extends along the eastern border of the Indus from North-Western-Frontier-Province, Punjab, and Sindh.

Distribution outside Pakistan

Reported from sea level to 4000 m in the Himalayas from Bangladesh, throughout India and Sri Lanka.

***Naja oxiana* (Eichwald)**

1831. *Tomyris oxiana* Eichwald, *Zool. Spec.*, 3: 171.

Type locality

Transcaspian Region.

Distribution in Pakistan

Reported from throughout North-Western-Frontier-Province, northeastern Baluchistan to northwestern Punjab and Kashmir.

Distribution outside Pakistan

Occurs from Transcaspia and southern Turkmenistan, eastern Iran, and Afghanistan.

Family HYDROPHIIDAE

(14 species of 7 genera of sea snakes known from the coasts of Pakistan)

Key to the snakes of family Hydrophiidae in Pakistan

1. Ventrals distinct throughout, normally undivided 2
Ventrals, except anterior, either divided by a median longitudinal fissure or indistinct 3
2. Mental scale elongate, partially hidden in a groove between first infralabial; ventrals uniform in size
Enhydrina schistosa
Mental scale normal 5
3. Head very small; neck long, slender; body thick; ventrals divided by a longitudinal fissure 4
Head and body not as above 12
4. Prefrontal touches third supralabial; ventrals 404-468
Microcephalophis cantoris
Prefrontal not touching third supralabial; ventrals 320-350
Microcephalophis gracilis
5. Ventrals broad anteriorly, narrower posteriorly
Paraescutata viperina
Ventrals uniform in size 6
6. Adult with very small head and long, slender neck 7
Adult with large head; neck not distinct from body 8
7. Ventrals 390 or more
Hydrophis fasciatus

8. Ventrals fewer than 390.....*Hydrophis mamilaris*
 Scales on thickest part of body with round or blunt tips; imbricate; adult length more than a meter 9
 Scales on thickest part of body hexagonal or quadrangular; imbricate or juxtaposed; length rarely exceeds a meter 10
9. Normally one anterior temporal.....*Hydrophis spiralis*
 Normally a pair of anterior temporals.....*Hydrophis cyanocinctus*
10. Adults with bluish-gray bands on body; maxillary teeth less than 13*Hydrophis caerulescens*
 Adult with dark-gray or greenish bands on body maxillary teeth less than 13 11
11. Top of head with curved yellow mark; ventrals 314-322 ..
*Hydrophis lepemoides*
 No mark on top of head; ventrals 209-312*Hydrophis ornatus*
12. Dorsals juxtaposed..... 13
 Dorsals pointed, strongly imbricate; ventrals indistinct....*Astrotia stokesii*
13. Ventrals distinct anteriorly, indistinct posteriorly.....*Lapemis curtus*
 Ventrals with a longitudinal fissure; dorsals subquadangular*Pelamydrus platurus*

Genus *Astrotia* Fisher
 (Single species in Pakistan)

Astrotia stokesii (Gray)

1846. *Hydrus stokesii* Gray, in: Stokes. *Australia*, 1: 502.

Type locality
 Australian Sea.

Distribution in and outside Pakistan

This snakes has been reported from the Far East, Australia, Malay Peninsula, Bay of Patani, Singapore, Sri Lanka, along peninsular India, and extending along the Makran Coast in Pakistan.

Genus *Enhydrina* Gray
 (Single species reported from Pakistan)

Enhydrina schistosa (Daudin)

1803. *Hydrophis schistosus* Daudin, *Hist. nat. Rep.*, 7: 386.

Type locality
 Tranquebar, peninsular India.

Distribution in Pakistan

It is a most common sea snake along the coastal waters of Pakistan.

Distribution outside Pakistan

It ranges from the Gulf of Oman eastward to the coast of southern Viet Nam, along Australia to Rockhampton.

Genus *Hydrophis* Latreille

(Seven species known from the shores of Pakistan)

Hydrophis caerulescens (Shaw)

1802. *Hydrus caerulescens* Shaw, *Gen. Zool.*, 3: 561.

Type locality
 Indian Ocean.

Distribution in Pakistan

Reported from Karachi coast.

Distribution outside Pakistan

It has a wide range in Southeast Asia, from the northern coast of Australia, to Queensland, Borneo, Java, Malaya, Myanmar, and along the coasts of China, Siam, India.

Hydrophis cyanocinctus Daudin

1803. *Hydrophis cyanocinctus* Daudin, *Hist. Nat. Rep.*, 7: 383.

Type locality
 Sunderband, Bangladesh.

Distribution in and outside Pakistan

It is a wide ranging species which extends from the Persian Gulf along the coastal waters of Pakistan, the Indian coast, Sri Lanka, Bangladesh, Siam (Thailand), Islands of Indonesia to the Sea of Japan.

Hydrophis fasciatus (Schneider)

1799. *Hydrus fasciatus* Schneider, *Hist. Amphib.*, 1: 240.

Type locality
East Indies.

Distribution in and outside Pakistan

From coastal Pakistan it extends along the Indian coast, Sri Lanka, Burma to the Strait of Malaca.

***Hydrophis lapemoides* (Gray)**

1849. *Auteria lapemoides* Gray, *Cat. Sn. Br. Mus.*, 46.

Type locality
Madras, India and Sri Lanka.

Distribution in and outside Pakistan

It ranges from the Persian Gulf, along the coasts of Pakistan, India, and Sri Lanka.

***Hydrophis mamillaris* (Daudin)**

1803. *Anguis mamillaris* Daudin, *Hist. nat. Rep.*, 7: 340.

Type locality
Vizagapatam, peninsular India.

Distribution in and outside Pakistan

From the Karachi coast, along peninsular India.

***Hydrophis ornatus* (Gray)**

1842. *Auteria ornata* Gray, *Zool. Misc.*, 61.

Type locality
Indian Ocean.

Distribution in and outside Pakistan

It ranges from the Persian Gulf, along coastal Karachi, peninsular India, Bangladesh, Sri Lanka, Siam, and New Guinea.

***Hydrophis spiralis* (Shaw)**

1802. *Hydrus spiralis* Shaw, *Gen. Zool.*, 3: 564.

Type locality
Indian ocean.

Distribution in and outside Pakistan

It ranges from the Persian Gulf along coastal Pakistan and India, Sri Lanka, Bangladesh, Burma to Celebes and the Philippines.

Genus ***Lapemis*** Gray
(Single species known from Pakistan coastal waters)

***Lapemis curtus* (Shaw)**

1802. *Hydrus curtus* Shaw, *Gen. Zool.*, 3: 562.

Type locality
Unknown.

Distribution in and outside Pakistan

This snake has been recorded from the Persian Gulf, along the Makran and Karachi coasts, peninsular India, Sri Lanka to Madras.

Genus ***Microcephalophis*** Lesson
(Two species known from Pakistan)

***Microcephalophis cantoris* (Günther)**

1864. *Microcephalophis cantoris* Günther, *Rep. Br. India*, 376.

Type locality
Penang, Malaysia.

Distribution in and outside Pakistan

It ranges from Karachi to Cannore, and on the east from Orissa to Chittagong. Reports from Penang, Malaysia have not been subsequently confirmed.

***Microcephalophis gracilis* (Shaw)**

1802. *Hydrus gracilis* Shaw, *Gen. Zool.*, 3: 560.

Type locality
Unknown.

Distribution in and outside Pakistan

It ranges from Persian Gulf, around the coast of Pakistan, India to China, Hong Kong, Borneo, and northern Australia.

Genus ***Pelamis*** Daudin
(Single species from Pakistan)

Pelamis platurus (Linnaeus)

1766. *Anguis platura* Linnaeus, *Syst. Nat.* 1: 391.

Type locality

Unknown.

Distribution in and outside Pakistan

It ranges from the Persian Gulf westward to the Cape of Good Hope; eastward from coastal Pakistan to New Zealand, then northward to Possiet Bay, Kamchatka. In American waters it has been recorded from the Gulf of California to Ecuador.

Genus ***Praescutata*** Wall
(Single species known from Pakistan)

Praescutata viperina (Schmidt)

1852. *Thalassophis viperina* Schmidt, *Abh. Naturwiss. Ver. Hamburg*, 2: 79.

Type locality

Java.

Distribution in and outside Pakistan

It ranges from Persian Gulf along Makran coast (Makran), around coastal India to southern China, thence to Borneo and Java.

Family VIPERIDAE
(Five genera of viperid snakes occur in Pakistan)

Key to the snakes of family Viperidae in Pakistan

1. Snout flanked with enlarged, butterfly-like scales jutting out laterally..... *Eristicophis macmahonii*
- Snout flanked with small scales..... 2
2. Lateral small, strongly oblique, with serrated keels
..... *Echis carinatus*
- Laterals with entire keels..... 3
3. A group of elevated supraoculars forming "horn", keels ending in knobs *Pseudocerastes persicus*
- No supraorbital horn; keels normal..... 4
4. Pattern of indistinct blotches on body; midbody scale rows 23-27..... *Vipera lebetina*
- Pattern of three rows of vivid dark brown ocelli; ocelli of middorsum, often fused to form a chain; 27-33 scale rows at midbody..... *Daboia russelii*

Genus ***Daboia*** Gray
(Single species in Pakistan)

Daboia russelii russelii (Shaw and Nodder)

1797. *Coluber russelii* Shaw and Nodder, *Vivar. nat. or nat. Mis.*, 8: 291.

Type locality

Coromandel coast, southern India.

Distribution in Pakistan

Recorded from throughout the Indus Valley, from Karachi to Rawalpindi, at low altitudes.

Distribution outside Pakistan

Reported from throughout India to Bangladesh, extends into peninsular India and Sri Lanka. It is distinguished in several races throughout Southeast Asia to Taiwan (Wüster 1998b).

Genus ***Echis*** Merrem
(Three subspecies reported from Pakistan)

Echis carinatus (Schneider)

1801. *Pseudoboa carinata* Schneider, *Hist. Amphib.*, ii: 285.

Type locality

Arni, near Madras, India.

Distribution

Saw-scale vipers are widely distributed from northern Africa, through the Middle East, southern former Russia, descending to Iran, Afghanistan, most of Pakistan excluding the high northern mountains, India, and Sri Lanka.

Echis carinatus has been distinguished in more than ten races, of which the African are now recognized as species. At least following three races are represented in Pakistan.

Echis carinatus astolae Mertens

1969. *Echis carinatus astolae* Mertens, *Stuttg. Beitr. Naturk.*, 216: 3-4.

Type locality

Astola Island, 25 km SE off the Pasni coast, Baluchistan.

Distribution in Pakistan

This race has been described from Astola Island, 25 km southeast off the Pasni coast, Baluchistan.

Echis carinatus multisquamatus Cherlin

1981. *Echis carinatus multisquamatus* Cherlin, Proc. zool. Inst. Acad. Sci. USSR, **101**: 92-95.

Type locality

Bayram-Ali, Marysk area, Turkmenia.

Distribution in and outside Pakistan

From the Caspian Sea, through Turkmenistan, into Bukhara, Samarkand and Tashkent to Tajikistan along the Afghan border, up to Hindu Kush, northeastern Baluchistan and eastern Iran.

Echis carinatus sochureki Stemmler

1969. *Echis carinatus sochureki* Stemmler, Aquaterra, **6**: 118-125.

Type locality

Band Kushdil Khan, Peshin, Baluchistan.

Distribution in and outside Pakistan

It ranges to northern India, the whole of Pakistan except high mountains in north, southern Afghanistan, central Iran to the Iranian Gulf coast and Khuzestan.

Genus *Eristicophis* Alcock and Finn
(A monotypic genus of snakes which is characteristic of Baluchistan desert)

Eristicophis macmahonii Alcock and Finn

1897. *Eristicophis macmahonii* Alcock and Finn, J. Asiatic Soc. Bengal, Calcutta (n.s.), **65**: 564.

Type locality

Desert south of Helmand, Baluchistan, Pakistan.

Distribution in and outside Pakistan

So far, this snake has been recorded from Seistan in the extreme east of Iran into Afghanistan south of the Helmand River and southwestern Baluchistan, between the Chagai Hills and the Siahn Range, east to Nushki.

Genus *Pseudocerastes* Boulenger
(Single species known in Pakistan)

Pseudocerastes persicus (Dúmeril, Bibron and Dúmeril)

1854. *Cerastes persicus* Dúmeril, Bibron and Dúmeril, Erpet. Gen., **7**: 1443.

Type locality

Persia.

Distribution in and outside Pakistan

This snake has been collected up to 2200 m of elevation. It has been recorded from Azerbaijan and northern Iraq through Iran south to Persian Gulf, eastward to central Afghanistan and western Las Bela.

Genus *Macrovipera* Reuss
(Single species in Pakistan)

Macrovipera lebetina (Dwigubsky)

1832. *Vipera obtusa* Dwigubsky, Opyt estetv. Istorii, **3**: 30.

Type locality

Jelisawetpol, Transcaucasia.

Distribution in and outside Pakistan

Its Range extends from Caucasus to Lebanon, through southern Turkmenistan and Uzbekistan. In Pakistan its records are from the Waziristan Hills, Quetta highlands, and Chitral.

Family CROTALIDAE
(A single genus represented in alpine Pakistan)

Genus *Gloydius* Hoge and Romano-Hoge
(Single species known from alpine Pakistan)

Gloydius himalayanus (Günther)

1864. *Halys himalayanus* Günther, Rep. Br. India,
393.

Type locality

Garhval, western Himalayas, India.

Distribution in and outside Pakistan

The Himalayan pitviper is recorded from Nathia Gali in the western Himalayas and eastern North-Western-Frontier-Province, Pakistan (Khan and Tasnim 1986). The author has seen a specimen in the Government College Natural History Museum, Lahore, Pakistan, from the Dosai Plains, Baltistan, north-eastern Pakistan. The viper is known to be very common in the western Himalayas, less so beyond Nepal (Wall 1910). However, its range extends from Sikkim to Chitral in the north, extending into eastern North-Western-Frontier-Province, Pakistan.

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