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REVIEW OF THE SNAKES
OF THE GENUS *LYTORHYNCHUS*

By

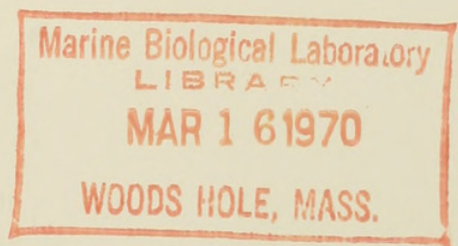
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The nonvenomous snakes of the genus *Lytorhynchus* are distributed from the Atlantic coast of North Africa eastward to the west Indian frontier. Included at one time or another in this group are species currently referred to *Phyllorhynchus*, a small distinctive genus of deserticolous North American snakes with which the Southwest Asian forms really have no affinities. The lytorhynchids, though not especially diversified, seem best adapted to arid habitats. Reported from rocky as well as sandy deserts of the Palearctic region, members of the genus have been taken at or at least near coastal areas at sea level in Saudi Arabia and North Africa, and at altitudes in excess of 8000 feet (according to Minton, 1966, p. 131, but see our remarks on distribution under *L. ridgewayi*). With the exception of two nominal species, *L. diadema* and *L. ridgewayi*, the seven remaining nominal species, and three additional nominal subspecies presently assigned to the genus, were known until recently from less than two dozen specimens. Through the kindness of museum curators of several institutions we have been privileged to examine the types of most of the nominal taxa. Further, due to the efforts of Mr. John Gasperetti, Field Associate of the Department of Herpetology of the Academy, and Mr. Jeromie Anderson, we have seen substantially more material of the eastern populations of this genus than has anyone heretofore.

We are indebted to several individuals: to Mr. John Gasperetti, first and foremost for depositing at the Academy his excellent Southwest Asian collections, including two separate series of *L. gaddi*; Dr. Sherman A. Minton, Jr., for providing additional data on the specimens of *Lytorhynchus* he collected while

[249]



in Pakistan and which were loaned to us by Dr. Charles M. Bogert and Dr. Richard G. Zweifel of the American Museum of Natural History, New York (AMNH); Dr. Robert F. Inger and Mr. Hymen Marx for the loan of specimens in the collections of the Field Museum of Natural History (FMNH); for similar courtesies by Dr. Donald W. Tinkel of the Museum of Zoology, University of Michigan (UMMZ), Dr. Robert C. Stebbins, Museum of Vertebrate Zoology, University of California at Berkeley (MVZ), Dr. James A. Peters, United States National Museum, Washington, D. C. (USNM), Mr. J. C. Daniel, Bombay Natural History Society, Bombay, India (BNHS), Dr. Ilja S. Darevsky, Zoological Institute, Academy of Sciences, Leningrad, USSR (ZIAS), and Dr. Yehudah L. Werner, Hebrew University, Jerusalem, Israel (HUJ). David Leviton assisted in making counts and measurements of specimens examined. All drawings were executed by Miss Betsey Hutchings.

Genus *Lytorhynchus* Peters

Lytorhynchus PETERS, 1862, Monatsb. Akad. wiss. Berl., p. 273 (type species *Heterodon diadema* Duméril, Bibron and Duméril, by monotypy).

Chatachlein JAN, 1863, Arch. Zool. Anat. Phys., vol. 2, p. 228 (type species *Heterodon diadema* Duméril, Bibron and Duméril, by monotypy).

Acantiophis GÜNTHER, 1875, Proc. Zool. Soc. London, p. 232 (type species *Acantiophis paradoxus* Günther, by monotypy).

Catachlaena BLANFORD, 1881, Proc. Zool. Soc. London, p. 678 (emendation of *Chatachlein* Jan, therefore takes same type species).

Lythorhynchus DOUMERGUE, 1901, Essai Fauna Herp. Oranie, p. 267 (emendation of *Lytorhynchus* Peters, therefore takes same type species).

DEFINITION. Maxillary teeth 6–9, last two longer than others and separated from them by an interval; palatine teeth 3–5; pterygoid teeth 0–3. Head slightly distinct from neck, with cuneiform, projecting snout; premaxillary either narrowed and pointed, or truncate with concave depression at tip, lateral horns (maxillary processes) arise about midway between ends, project posteriorly and form acute angle with longitudinal axis; supraoccipital does not border foramen magnum; eye moderate or large, with vertically elliptic pupil; rostral large, projecting, angularly bent in profile, concave inferiorly; nostril oblique slit between two large nasals. Body elongate, cylindrical; scales smooth or feebly keeled, without apical pits, in 19: 19: 17 or 15 rows; ventrals obtusely angulate laterally; tail moderate or short, subcaudals paired. Hemipenes symmetrical, spinose for half their length with shallow calyces in the distal half.

REMARKS. Described in 1862 by Karl Peters, the type species is *Heterodon diadema*, by monotypy. Various authors have sought to include in *Lytorhynchus* the North American species of leaf-nosed snakes, currently referred to *Phyllo-rhynchus* by North American herpetologists, the most recent being that of Andrushko and Mikkay (1964). We cannot subscribe to this view. The two nominal genera differ in many ways. For example, the premaxillary of *Phyllo-*

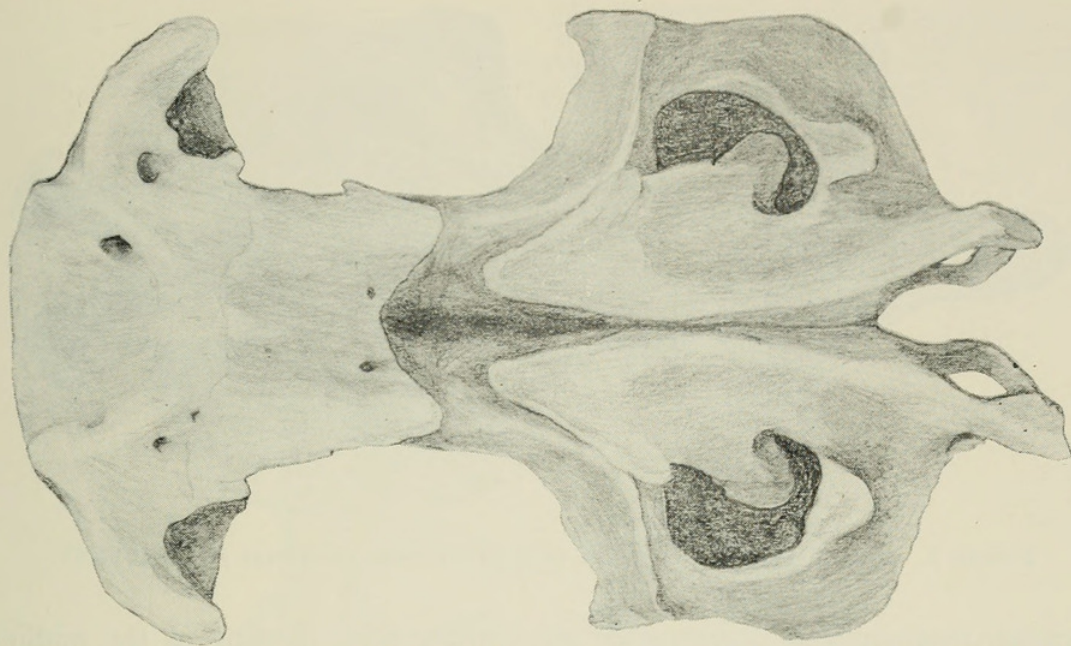


FIGURE 1. Ventral view of premaxilla of *Phyllorhynchus decurtatus perkinsi* (CAS 79687).

rhynchus (fig. 1) is a large stout structure with the maxillary processes rising from its anteriormost end and projecting at almost right angles from the body of the premaxillary bone. The structure in *Lytorhynchus* (figs. 2 and 3), besides being narrower, has the maxillary processes rising from a point about at the middle of the core and extending posteriorly at an acute angle. We might also cite the differences in the supraoccipital which in *Phyllorhynchus* borders the

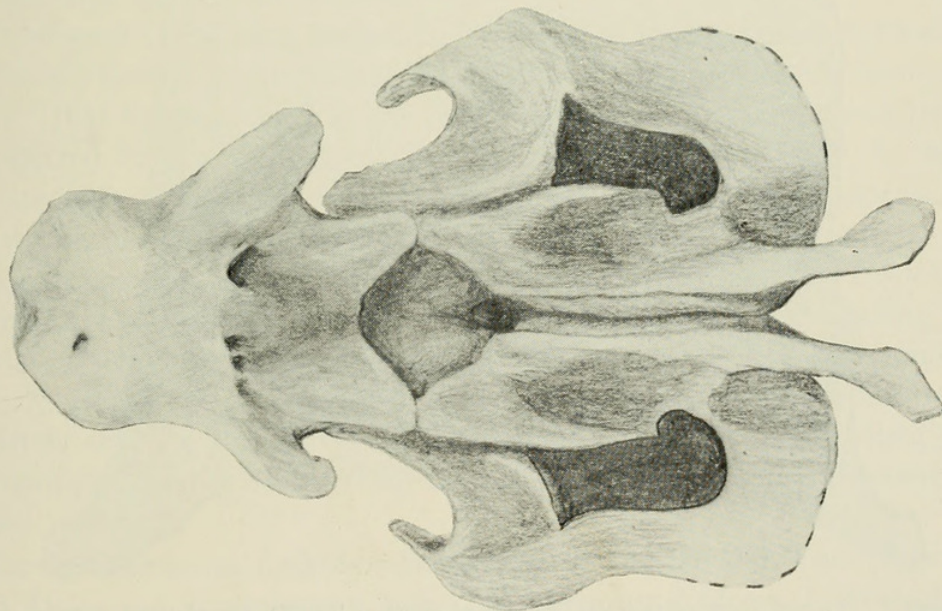


FIGURE 2. Ventral view of premaxilla of *Lytorhynchus gaddi* (CAS 97609).

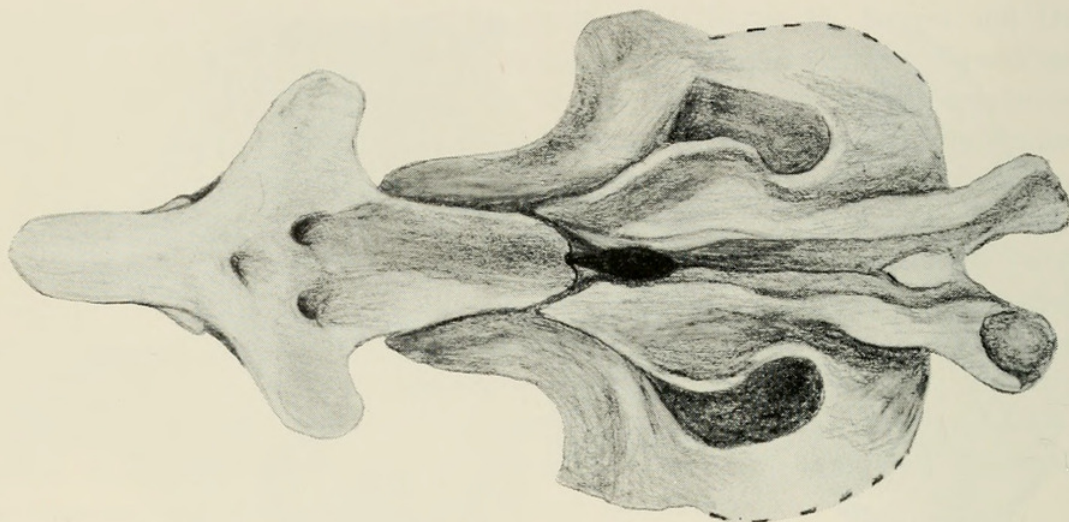


FIGURE 3. Ventral view of premaxilla of *Lytorhynchus ridgewayi* (CAS 101409).

foramen magnum and prevents the exoccipitals from meeting in the midline (fig. 4), but in *Lytorhynchus* is excluded from the border of the foramen magnum by the exoccipitals (fig. 5). The pterygoid in *Phyllorhynchus* (fig. 6B) is shorter and stouter and the minute teeth are so positioned that the dentigerous

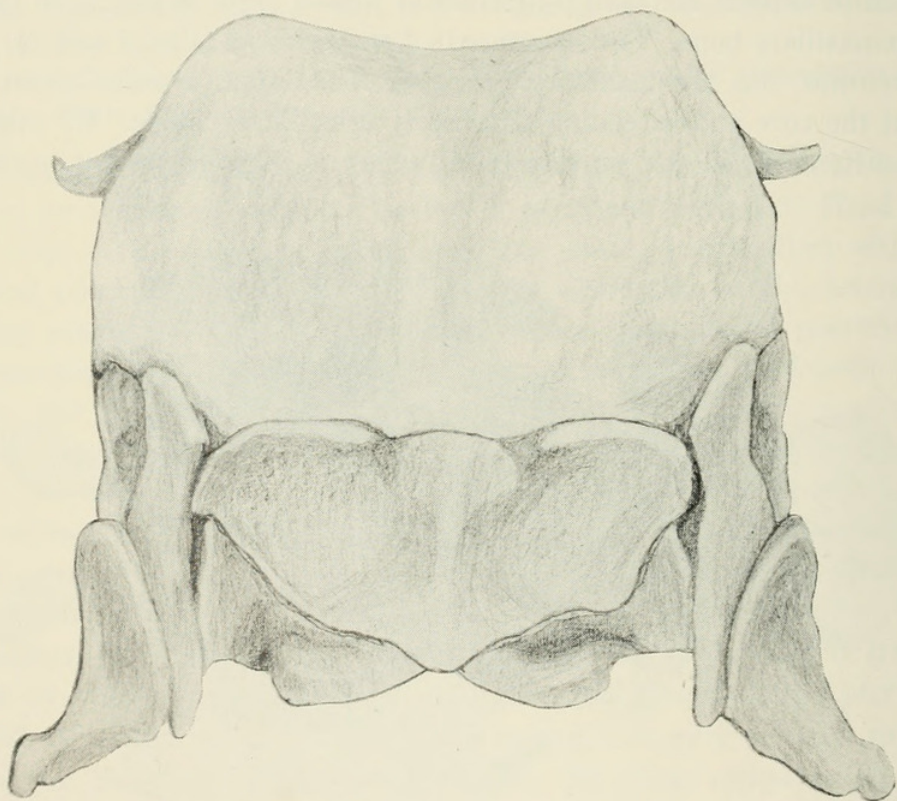


FIGURE 4. Dorsal view of occipital region of skull of *Phyllorhynchus decurtatus perkinsi* (CAS 79687).

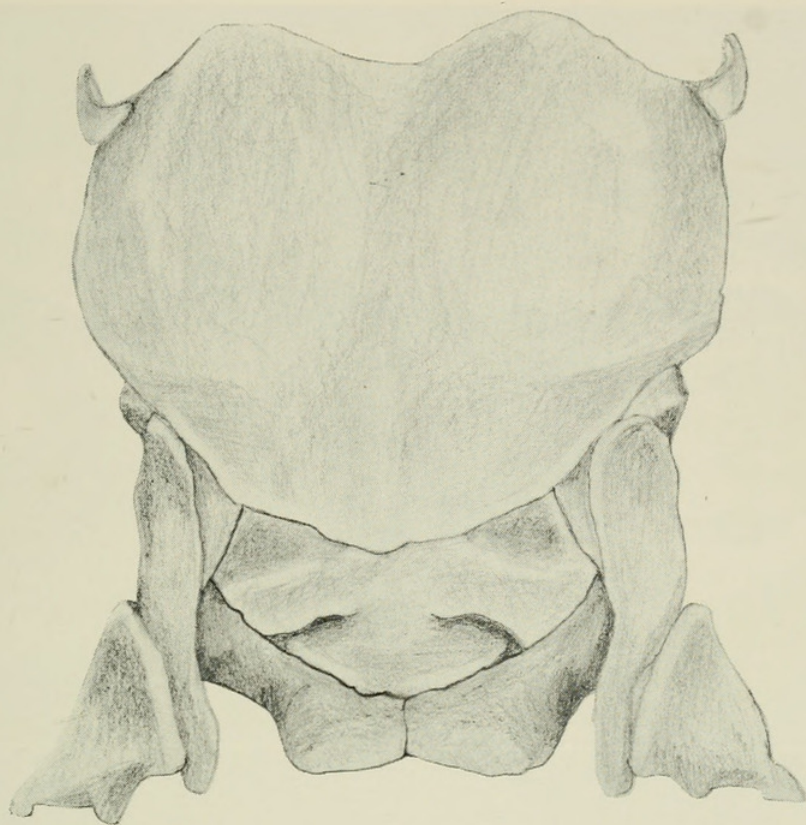


FIGURE 5. Dorsal view of occipital region of skull of *Lytorhynchus gaddi* (CAS 97609).

portion about equals the non-dentigerous portion; in *Lytorhynchus* (fig. 6A) the minute pterygoid teeth occupy only about one-fifth of the pterygoid and are positioned near its anterior end.

Underwood (1967) has suggested, by reason of his placement of *Phyllorhynchus* in his family group "Colubridae" and *Lytorhynchus* in the group "Naticidae," that the hemipenes in the former are asymmetrical, while in the latter he suspected they were symmetrical, this requiring confirmation. At hand we have one male *L. paradoxus* with a fully everted symmetrical hemipenis. However, we find in another character used by Underwood that the anterior Vidian foramen is not closer to the lateral border of the basisphenoid in *Lytorhynchus* than in *Phyllorhynchus*, his statement to the contrary notwithstanding, in our material (3 skulls of *Phyllorhynchus decurtatus* and 4 of *Lytorhynchus*, *L. gaddi*, *L. ridgewayi*, *L. maynardi*, and *L. paradoxus*). Thus, while we agree completely that *Phyllorhynchus* and *Lytorhynchus* are entirely distinct genera, we cannot confirm the basis for his allocation of these genera to different family groups.

The nominal genus *Lytorhynchus* is restricted to the Old World, specifically North Africa and Southwestern Asia. *Lytorhynchus diadema*, *L. kennedyi*, and *L. gaddi* are members of one section of the genus; we are not at all certain how

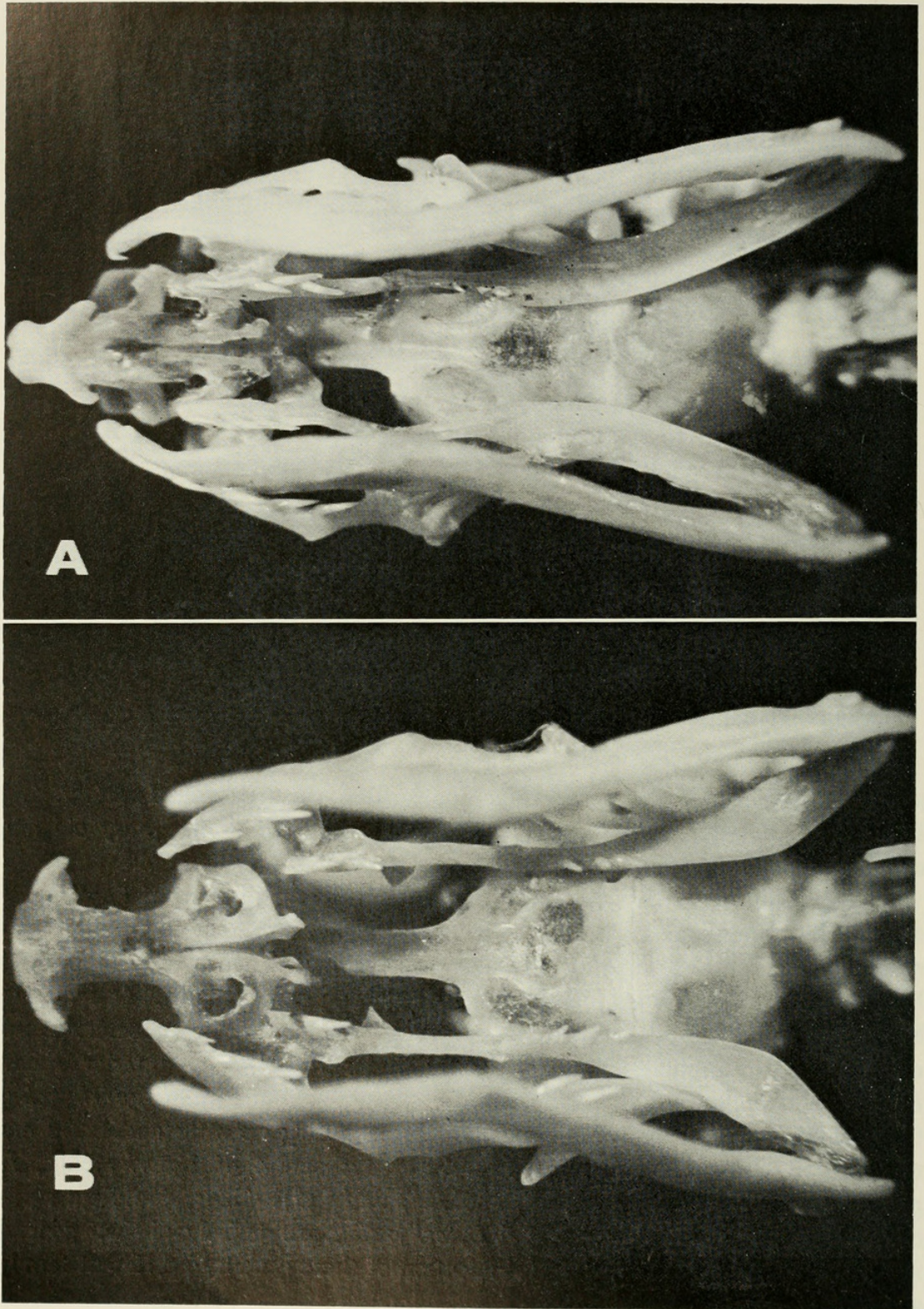


FIGURE 6. Ventral view of palatopterygoid arch of: A. *Lytorhynchus gaddi* (CAS 97609); B. *Phyllorhynchus decurtatus perkinsi* (CAS 79687).

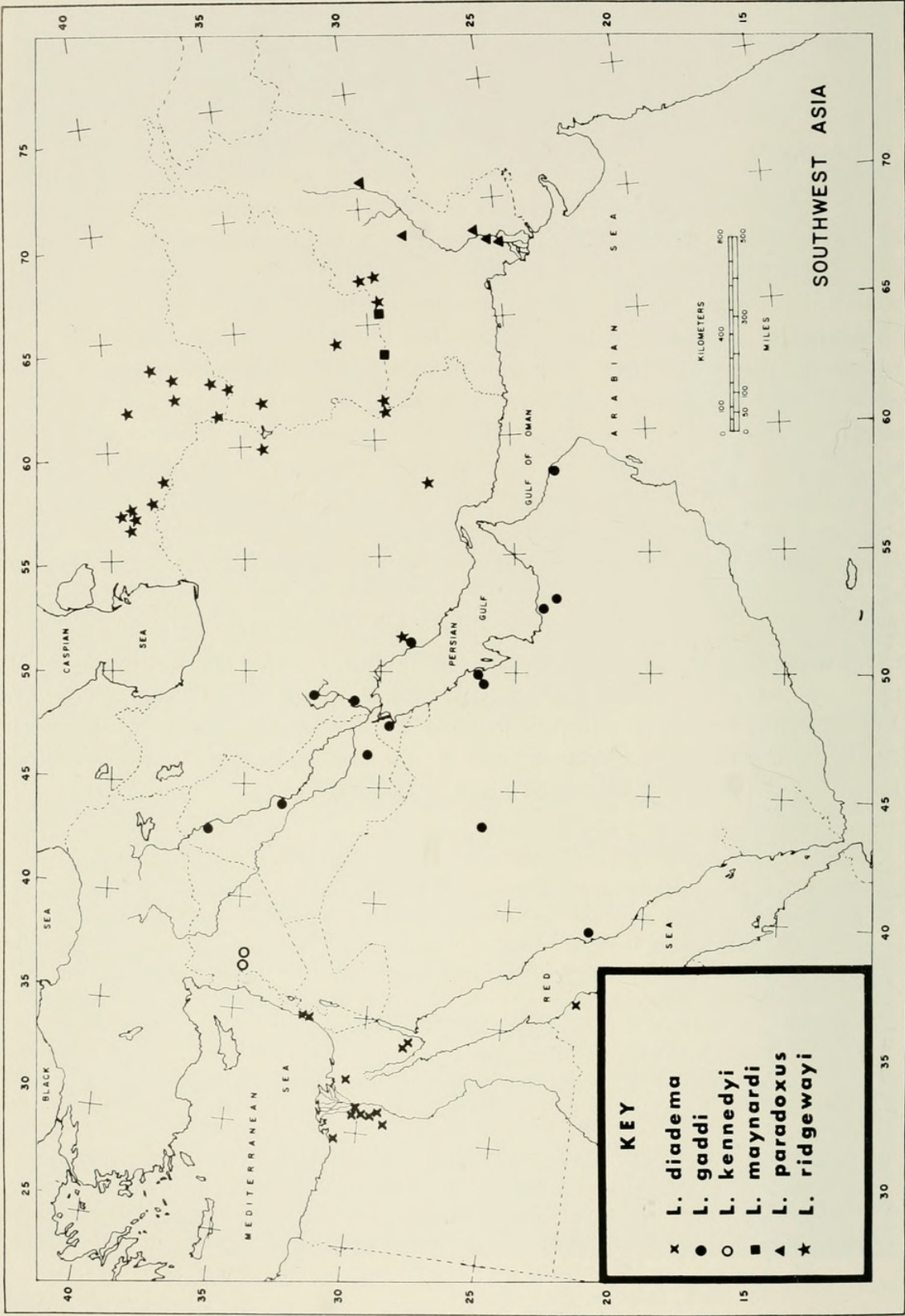
to treat *L. ridgewayi*, *L. paradoxus*, and *L. maynardi*, but it seems likely that the latter two are more closely allied to one another than is either to *L. ridgewayi*.

Lytorhynchus diadema is the most widely distributed member of the genus, being found in North Africa from the Atlantic coast to the Red Sea and thence in the Sinai and northward to the west of the "Jordan Rift" along the Mediterranean coast at least to Jerusalem. Kramer and Schnurrenberger (1963, p. 505) give counts which suggest the possibility that geographical races might be defined, but on the basis of data and material available to us we cannot recognize taxonomically distinct subunits. *Lytorhynchus gaddi* appears to be widely distributed in the Arabian Peninsula (fig. 7) south and east of the "Jordan Rift," north into Iraq and around the head of the Persian Gulf into extreme southwestern Iran. The last member of the "*diadema*" group, *L. kennedyi*, is known with certainty only in Syria from between Homs and Palmyra, and if we are correct in presuming Werner's specimen of *L. diadema* is a "*kennedyi*," then it is known from west of Damascus too, both localities for *L. kennedyi* being in the lowland desert north and east of the "rift."

The distributions of the eastern and western species complexes of *Lytorhynchus* overlap in the Province of Fars in southwestern Iran. *Lytorhynchus ridgewayi* has managed to extend its distribution as far west as Ahram, near Bushire, in Iran, and north into Transcaspia. The easternmost species, *Lytorhynchus paradoxus*, has been taken at a number of localities, mostly along the trend of the Indus River, though not necessarily in its immediate vicinity. *Lytorhynchus maynardi* appears isolated in the interior basins of northern Baluchistan and southern Afghanistan; so few specimens have been taken, however, that the extent of its distribution is still uncertain.

KEY TO THE SPECIES OF THE GENUS *Lytorhynchus*

- 1a. Rostral shield broadly truncate, as broad at its base as at its anteriormost projection.
 - 2a. Pattern of black crossbars very sharply defined, bars with intense black pigment, 23-27 blotches on body, 8 on tail *L. kennedyi*
 - 2b. Pattern of dark brown to black ovoid bars distinct or not, but if distinct not intense black, each scale in dark bar usually with light center; 30-55 blotches on body, 9-13 on tail.
 - 3a. Ventrals 155-177; total of ventrals and subcaudals 197-215 *L. diadema*
 - 3b. Ventrals 173-195; total of ventrals and subcaudals 212-240 *L. gaddi*
- 1b. Rostral shield narrowed or pointed, broader at its base than at its anteriormost projection.
 - 4a. Anal shield usually single, occasionally divided; prefrontals usually united; ventrals 165-188; ground color grayish brown with series of darker brown, not black, blotches, not crossbars *L. ridgewayi*
 - 4b. Anal shield usually divided; prefrontals paired; ventrals variable.
 - 5a. Ventrals 169-185; ground color grayish brown with series of darker brown, not black, blotches, not crossbars *L. paradoxus*
 - 5b. Ventrals 187-202; ground color yellowish green, with distinct well defined series of narrow black crossbars *L. maynardi*



“*DIADEMA*” group

DEFINITION. Rostral truncate, as broad at its base as at its anteriormost projection; anterior portion of premaxillary broad, slightly bilobate, choanal portion broad and deeply notched (fig. 1).

Included species: *Lytorhynchus diadema* (Duméril, Bibron and Duméril); *Lytorhynchus gaddi* Nikolsky; *Lytorhynchus kennedyi* Schmidt.

Lytorhynchus diadema (Duméril, Bibron, and Duméril).

(Figures 8–10.)

- Heterodon diadema* DUMÉRIL, BIBRON, and DUMÉRIL, 1854, Erp. Gén., vol. 7, p. 779 (type loc: Algeria; type in Paris Museum [MHNP 7560]). GERVAIS, 1857, Mém. Ac. Montpellier, vol. 3, p. 511, pl. 5, fig. 1. KLUNZINGER, 1878, Zeitschr. Ges. Erdk. Berl., vol. 13, p. 95 (not seen).
- Simotes diadema*, GÜNTHER, 1858, Cat. Snakes British Mus., p. 26 (Algiers; N. Africa). STRAUCH, 1862, Erp. Algeria, p. 53 (not seen). BOETTGER, 1879, Ber. Senckenberg Mus., p. 61 (not seen).
- Chatachlein diadema*, JAN, 1863, Arch. Zool. Anat. Phys., vol. 2, fasc. 2, p. 228 (18 of reprint) (Algerie); 1865, Icon. Gen., livr. 10, pl. 6, fig. 2.
- Lytorhynchus diadema*, PETERS, 1862, Monatsber. Akad. wiss. Berlin, p. 272, pl. 1, fig. 1 (new combination). BOULENGER, 1891, Trans. Zool. Soc. London, vol. 13, pp. 145–146 (Tunisia [Mraïer; Ferriana] description; distribution). KÖNIG, 1892, Verh. (S. B.) nat. Verh. Bonn, p. 22 (not seen). MATSCHIE, 1893, Sitzb. Ges. Naturf. Berlin, p. 31 (not seen). BOULENGER, 1893, Cat. Snakes British Mus., vol. 1, p. 415 (part: Algeria; Egypt [Gizeh, Abou-Roash (= Abu Rawash)]). OLIVIER, 1894, Mém. Soc. Zool. France, vol. 7, p. 119 (not seen). FRANCAVGLIA, 1896, Bull. Soc. Rom. Stud. Zool., vol. 5, p. 36 (not seen). ANDERSON, 1896, Herp. Arabia, pp. 87, 107 (part: Algerian Sahara to Egypt [W. bank Suez Canal between Suez and Ismailia, Abu Roash (= Rawash), Gizeh], Senaar District). BOETTGER, 1898, Kat. Rept. Senckenberg Mus., II. Schlangen, p. 46 (Jaffa; Süd-Tunis). ANDERSON, 1898, Zool. Egypt., Rept. and Batr., p. 271, pl. 37, fig. 3 (part: Egypt [between Suez and Ismailia, Abu Roash (= Rawash), Gizeh]; Aïn Sefran, Algeria; Jaffa). FLOWER, 1933, Proc. Zool. Soc. London, 1933, p. 815 (Egypt [Bir Hooper, Giza Pyramids, Eiu el Shams, Ezbet el Zeitun, Abu Zabab, Kantara, Ismailia, Mahadet, Mohammadia]; Palestine [Gaza, Rashleh]). VILLIERS, 1950, Bull. Inst. Française Afr. Noire, Initiations Africains II, p. 79 (part: “Afrique du Nord . . . Mauritanie”). SCHMIDT AND MARX, 1956, Fieldiana: Zool., vol. 39, p. 30 (Sinai). SOCHUREK, 1956, Aquar. u. Terr., Leipzig, vol. 3 (W. Algeria; not seen). VILLIERS, 1956, Bull. Inst. Française Afrique Noire, vol. 18A (Mauritanie). SAINT-GIRONS, 1956, Arch. Sci. Inst. Cherifien, Rabat, no. 8 (Morocco). SCHMIDT AND MARX, 1957, Bull. Zool. Soc. Egypt, vol. 1955–56, no. 13, p. 25 (Egypt [2 mi. N Bir Kansisrob]). SCHMIDT AND INGER, 1957, Living Reptiles of the World, figure on p. 223. KRAMER AND SCHNURRENBERGER, 1958, Aquar. Terr. Zeits., vol. 11, p. 57 (Libya [El Hameimat; südlich von El Adem]); 1959, Mitt. naturf. Ges. Bern, N. S., vol. 17 (Libya). DOMERGUE, 1959, Arch. Inst. Pasteur Tunis, vol. 36 (N. Africa). VILLIERS, 1963, Inst. Afrique Noire, Initiations Africaines II, ed. 2, p. 111, text figs. 136–138 (part: “Afrique du Nord . . . Mauritanie”). MARX, 1968, U.S. Naval Med. Res. Unit No. 3, Cairo, Egypt, Spec. Publ., p. 34 (Egypt [Sinai: St. Catherine’s Monastery

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FIGURE 7. Distribution of species of *Lytorhynchus* in southwestern Asia.

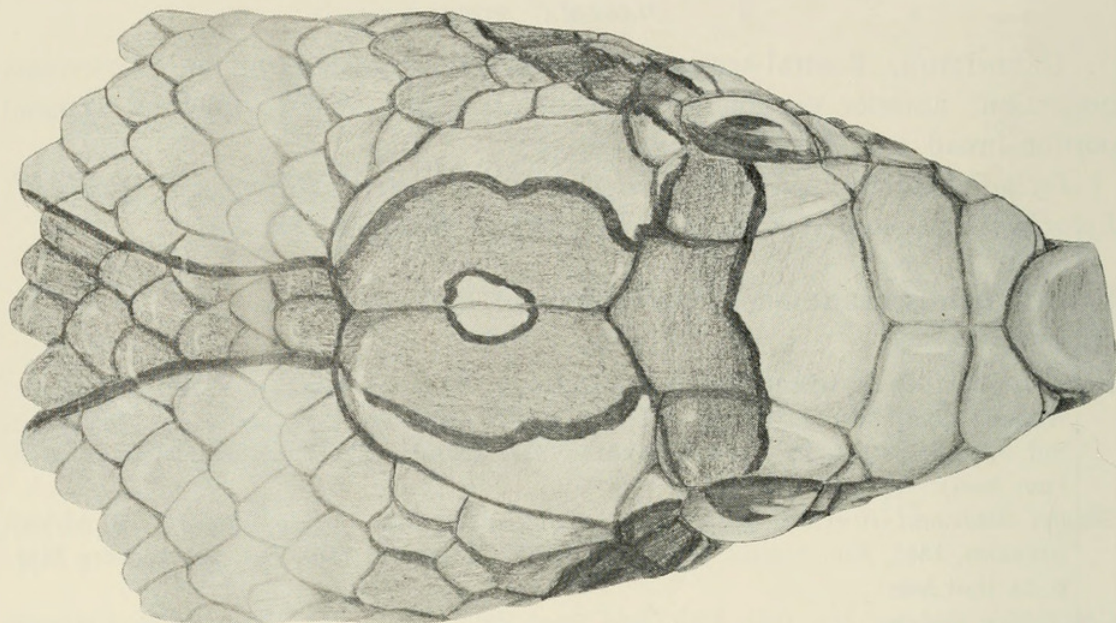


FIGURE 8. Dorsal view of head of *Lytorhynchus diadema* (USNM 134681).

area, Raba. Southeastern Desert: Gebel Elba, 3.2 km. N Bir Kansisrob. Giza: Abu Rawash area, Manshiyet, Radwan, El Qatta. Faiyum: Kom O Shim, Fanus, Wadi Muwellihi Bir Dakaar area. Matruh: Burg el Arab]].

Lytorhynchus diadema diadema, HAAS, 1952, Copeia, no. 1, p. 22 (Palestine). PASTEUR AND BONS, 1960, Trav. Inst. Sci. Cherifien Rabat, zool. ser., no. 21, p. 84 ("Sahara et Haubs-Plateaux"). SCHNURRENBERGER, 1962, Vischr. naturf. Ges. Zürich, vol. 107 (Libya; not seen). KRAMER AND SCHNURRENBERGER, 1963, Rev. Suisse Zool., vol. 70, p. 504 (Libya).

Lithorhynchus diadema, DOUMERGUE, 1901, Essai Fauna Herp. Oranie, p. 267.

Lithorhynchus diadema hirouxii DOUMERGUE, 1901, Essai Fauna Herp. Oranie, p. 269, pl. 20, fig. 5a (type loc: d'Aïn Sefra or Mecheria, Algeria; type unknown, probably in Paris Museum).

Lytorhynchus diadema hoggarensis ANGEL, 1944, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 16, p. 419 (type loc: Hoggar, Sahara; type in Paris Museum).

MATERIAL EXAMINED (57). EGYPT: lower Nile River Valley, Cairo to Alexandria (USNM 128205). Cairo (USNM 56152, 134706). Abu Rawash (FMNH 63121–63122; USNM 124726–124727, 131120–131127, 134675–134679, 134681–134683, 136274). 4 mi. NW of Abu Rawash (FMNH 63123–63125). 4 mi. W of Abu Rawash (USNM 131119). 6–7 mi. W of Abu Rawash (USNM 131115–131118, 134680). El Mansuriya (USNM 134844–134847). Manshiyet Radwan (FMNH 75338). Gizeh (MCZ 21056). El Qatta, Imbaba (FMNH 129885). Sakkara (FMNH 63120). Shamama Halt [railroad station about midway between El Almein and El Haman] (MCZ 46843). Km. 121 along road from Cairo to Alexandria, about 21 mi. NW of Wadi Natrun (MCZ 46842). Kom-O-Shim (FMNH 67246–67247). Fanus, Tamiya (FMNH 82668). Burg el Arab, Mariut (FMNH 67245). St. Catherine Monastery, El Roba, Sinai

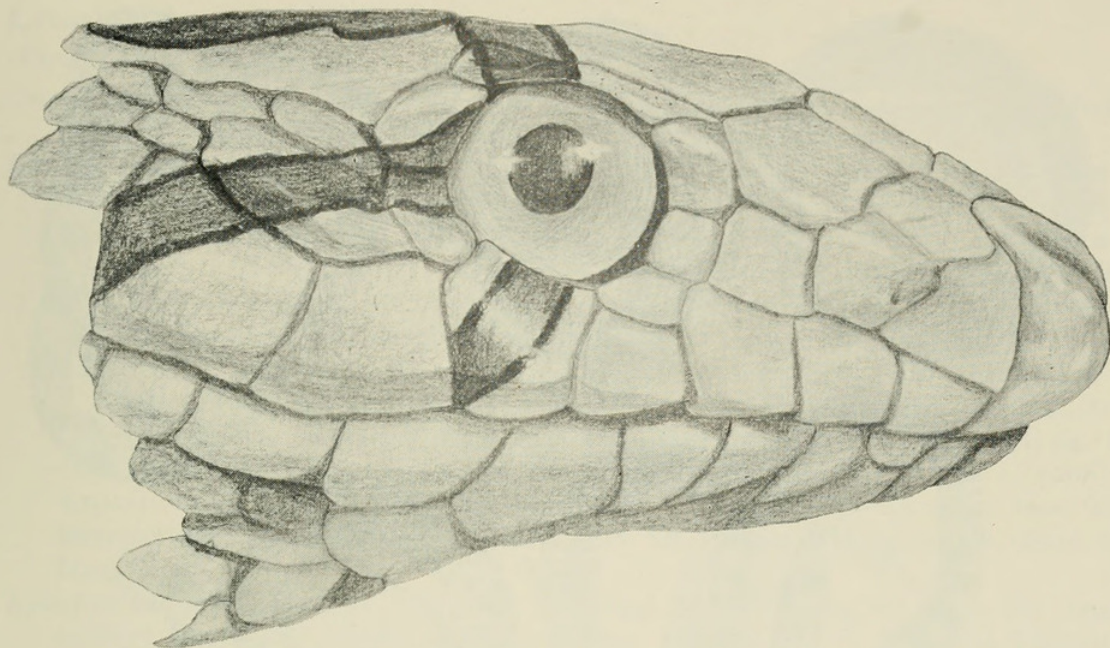


FIGURE 9. Lateral view of head of *Lytorhynchus diadema* (USNM 134681).

(FMNH 72111). 2 mi. N Bir Kansisrob, Sudan Government Administrative Area (FMNH 73538). ISRAEL: Holon (FMNH 74403). Rehovot (MCZ 52262). LIBYA: Tripoli (USNM 56153, UMMZ 67206). MOROCCO: Aglat Cedr. (MCZ 29917). NIGER: Aïr: 39 mi. N Tanout [= Tarzut] (MCZ 67901). [PALESTINE: coastal plain (FMNH 48502–48503).]

DISTRIBUTION. Reported from Morocco on the northwest coast of North Africa to Egypt, thence north along the coast to Israel. From the southern Sahara it is reported for the first time in this paper from Niger. Confirmed localities include: ALGERIA: Aïn Sefran. EGYPT: Gizeh, Abu Rawash, west bank of Suez Canal between Suez and Ismailia, Senaar District, Giza Pyramids, Ein el Shams, Ezbet el Zeitun, Abu Zabal, Kantara, Ismailia, Mahadet, Mohammadia, between Cairo and Alexandria, El Mansuriya, Manshiyet Radwan, Sak-kara, El Qatta, Shamama Halt, Kom-O-Shim, Fanus, Burg El Arab, El Raba, Bir Kansisrob. ISRAEL: Jaffa, Holon, Rehovot. LIBYA: Tripoli, El Hameimat, south of El Adem. MAURITANIA: without exact localities. MOROCCO: Aglat Cedr. NIGER: N of Tanzut.

DIAGNOSIS. Rostral shield broadly truncate, as broad at its base as its width at its anteriormost projection; pattern of brown to black ovoid blotches or cross-bars usually distinct but never intense black, each scale in dark bars usually with lighter centers; ventrals 152–177 (164.0 ± 0.58 SE [$N = 65$]);¹ subcaudals 35–49 (42.1 ± 0.38 SE [$N = 58$]);² ventrals plus subcaudals 197–215 ($206.6 \pm$

¹ Ventrals: ♂ [30] 155–167 (161.9 ± 0.55 SE); ♀ [27] 161–177 (167.2 ± 0.77 SE).

² Subcaudals: ♂ [27] 37–49 (43.6 ± 0.52 SE); ♀ [24] 35–44 (40.7 ± 0.45 SE).

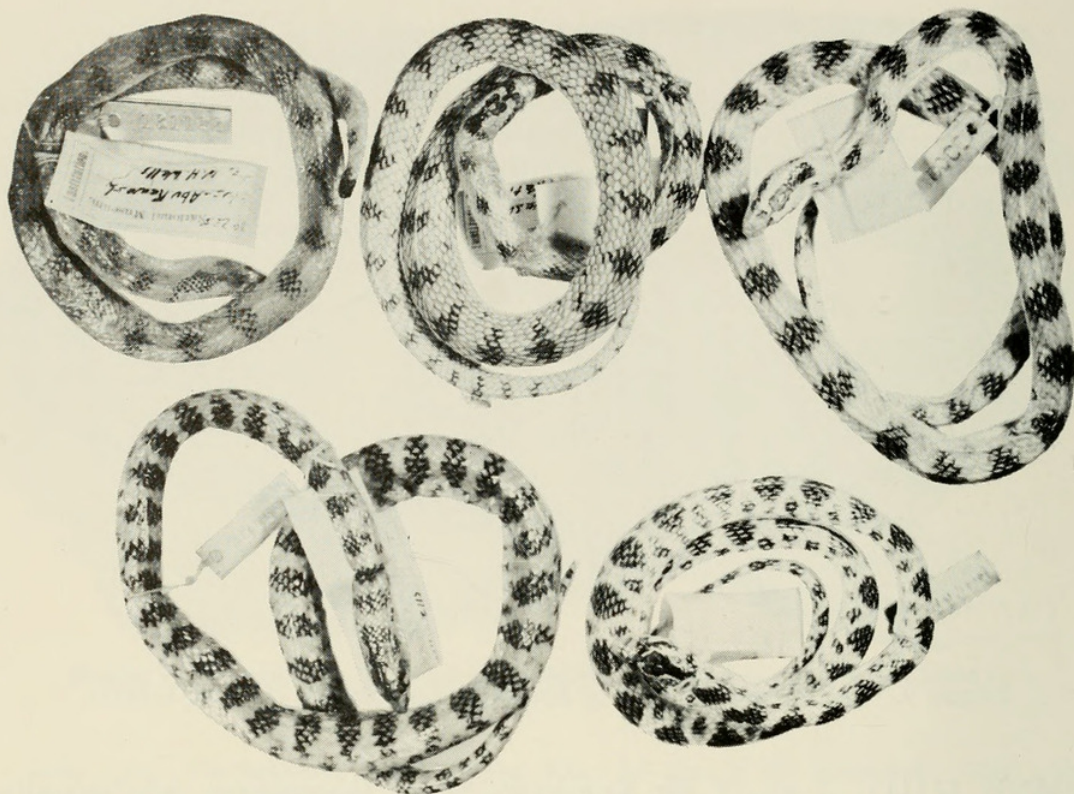


FIGURE 10. Variation in dorsal color pattern among a series of specimens of *Lytorhynchus diadema* from Abu Rawash, Egypt.

0.51 SE [N = 57]);³ body blotches 30–52 (36.6 ± 0.5 SE). Standard length (of the largest male and female examined, in mm.); ♂ 429, ♀ 391; tail length (of the largest male and female examined, in mm.); ♂ 80, ♀ 67.

REMARKS. Most of our specimens came from the vicinity of Abu Rawash, Egypt. We believe we have seen enough material from other localities and have culled enough data from the literature to gain a fairly comprehensive idea of range of variation within this species. We have not seen sufficient samples to comment on the possibility of there being geographically and taxonomically distinct populations within the species, distinguished perhaps by scale counts or small but constant color pattern differences. We must note, though, that the range of pattern variation (size of dark blotches relative to light interspaces) is quite large, even within a single sample from Abu Rawash (fig. 10). Data from Kramer and Schnurrenberger (1963) suggest the Libyan population and perhaps those from western North Africa may be taxonomically distinct at the subspecies level from the Egyptian-Sinai population.

We can add nothing to the information already given by Anderson (1898) and Flower (1933) about the habitats or behavior of these interesting animals.

³ Ventrals plus subcaudals: ♂ [27] 197–215 (206.1 ± 0.99 SE); ♀ [23] 203–215 (207.8 ± 0.72 SE).

Lytorhynchus gaddi Nikolsky.

(Figures 11–15.)

Catachlaena diadema, BLANFORD, 1881, Proc. Zool. Soc. London, 1881, p. 678, figs. 2a–b (Iran [25 mi. S Bushire]; counts and measurements of material examined).

Lytorhynchus diadema, BOULENGER, 1887, Ann. Mag. Nat. Hist. ser. 5, vol. 20, p. 408 (Muscat); 1893, Cat. Snakes British Mus. vol. 1, p. 415 (in part; Arabia [Muscat], Iran [Bushi]; composite description, counts of material examined). ANDERSON, 1896 Herp. Arabia, pp. 82 and 87 (Arabia [Maskat = Muscat], Aden); 1898, Zool. Egypt, Rept. Batr., vol. 1, p. 272 (in part; Iran [Bushi], Arabia [Maskat = Muscat]; counts of material examined). BOULENGER, 1920, Jour. Bombay Nat. Hist. Soc., vol. 27, p. 26 (Iraq [Shaiba, Faleya], Iran [Awaz]). WERNER, 1929, Zool. Jahrb., vol. 57, p. 62 (listed from Iran and Arabia); 1936, Festschr. Dr. Embrik Strand, vol. 2, p. 201 (listed from Iran). SCHMIDT, 1939, Field Mus. Nat. Hist. Zool., vol. 24, p. 74, fig. 6 (Iraq [Baghdad]; measurements and counts; suggests possible affinity with *L. gaddi*). KHALAF, 1960, Publ. Iraq Nat. Hist. Mus., p. 78 (brief composite description based on literature). ANDERSON, 1963, Proc. Calif. Acad. Sci., 4th ser., vol. 31, p. 478 (listed in Iran).

Lytorhynchus gaddi NIKOLSKY, 1907, Ann. Mus. Zool. St. Pétersbourg, vol. 10, p. 294 (type locality: Dizful [= Dezful], Khuzistan, Iran; syntypes [2] in Zoological Institute, Academy of Sciences, Leningrad). ANDERSON, 1963, Proc. Calif. Acad. Sci., 4th ser., vol. 31, p. 478 (listed from Iran).

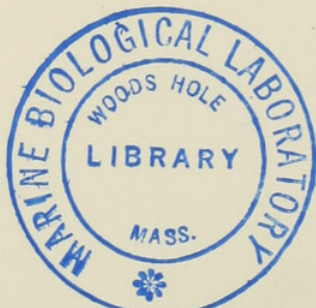
Lytorhynchus diadema mesopotamicus HAAS, 1952, Copeia, 1952, p. 22 (type locality: Addaye, 40 km. W of Mosul, Iraq; type in Department of Zoology, Hebrew University, Jerusalem, Israel). KHALAF, 1960, Publ. Iraq Nat. Hist. Mus., p. 78 (brief description).

Lytorhynchus diadema arabicus HAAS, 1952, Copeia, 1952, p. 22;⁴ HAAS, 1957, Proc. Calif. Acad. Sci., 4th ser., vol. 29, p. 80 (type locality: Abqaiq, Arabia; type in California Academy of Sciences; Arabia [Abqaiq, Dhahran, Moreiwa Post]).

MATERIAL EXAMINED (23). IRAN: Awaz (BNHS 790); Dezful (ZIAS 10288[1], one of the two syntypes of *L. gaddi*). IRAQ: Addaye, 40 km. W of Mosul (HUJ 3551, holotype of *L. d. mesopotamicus*); Baghdad (FMNH 20859); Shaiba (BNHS 789). KUWAIT: (BNHS 791). ARABIAN PENINSULA: Abu Dhabi region (CAS 97809–97810, 98092); Dhahran (CAS 84487 [holotype of *L. d. arabicus*], 84504, 84526, 84557, 84579, 84507, FMNH 73995 [all paratypes of *L. d. arabicus*]; Jidda (BNHS 792 [693, 700, 704]; Al Qurayn [26°02' N, 43°23' E] (CAS 97580); Riyadh al Khabra [26°03' N, 43°35' E] (CAS 97584); Buleariyah [26°07' N, 43°38' E] (CAS 97575); Riyadh al Khabra [26°04' N, 43°36' E] (CAS 97588).

DISTRIBUTION. ARABIAN PENINSULA: Abu Dhabi region; Dhahran; Al Qurayn; Jidda; Riyadh al Khabra; Buleariyah; Muscat. IRAN: Awaz; Dezful; Bushi. IRAQ: Addaye; Baghdad; Faleya; Shaiba. KUWAIT.

⁴ This name and a very brief indication first appear in Haas' discussion of the relationships of *L. d. mesopotamicus*, the author's conclusions being based on the examination of a series of specimens from northern Arabia in the collections of the California Academy of Sciences and referred to in a later paper (Haas, 1957). Haas made no mention of his specimens at this time nor of any locality other than "Arabia"; nevertheless, the use of the name appears to satisfy the criteria of availability, as detailed in Articles 10–17, International Code of Zoological Nomenclature. If the name is recognized as being available then the entire series of specimens Haas had before him must be regarded as syntypes. Therefore, to insure stability in the application of this name we hereby select CAS 84478 as lectotype inasmuch as this is also the designated holotype of *L. d. arabicus* Haas, 1957.



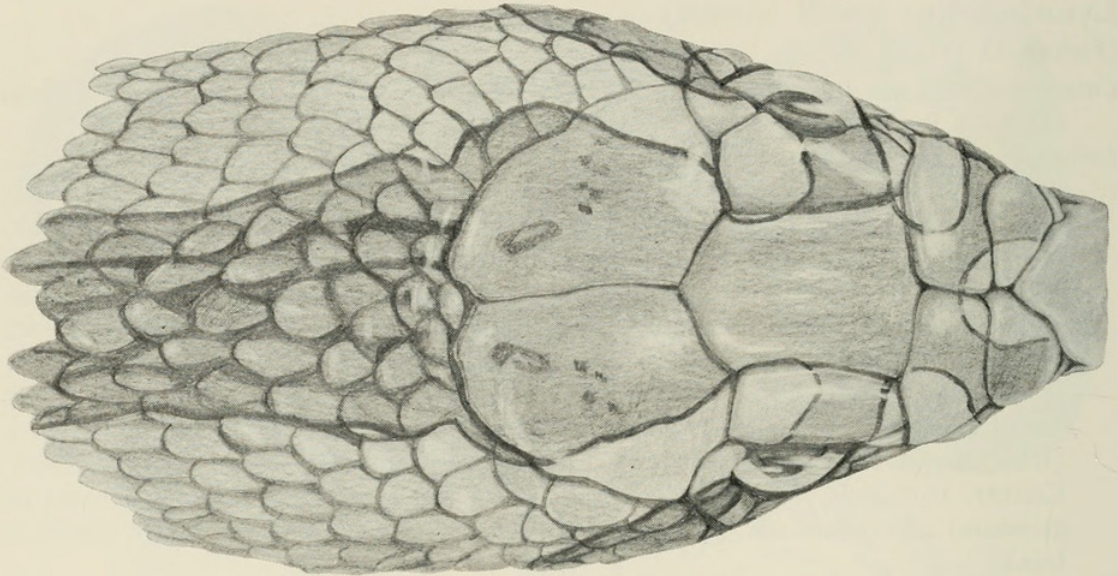


FIGURE 11. Dorsal view of head of *Lytorhynchus gaddi* (ZIAS 10288, syntype).

DIAGNOSIS. Rostral shield broadly truncate, as broad at its base as its width at its anteriormost projection; pattern of brown to black ovoid blotches or cross-bars usually distinct but never intense black, each scale in dark bars usually with lighter centers; ventrals 173–195 (184.7 ± 1.22 SE [$N = 26$]);⁵ sub-

⁵ Ventrals: ♂ [11] 173–192 (180.8 ± 1.83 SE); ♀ [15] 180–195 (187.6 ± 1.16 SE).

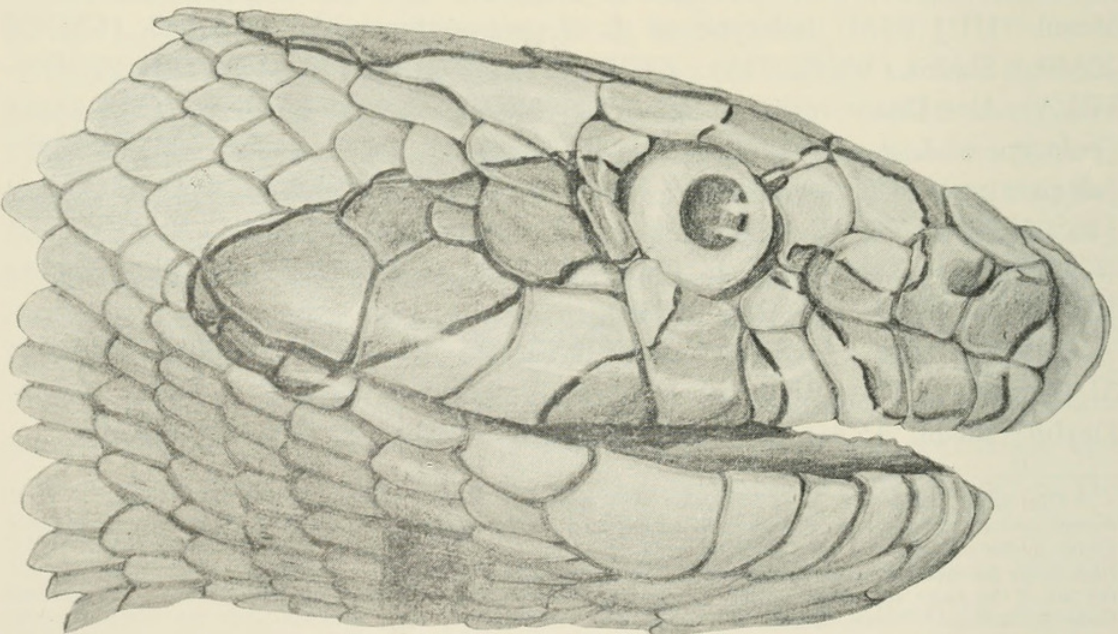


FIGURE 12. Lateral view of head of *Lytorhynchus gaddi* (ZIAS 10288, syntype).



FIGURE 13. Dorsal color pattern of *Lytorhynchus gaddi* (ZIAS 10288, syntype).

caudals 33–47 (42.12 ± 0.72 SE [N = 14]);⁶ ventrals plus subcaudals 212–240 (226.8 ± 1.36 SE [N = 26]);⁷ body blotches 33–55 (40.7 ± 1.30 SE [N = 21]). Standard length of largest male and female, in mm.): ♂ 428, ♀ 436; tail length (in mm.): ♂ 78, ♀ 71.

REMARKS. We have been fortunate in being able to examine the type specimens of each of the nominal forms we refer to this taxon. Each has been photographed, and these are included here (figs. 13–15). Having examined the types of the three nominal forms with care, and having seen a more extensive series of specimens than has heretofore been available, we do not find evidence to justify recognizing any as being distinct from *L. gaddi* Nikolsky.

That *L. gaddi* is related to *L. diadema* is obvious. The shape of the rostral, the relation of head shields to one another, and color pattern clearly attest to their closeness. They differ most strikingly in ventral and subcaudal counts, and since we have no reason to suspect the two overlap in these characteristics, or indeed in distribution, we believe it reasonable to recognize the two taxa as distinct species. *Lytorhynchus kennedyi*, also belonging to this group, differs from *L. gaddi* in color pattern (fig. 15) in addition to those character differences already mentioned for *L. diadema*.

Worthy of note is the fact that *L. gaddi* possesses a greater number of subcaudal plates than either *L. diadema* or *L. kennedyi*, and in this character agrees with members of the “*ridgewayi*” group. However, rostral shape and color pattern leave little doubt that *L. gaddi* must be grouped with *L. diadema*.

⁶ Subcaudals: ♂ [11] 39–47 (43.7 ± 0.85 SE); ♀ [15] 36–46 (40.9 ± 1.02 SE).

⁷ Total of ventrals plus subcaudals: ♂ [11] 212–239 (22.5 ± 2.25 SE); ♀ [15] 220–240 (228.5 ± 1.45 SE).

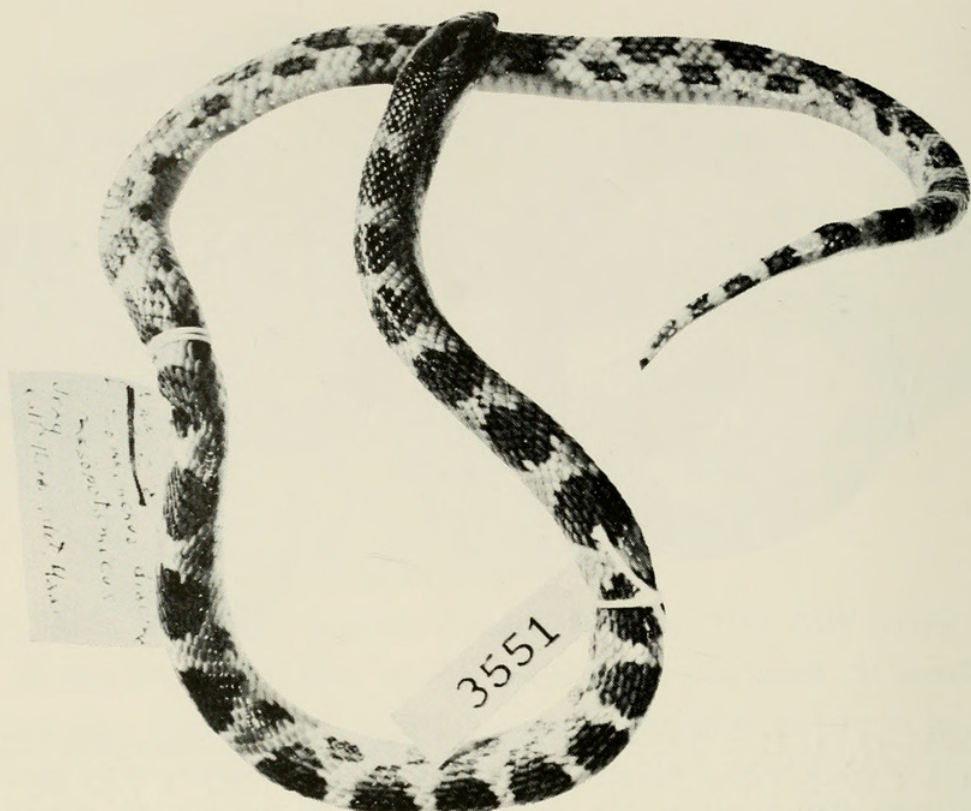


FIGURE 14. Holotype of *Lytorhynchus diadema mesopotamicus* (HUJ 3551) [= *L. gaddi*].

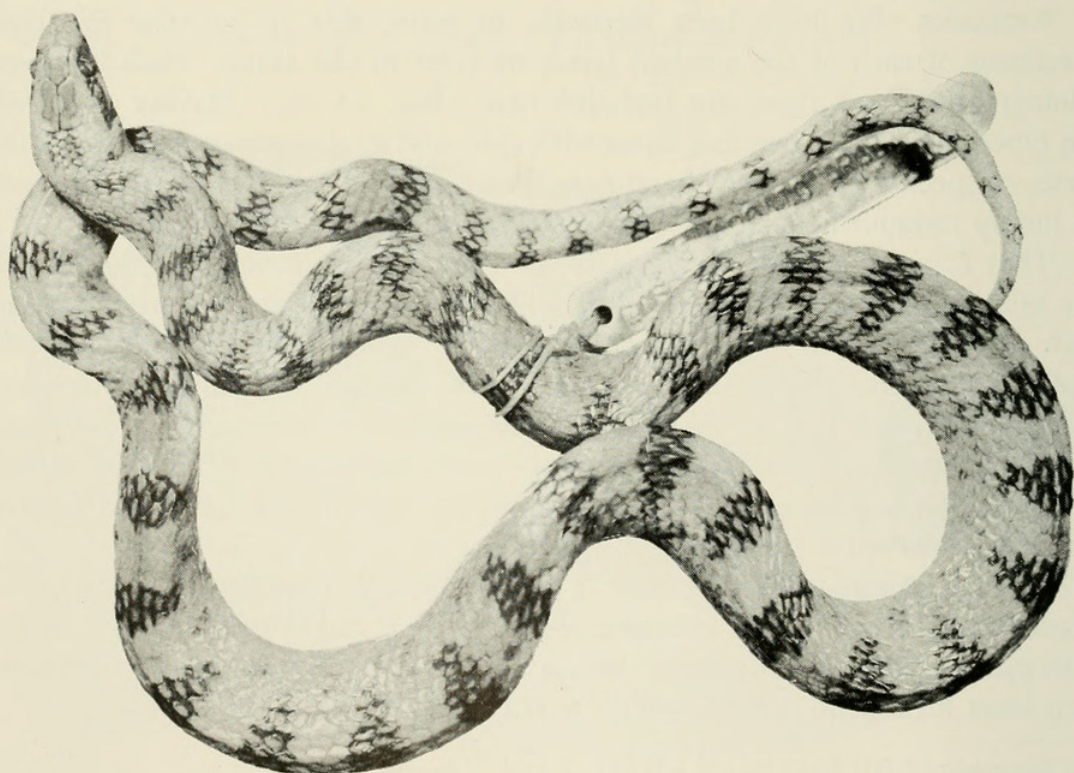


FIGURE 15. Holotype of *Lytorhynchus diadema arabicus* (CAS 84487) [= *L. gaddi*].

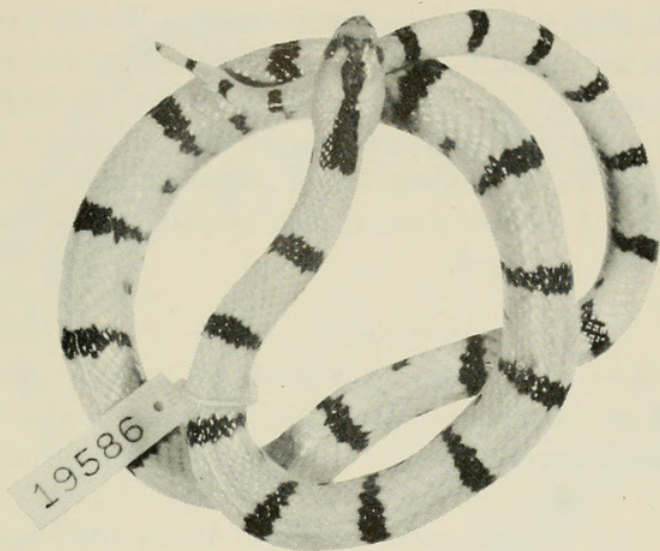


FIGURE 16. Holotype of *Lytorhynchus kennedyi* (FMNH 19586).

This species has a particularly interesting distribution. Based on available records we must conclude that it is the common lytorhynchid of the Arabian Peninsula east and south of the Jordan rift, and that it has extended its range around the head of the Persian Gulf into southwestern Iran and south and south central Iraq. We have very little information about its habitat, but based on data sent us by John Gasperetti we presume it is a dune dweller, or at least is found in and on loose sand.

***Lytorhynchus kennedyi* Schmidt.**

(Figure 16.)

Lytorhynchus diadema, ANDERSON, 1896, Herp. Arabia, p. 87 (listed from Syria). BOETTGER, 1898, Katalog Rept. Samml. Mus. Senckenberg, II, Schlangen, p. 46 (in part; listed from Syria). WERNER, 1929, Zool. Anz., vol. 81, p. 242 (Syria ["Syrische Wüste, 160 km. westlich Damaskus auf der Route der ehemaligen Wüstenpost bei Saba-Biar"]); counts on specimen examined). CORKILL, 1932, Snakes and snake bite in Iraq, London, pl. 10.

Lytorhynchus kennedyi SCHMIDT, 1939, Fieldiana, Zool., vol. 24, p. 75, fig. 6 (type locality: between Homs and Palmyra, Syria; type in Field Natural History Museum, Chicago).

Lytorhynchus diadema kennedyi, HAAS, 1952, Copeia, 1952, p. 22 (listed).

MATERIAL EXAMINED (1). FMNH 19586 [holotype] from between Homs and Palmyra, Syria.

DISTRIBUTION. SYRIA: 160 km. W of Damascus; between Homs and Palmyra.

DIAGNOSIS. Rostral shield broadly truncate, as broad at its base as its width at its anteriormost projection; pattern of black crossbars sharply defined, crossbars narrower than lighter interspaces and intense black; ventrals 163–175 [$N = 2$]; subcaudals 39–44 [$N = 2$]; ventrals plus subcaudals 202–219 [$N = 2$]; body blotches 23–27 [$N = 2$]; standard length (in mm.): ♂ 327; tail length: ♂ 56.

REMARKS. We have seen the type specimen only. Werner's record is referred to this species on the strength of its geographic position and lower number of body blotches. *Lytorhynchus kennedyi* is very close to *L. diadema*, apparently differing only in color pattern, though based on our scanty material, this is rather pronounced. We do suspect future collecting will turn up individuals intermediate between *L. kennedyi* and *L. diadema*, and at that time its taxonomic status will have to be reviewed.

"RIDGEWAYI" group

DEFINITION. Rostral narrowed, or pointed, not truncate, broader at its base than its width at its anteriormost projection; anterior portion of premaxillary narrow, projecting; posterior portion also narrow and projecting, not notched (fig. 3).

INCLUDED SPECIES. *Lytorhynchus maynardi* Alcock and Finn; *Lytorhynchus paradoxus* (Günther); *Lytorhynchus ridgewayi* Boulenger.

***Lytorhynchus maynardi* Alcock and Finn.**

(Figures 17–19.)

Lytorhynchus maynardi ALCOCK AND FINN, 1896, Jour. Asiatic Soc. Bengal, vol. 65, p. 562, pl. 14 (type locality: near Robat I, Afghanistan-Baluchistan border [see map plate 11]; syntypes [4] in Indian Museum, Calcutta, and British Museum [Natural History], London). ANNANDALE, 1904, Jour. Asiatic Soc. Bengal, vol. 73, p. 208. WALL, 1923, Jour. Bombay Nat. Hist. Soc., vol. 29, p. 619 (Baluchistan). WERNER, 1929, Zool. Jahrb., vol. 57, pp. 62 and 63 (N. Baluchistan; synonymy, distribution, key characters). SMITH, 1943, Fauna British India, vol. 3, Serp., p. 192, fig. 59 (synonymy, description, hemipenes). MINTON, 1966, Bull. American Mus. Nat. Hist., vol. 134, p. 129, pl. 28, fig. 2. (Pakistan [vicinity of Nushki]; description, natural history).

MATERIAL EXAMINED (16). PAKISTAN: Nushki (CAS 101359–101360, 101405–101406, 101475). 1.5 mi. W of Nushki (AMNH 88458–88460). 2 mi. W of Nushki (UMMZ 123435). 9–10 mi. NW of Nushki (AMNH 88461–88463). 1.5 mi. N of Ahmad Wal (AMNH 96241–96242). AFGHANISTAN: 10 km. NE of Darweshan (CAS 120493). 56 km. S and 10 km. E of Darweshan (CAS 120494).

DISTRIBUTION. AFGHANISTAN-PAKISTAN FRONTIER: Robat I [alt. 4055 ft.]. PAKISTAN: vicinity of Nushki; vicinity of Ahmad Wal. AFGHANISTAN: Registan desert region.

DIAGNOSIS. Rostral shield narrow and pointed, not truncate, broader at its base than above; prefrontals divided; upper labial shields do not border eye; ground color yellowish with distinct, well defined series of black crossbars; ventrals 187–202 (195.9 ± 0.99 SE [N = 16]) [$\delta + \text{♀}$];⁸ subcaudals 53–62 (58.7 ± 0.65 SE [N = 15]) [$\delta + \text{♀}$];⁹ ventrals plus subcaudals 246–264

⁸ Ventrals: ♂ [4] 186–198 (192.3 ± 2.1 SE); ♀ [12] 192–202 (197.2 ± 0.87 SE).

⁹ Subcaudals: ♂ [4] 60–62 (61.0), ♀ [11] 53–62 (57.8 ± 0.68 SE).

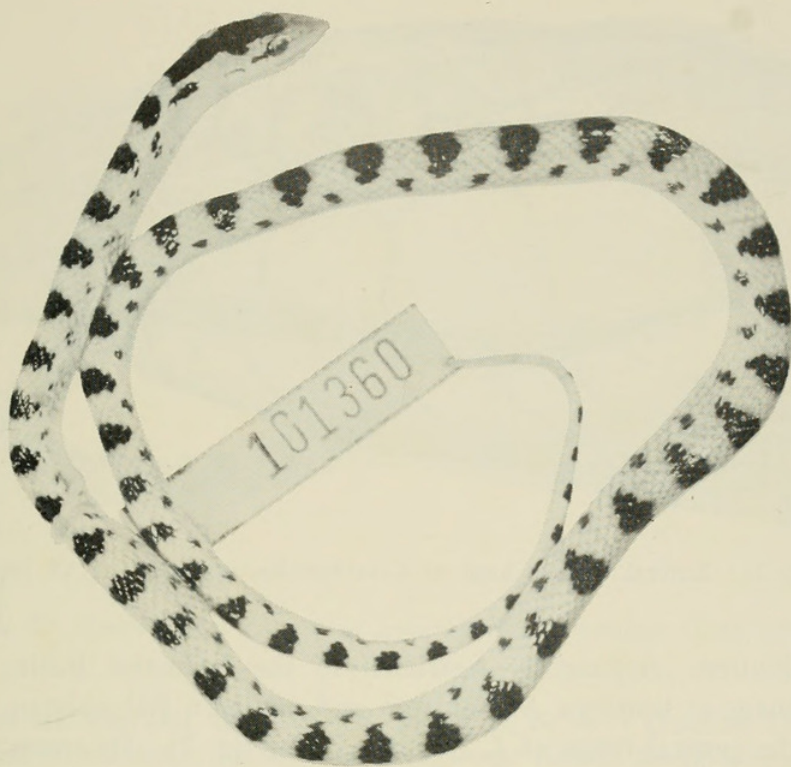


FIGURE 17. Dorsal color pattern of *Lytorhynchus maynardi* (CAS 101360).

(253.8 ± 1.07 SE [N = 16]) [$\delta + \text{♀}$]; black crossbars on body 38–51 (43.9 ± 0.89 SE [N = 16]); standard length (in mm.) for largest male and female examined: δ 298, ♀ 334; tail length (in mm.): δ 71, ♀ 70.

REMARKS. The highest ventral counts combined with its distinctive color pattern makes this species the most striking member of the genus. It is related to the “*ridgewayi*” group on the basis of its snout and general habitus as well

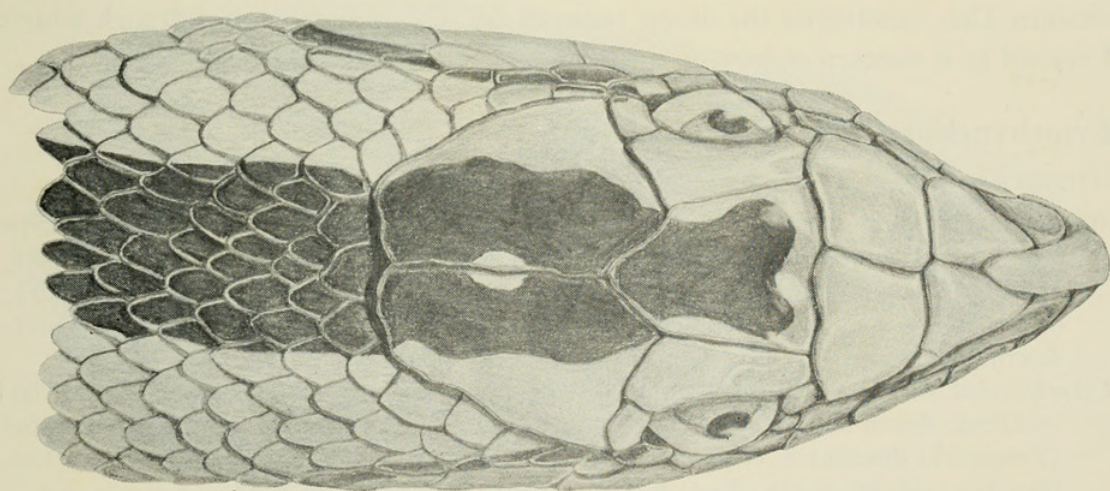


FIGURE 18. Dorsal view of head of *Lytorhynchus maynardi* (CAS 101406).

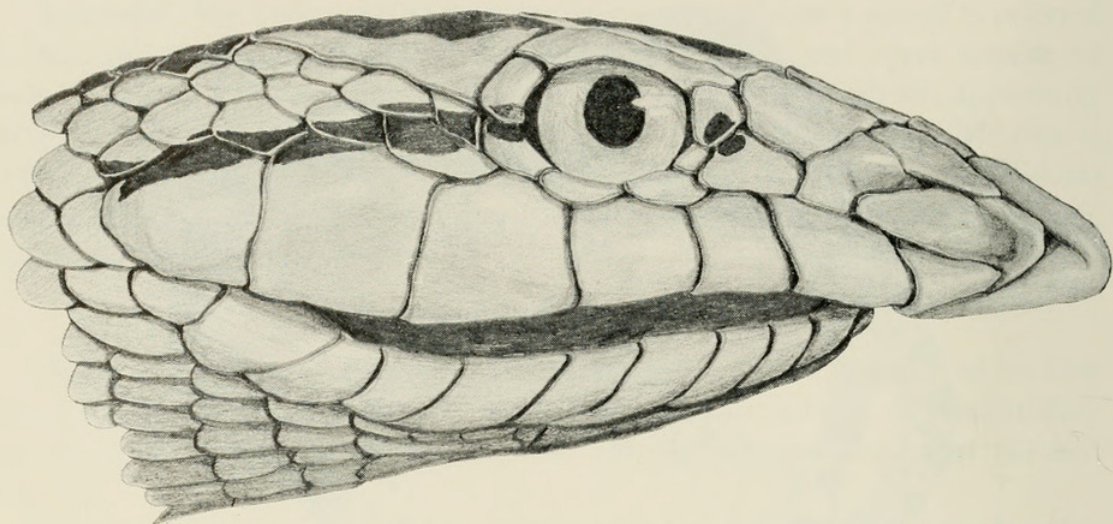


FIGURE 19. Lateral view of head of *Lytorhynchus maynardi* (CAS 101406).

as its distribution. Apparently restricted to the Helmand Basin, the major interior drainage of southern Afghanistan and northern Baluchistan, the species lies within the general range of *L. ridgewayi* (see fig. 7). Its snout structure is much closer to that of *L. paradoxus*, another member of the “*ridgewayi*” group found further east. Interestingly, *L. paradoxus* possesses the basic color pattern and ventral counts of *L. ridgewayi* but the head structure of *L. maynardi*.

Dr. Sherman Minton collected in West Pakistan during 1958–1962. In a letter dated 12 October 1966, he made the following comments:

“Concerning *Lytorhynchus* in Pakistan, *maynardi* and *paradoxus* seem to be ecological equivalents, both being restricted to fine, wind-blown sand dune habitat. All my *maynardi* have come from the region around Nushki where it is a common snake. Without referring to notes or map, I guess elevations here to be about 3000–5000 feet. I have *paradoxus* from several localities in the western Thar (including the desert between Mianwali and Muzaffargarh which I regard as a western outlier of the Thar) at elevations below 500 feet.”

***Lytorhynchus paradoxus* (Günther).**

(Figures 20–22.)

Acontiophis paradoxa GÜNTHER, 1875, Proc. Zool. Soc. London, 1875, p. 232, fig. 5 (type locality: northern India; type in British Museum [Natural History], London). MURRAY, 1884, Ann. Mag. Nat. Hist., ser. 5, vol. 14, p. 110 (Sind [Thool Talooka, at Zungipur]; color pattern, counts); 1886, Rept. Sind, p. 84 (Sind [Thool Talooka, at Zungipoor]; description).

Lytorhynchus paradoxus, BOULENGER, 1890, Fauna British India, Rept. & Batr., p. 323, fig. 98 (Sind; description, figure of head); 1893, Cat. Sn. British Mus., vol. 1, p. 416 (Sind [Zangipur]; description, counts of material examined). WALL, 1923, Jour. Bombay Nat. Hist. Soc., vol. 29, p. 619 (Sind; Punjab [Multan]). MYERS, 1947, Herpetologica, vol. 3, p. 167 (listed). MINTON, 1962, American Mus. Novitat., no. 2081, p. 16, fig. 52; 1966,

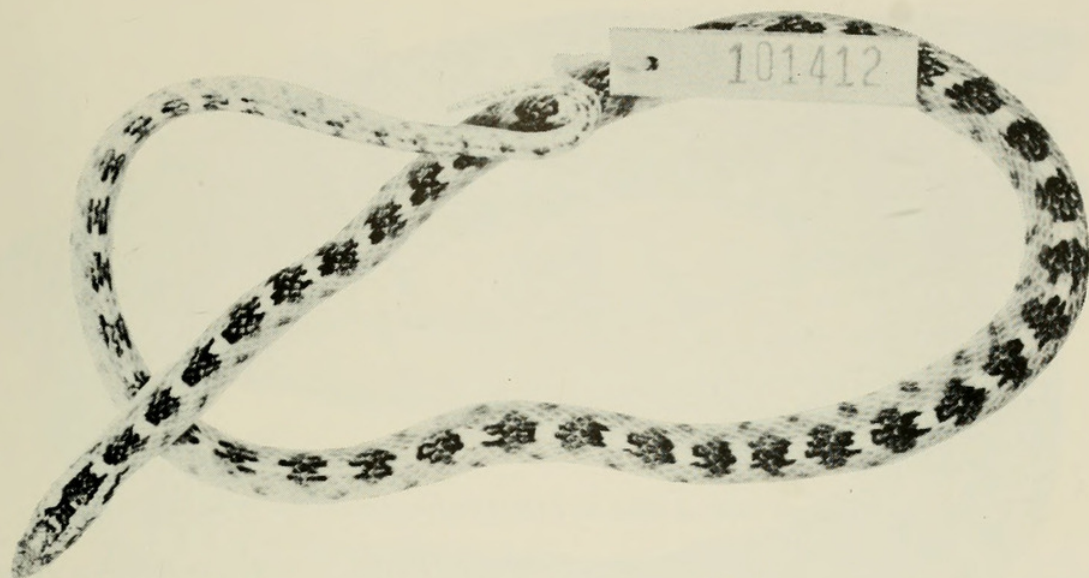


FIGURE 20. Dorsal color pattern of *Lytorhynchus paradoxus* (CAS 101412).

Bull. American Mus. Nat. Hist., vol. 134, p. 130, pl. 29, fig. 1 (Pakistan [Burra; Umar-kot; 11 mi. S. Fatehpur; Baran Nai; near Jamrao Head]; description, habits).

Lytorhynchus monticornis WERNER, 1906, Sitzb. Akad. Wiss. Wien, vol. 135, p. 243 (type locality: Sind; type in Vienna).

MATERIAL EXAMINED (7). PAKISTAN: Jungshai [= Jungshāhi] (CAS 101361, 101411–101413). 11 mi. S of Fatehpur, Muzaffargarh District (AMNH 88446). Baran Nai, near Bholāri, Dādu District (AMNH 89295). Sandhills near Jāmrao Head, Sānghar District (AMNH 87461).

DISTRIBUTION. WEST PAKISTAN: Zangipur, Jungshāhi, vicinity of Fatehpur, Baran Nai (SW of Kotri), vicinity of Jāmrao Head, Burra, Umar-kot. A

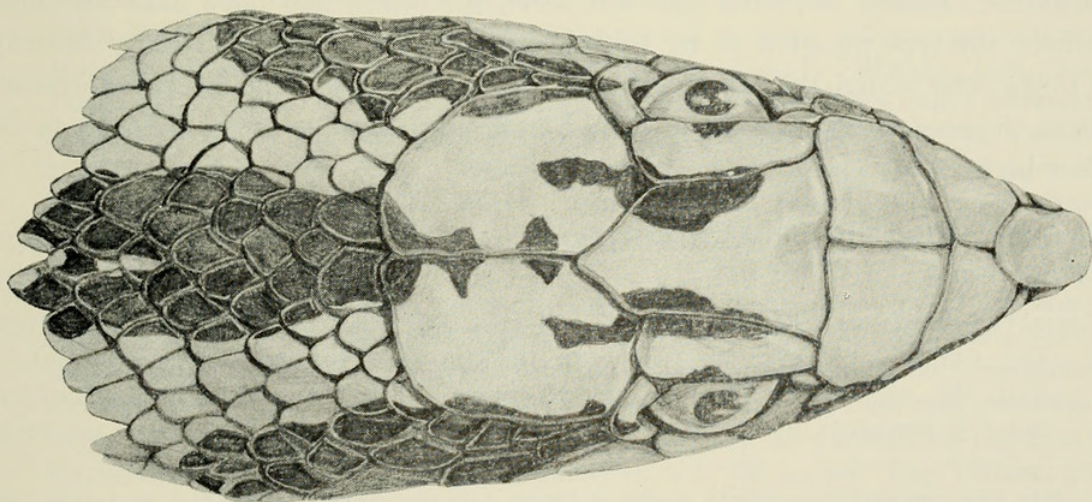


FIGURE 21. Dorsal view of head of *Lytorhynchus paradoxus* (CAS 101361).

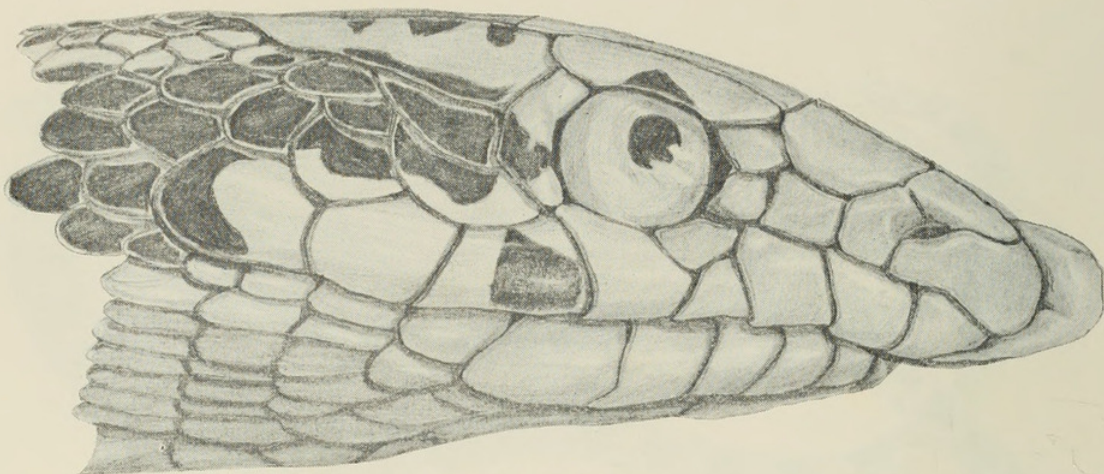


FIGURE 22. Lateral view of head of *Lytorhynchus paradoxus* (CAS 101361).

specimen in the collection of the Bombay Natural History Society (BNHS 5188, not examined by us) is from PAKISTAN: Thar and Pakar District.

DIAGNOSIS. Rostral shield narrowed and pointed, not truncate, broader at its base than above; prefrontals divided; fifth upper labial usually borders eye; light brown with series of medium brown blotches on dorsum; ventrals 169–185 (176.5 ± 1.99 SE [$N = 6$]) [$\delta + \text{♀}$]; subcaudals 47–51 (48.7 [$N = 3$]) [$\delta + \text{♀}$]; total of ventrals plus subcaudals 220–227 (224.0 [$N = 3$]) [$\delta + \text{♀}$]; dorsal body blotches 44–51 (48.3 ± 1.15 SE [$N = 6$]) [$\delta + \text{♀}$]; standard length (of largest male and female examined, in mm.): δ 298, ♀ 325; tail length: δ 58, ♀ 49+ (tip missing; this is the only female seen).

REMARKS. We have already recorded Dr. Minton's observations on *L. paradoxus* (personal correspondence) in our discussion of *L. maynardi*. Regrettably, little is known of this small, secretive snake, few specimens having been taken; those available for study do not shed any further light on its habits or behavior. Indeed, we have seen but seven specimens and have data for three others, the type reported on by Günther in 1875 and two examined by Murray (1884) who stated that the collector, Mr. F. Gleadow, dug the specimens up from depressions in an area of wind-blown sand forming small hills 20 to 30 feet high.

***Lytorhynchus ridgewayi* Boulenger.¹⁰**

(Figures 23–25.)

Lytorhynchus ridgewayi BOULENGER, 1887, Ann. Mag. Nat. Hist., ser. 5, vol. 20, p. 413 (type loc: Chinkilok, Afghanistan; type in British Museum). BOETTGER, 1888, Zool. Jahrb., Syst. Abt., vol. 3, p. 924 (Transcaspia). BOULENGER, 1889, Trans. Linnaean Soc. London, vol. 5, p. 102, pl. 11, fig. 1; 1883, Cat. Sn. British Mus., vol. 1, p. 415. ALCOCK AND FINN,

¹⁰ In the accompanying synonymy a number of Russian references are included to which we have not had access. We are unable to confirm these references. They were abstracted from various sources, especially the Zoological Record.

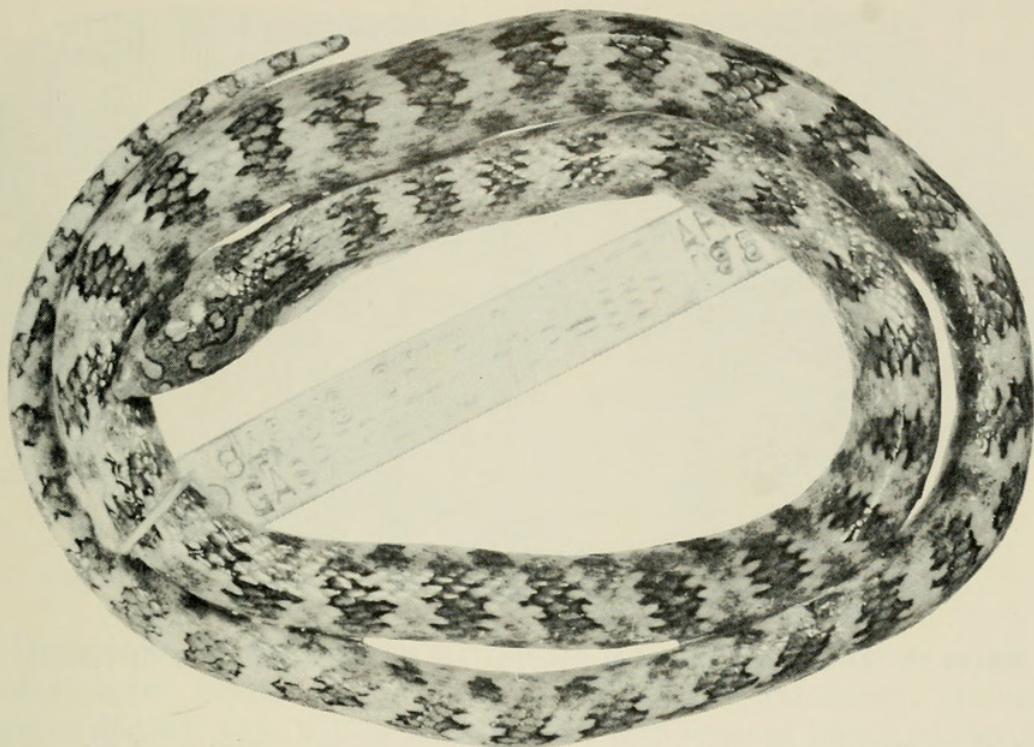


FIGURE 23. Dorsal color pattern of *Lytorhynchus ridgewayi* (CAS 84899).

1896, Jour. Asiatic Soc. Bengal, vol. 65, p. 526 (Afghanistan [Saindak, 3000 ft.]). NIKOLSKY, 1899, Herp. Turan, p. 59 (not seen). MICHAILOVSKII, 1904, Ezhegodnik Zool. Mus. Akad. Nauk, vol. 9, p. 43 (not seen). NIKOLSKY, 1905, Herp. Rossica, p. 244 (Persia [Terra Zirkuch: Atkaul]; Transcaspia); 1907, Oprevel. presm. zemnovod. Rossiskoi imperii Kharkov, p. 114 (not seen). WALL, 1911, Jour. Bombay Nat. Hist. Soc., vol. 20, p. 1037. NIKOLSKY, 1916, Fauna Russie, p. 111, figs. 22-23 (Persia oriental [Terra Zirkuch: Atkaul; Dunin, Transcaspia]). SHKAFF, 1916, Izv. Kavkazsk. otdela RGO, vol. 24, p. 181 (not seen). TZAREWSKI, 1917, Ann. Mus. Zool. Leningrad, vol. 22, p. 88 (not seen). BOBRINSKII, 1923, Oprevel. zmei Turkestan. kraya. Izd-vo SAGU, Tashkent, p. 10 (not seen). WALL, 1923, Jour. Bombay Nat. Hist. Soc., vol. 29, p. 619 (Transcaspia; Afghanistan; Baluchistan [Man, Gusht, Kacha, Sib, Kanki, Quetta]). WERNER, 1929, Zool. Jahrb., vol. 57, p. 62. CHERNOV, 1934, Presm. Turkmenii, Trudy SOPS, Seriya Turkmen-skaya, vol. 6, p. 274 (not seen). WERNER, 1936, Festschrift Strand, vol. 2, p. 201. TEREJTJEV AND CHERNOV, 1936, Kratkii opredel. zemnovod. presm. kaiushchikhssa SSSR, p. 59 (not seen). LAPTEV, 1937, Dikie zhivot. Kopet-Daga . . ., Ashkabad-Baku, p. 36 (not seen). ANDRUSHKO, *et alii*, 1939, Voprosi ecol. biochem., vol. 4, pp. 211, 234 (not seen). SHIBANOV, 1939, Presm. v. kn. Zhizn. zhirot . . ., p. 739 (not seen). TEREJTJEV AND CHERNOV, 1940, Kratkii opredel. zemnovod. presm. kaiushchikhssa SSSR, p. 142 (not seen). SMITH, 1943, Fauna British India, Rept. and Amph., vol. 3, p. 190 (Baluchistan [Man, Gusht, Kacha, Sib, Kanki, Quetta], Afghanistan and southern Turkestan to Transcaspia). CHERNOV, 1948, Presm. Zhivotnii SSSR, vol. 2, p. 154 (not seen). TEREJTJEV AND CHERNOV, 1949, Diag. Rept. Amphib., pp. 246-247, 320, map 31 (distribution compiled). WETTSTEIN, 1951, Sitzb. Öster. Akad. Wiss. Wien, vol. 160, p. 444 (Iran [Khanu, 100 km. südl. Sabzawaran, Prov. Kerman]). RUSTAMOV, 1954, Ptichi pustini Kara-Kum, Izd-vo AN TSSR, Ashkabad, p. 324 (not seen). KARTASHEV, 1955, Uch. zap. MGU, Biol.

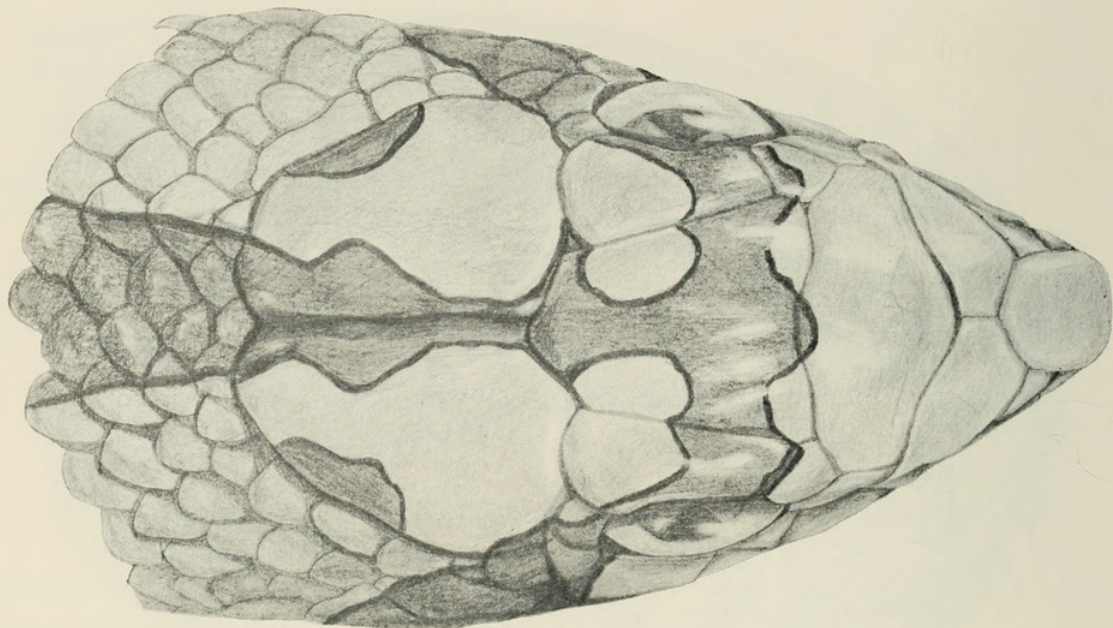


FIGURE 24. Dorsal view of head of *Lytorhynchus ridgewayi* (CAS AMNH 126355).

Izd-vo MGU, vol. 171, p. 196 (not seen). LEVITON, 1959, Proc. Calif. Acad. Sci., 4th ser., vol. 29, pp. 456–457 (Afghanistan [Chah-i-Angir]). BOGDANOV, 1962, Herp. Turkmen, p. 188, figs. 35–36. ANDERSON, 1963, Proc. Calif. Acad. Sci., 4th ser., vol. 31, p. 478. ANDRUSHKO AND MIKKAY, 1964, Vestnik Leningradskogo Universiteta, no. 9, biol. ser., pp. 5–19 (ecology). MINTON, 1966, Bull. American Mus. Nat. Hist., vol. 134, p. 131, pl. 28, fig. 1 (Pakistan [vicinity of Kolpur; near Quetta]; description, natural history). *Lytorhynchus ridgewayi*, NIKOLSKY, 1899, Ann. Mus. Zool. Acad. Imp. Sci. St. Pétersbourg, vol. 4, pp. 403–404 (Iran [Atkaul, in Terra Zirkuch]). *Lytorhynchus ridgewayi* var. *roseni* ELPATJEVSKI AND SABANEJEV, 1906, Zool. Jahrb., vol. 24, p. 257, pl. 19, figs. 6–7 (type loc: Nachduin, Transcaspia; type whereabouts unknown). *Lytorhynchus gabrielis* WERNER, 1938, Zool. Anz., vol. 121, p. 268, figs. 2–3 (type loc: Unter Ziarat, Baluchistan; type in Vienna).

MATERIAL EXAMINED (12). AFGHANISTAN: Chah-i-Angir (CAS 84639); 35 km. S Darweshan (CAS 120495); without data (AMNH 74577). IRAN: Ahram, Fars Prov. (FMNH 141602). PAKISTAN: 5 mi. NW Kolpur (AMNH 86897); near Kolpur (AMNH 96223–96224); 3 mi. NE Kolpur (UMMZ 126355); Nushki (CAS 101407–101409, 101476); Quetta (USNM 52140).

RANGE. (See fig. 7.) Reported from southern and eastern Iran, lowland and intermediate elevations of western and southern Afghanistan and adjacent areas of Pakistan, and the Transcaspian region of the Soviet Union. The following specimens (not examined by us) are in the collections of the Bombay Natural History Society. IRAN: Pusht, 42 mi. N of Dizak (BNHS S184); Kanki, 20 mi. SW of Sib (BNHS S185); Sib (BNHS S186). PAKISTAN: Baluchistan: Kacha (BNHS S183); Mand (BNHS S187). All these localities are near the Iran-Pakistan border.

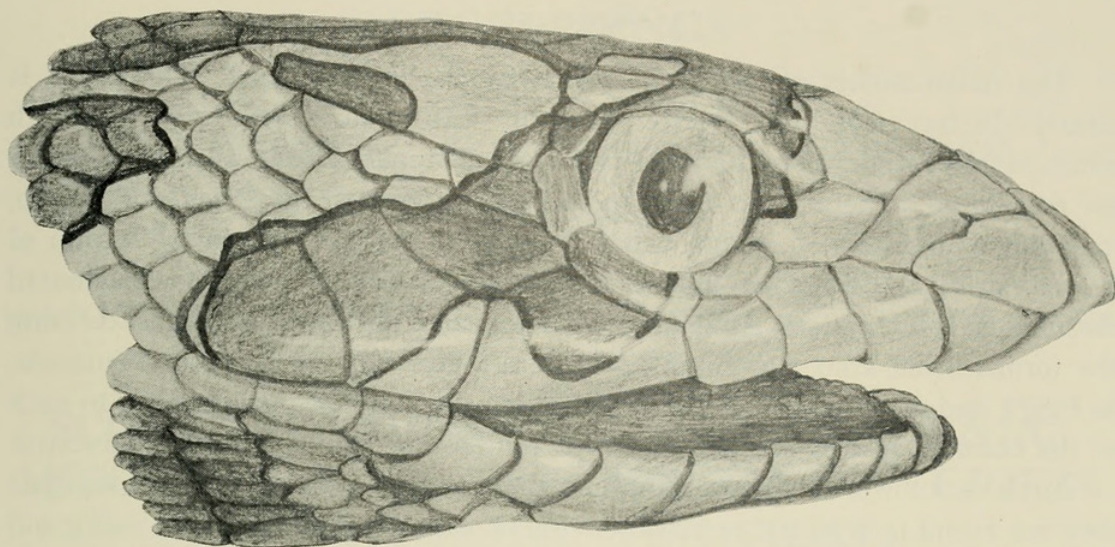


FIGURE 25. Lateral view of head of *Lytorhynchus ridgewayi* (AMNH 126355).

DIAGNOSIS. Rostral narrowly truncate anteriorly; prefrontal single or divided; upper labials usually separated from eye by suboculars; prefrontal single or divided; light buff or grayish above with series of brown, black-edged squarish or transverse spots on dorsum; anchor-shaped marking on head from prefrontal(s) to neck; ventrals 165–188,¹¹ subcaudals 41–54,¹² dorsal body blotches 36–47;¹³ standard length (of largest male and female examined, in mm.): ♂ 315, ♀ 347; tail length: ♂ 65, ♀ 65.

REMARKS. Dr. Minton (personal correspondence) has provided us with the following information on the specimen of *L. ridgewayi* he collected in Pakistan: "All my *ridgewayi* come from the valley between Quetta and the top of Bolan Pass near Kolpur. Elevations are 5000–6000 feet. If the type locality of *gabrielis* is correct, it must range to about 8000 feet, however. The only ones I have personally collected were on the highway. Surrounding soils varied from almost pure clay (perhaps an old lake bed) to clay liberally admixed with sand and gravel. Definitely not a dune snake in my experience, however. In my experience, the three forms are allopatric, but I have no reason not to consider all as full species."

Minton (1966, p. 131) apparently assumes Werner's type locality for *L. gabrielis* to refer to Ziarat near Quetta, West Pakistan. There are a number of localities of this name in Iranian Baluchistan as well, and Werner gives no indication of the elevation or precise locality for this site. An elevation of 8000 feet seems to us unlikely, particularly since Werner also lists such species as *Agama nupta* and *Pseudocerastes persicus* from this locality. Most of Werner's identifiable localities are in eastern Iran.

¹¹ Ventrals: ♂ [2] 167.0 (165–169), ♀ [7] 179.0 \pm 1.5 SE (174–188).

¹² Subcaudals: ♂ [2] 47.5 (47–48), ♀ [5] 48.4 (45–53).

¹³ Body blotches: [8] 42.1 \pm 1.3 SE (36–47).

SUMMARY

The Asian snakes of the genus *Lytorhynchus* are reviewed. The genus is clearly distinct from the North American leaf-nosed, *Phyllorhynchus*, with which it has been confused in the past. Six nominal species of *Lytorhynchus* are recognized. These are referred to two species groups, the "diadema" group, including *L. diadema*, *L. gaddi*, and *L. kennedyi*, and the "ridgewayi" group of *L. maynardi*, *L. paradoxus*, and *L. ridgewayi*. The latter group is distributed throughout southwestern Asia, from Pakistan and northwestern India to Iran, the former from Iraq and southwestern Iran, through the Arabian Peninsula, to Egypt and across North Africa to Morocco. Synonymies appropriate to each of the nominal species recognized are presented and available names allocated.

Little is known about the habits of these snakes beyond the obvious that they are found in arid and semiarid environments, on either sandy or rocky soil (although they have been taken on the Batna Plateau, a grassy plain at 3350 feet in Algeria), are nocturnal, probably lay eggs, and probably feed mostly on lizards.

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