

ART. 3. ON A COLLECTION OF ARABIAN REPTILES

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In 1955 Carnegie Museum received a collection of 58 specimens of amphibians and reptiles from Saudi Arabia. This collection was made by Mr. Robert S. Mathews who was in Arabia on other duties. When I visited Carnegie Museum in the summer of 1959 Mr. Neil D. Richmond called my attention to this collection and also permitted me to borrow a portion of this material for additional study. This relatively small but extremely interesting collection represents 20 species (1 frog, 7 snakes, and 12 lizards) and the slightly known nature of the herpetofauna of this region is indicated by the fact that two new species and possibly one or two new subspecies are represented.

I wish to express my gratitude to Dr. Carl Gans, Buffalo, for his kind help in restyling this manuscript and to Mr. Neil Richmond for supplying the scale counts of the snakes, the illustrations of the two new forms (Fig. 1-2), arranging the material for publication, and reading proof.

The following localities, all in Saudi Arabia, are represented in the collection. They may be found in Haas (1957, p. 49) and on the "Southwest Asia" sheet of the National Geographic Society's map series (June 1952, v. 101, no. 6).

Abqaiq, Al Hasa District.

Badanah, (Approximately $31^{\circ} 30'$ N. lat., $41^{\circ} 30'$ E. long., on Aramco Pipeline, near Iraq border.)

Dahanah Desert, (This is Ad Dahna District on map.)

Damman, Al Hasa District.

Dhahran, Al Hasa District.

Dik'kan, (Probably Dukhan, on western Qatar Peninsula.)

Hofuf, Al Hasa District.

Jafura Desert, southeast Al Hasa District, southwest of the Qatar Peninsula.

Qatif Oasis, Al Hasa District.

Rub' Al Khali, with Mr. Mathew's note "approximately 23° N- 41° E."

Rumah, "Dahana Desert" is shown on map in Ad Dahna District, near the Arma Plateau.

Salwa, Al Hasa District, near base of the Qatar Peninsula.

Wadi Arar, north of Badanah. (The Pipeline crosses the Wadi at Badanah.)

ACCOUNT OF SPECIES

Rana ridibunda ridibunda Pallas

8 (C.M. 33547-48); Al Hasa, 3 miles E. of Hofuf; April 20, 1953.

(C.M. 33544-46); Al Hasa, NW. corner of Qatif Oasis; February 1953.

(C.M. 33549-51); Al Hasa, Qatif Oasis; May 14, 1954.

All collected by R. S. Mathews.

Eryx jayakari Boulenger

2 (C.M. 33507); Al Hasa, Abqaiq; March 1951. Malaria Control Technician.

(C.M. 33527); Al Hasa, Dhahran; July 12, 1953. R. S. Mathews.

The details of scutellation and measurements for these and the other snakes in this collection are given in Table 1.

Coluber ventromaculatus Gray

4 (C.M. 33508-09); Al Hasa, Abqaiq; March 1951. Malaria Control Technician.

C.M. 33541-42); Al Hasa, 2 miles S. of Qatif; July 5, 1954. R. S. Mathews.

Eirenis arabica sp. nov.

Type.—(C.M. 33511) An adult male from Saudi Arabia, Al Hasa District, Abqaiq; March 1951. R. S. Mathews.

Diagnosis.—This single specimen represents a new species of the genus *Eirenis* similar in habitus and color pattern to *E. coronella* sensu Schmidt 1939, (= *E. fasciata* auct.). It differs from *E. coronella* by a narrow head, by the more tapering frontal, which is longer and not shorter than the snout, and by the presence of only six instead of seven supralabials. The reduced number of supralabials, strongly constricted nuchal band, and the shape of the frontal serve to distinguish this form from *E. coronella fraseri* Schmidt.

Description.—The frontal shield is longer than snout, but shorter than the parietal; the loreal is somewhat longer than high, much smaller than the preocular and ventrally is in contact with the second and third supralabials. It has one preocular and two postoculars. The temporals are 1+1+2. The second temporal is two-thirds the length of the first, and only half as high.

There are six supralabials of which the last is very much enlarged. The third and fourth supralabials contact the eye, the latter has a contact three times as long as the former. The fifth supralabial contacts the lower postocular and the first, angularly bent temporal. The sixth supralabial is much the largest and highest of the series, dorsally in contact with the first, second, and lower third temporals.

There are eight infralabials. The posterior chin shields are much narrower and only two-thirds the length of the anterior. The anterior pair of chin shields has a long sagittal contact, while the posterior pair is separated by an azygous scale.

Dorsal scales smooth, 15-15-13; ventrals 147; anal divided; caudals 52/52.

There is a broad, dark-brown transverse nuchal band; this fuses with a dark blotch on the head and is followed caudad by a series of brown saddles, 43 anterior to the cloaca and 18 on the tail. The anterior ventrals and extensive parts of the gular area are covered by dark scales with yellowish posterior margins. The third and fourth supralabials are completely dark and this dark bar continues onto the third and fourth infralabials. The posterior infralabials and both pairs of chin shields are well marked with dark. Measurements; snout to vent, 178 mm.; tail 58 mm.

Discussion.—The presence of 15 rather than 17 or 19 rows of dorsal scales effectively distinguishes this species from most forms described in the genus. From *E. persica* (Anderson) including the synonyms *walteri* (Boettger), *machmahoni* Wall, *zebrina* Wall and *angusticeps* Boulenger it is easily distinguished by the much lower ventral count, coloration, and the less slender habitus. This species appears closest to *E. coronella* although the high number of ventrals in this one *arabicus* ♂ 147, suggests that this character may also be distinctive, for comparison a series of 33 ♂ *coronella* from Israel have ventral counts ranging from 128 to 141.

Lytorhynchus diadema arabicus Haas

1 ♂ (C.M. 33510); Saudi Arabia, Al Hasa, Abqaiq; March 1951. Malaria Control Technician.

The specimen agrees in habitus, coloration and in the high ventral count with the slender Arabian subspecies. It has 193 ventrals, 47/48 subcaudals, a divided anal and 15 scale rows at midbody. There are 45 dark, widely spaced cross-bars to the vent and 13 much paler transverse markings on the tail. Snout-vent + tail length is 356+60 mm.

Hydrophis spiralis (Shaw)

1 (C.M. 33539); 6 miles from Dhahran; January 1953; R. S. Mathews.

According to Mr. Mathews's note this specimen was found in a boat on the beach. It is so badly dried and wrinkled that it is difficult to obtain accurate scale counts. There is but one anterior temporal. The scales are smooth and imbricated. There are 47 black rings on the body and four on the tail, with the tip of the tail black. The black rings are widest dorsally, and extend completely around the body. On the back, the area between the bands is uniform dusky gray while the sides and venter are light as though they may have been white or yellow in life.

Hydrophis cyanocinctus Daudin

1 (C.M. 33540); 5 miles S. of Dhahran, Half Moon Bay; April 1952. R. S. Mathews.

This is a well preserved specimen. It has two anterior temporals, the dorsal scales are more or less hexagonal with a strong central tubercle. Some of the scales on the anterior part of the body have two tubercles. The scales are weakly imbricate. The preanals are not enlarged. Dorsal surface uniformly dark brown, on the sides the remains of 29 dorsal bars can be seen on the body and four or five more on the tail. These appear as dark points of the dorsal color extending about half way down the sides. Under side light tan in preservation.

Aspis cerastes (Linnaeus)

2 (C.M. 33512); Al Hasa, Abqaiq; March 1951. Malaria Control Technician.
(C.M. 33543); Al Hasa, SE. Jafura Desert; April 1954.

Both the above lack superciliary "horns".

Ceramodactylus sp.

1 ♂ (C.M. 33520); Saudi Arabia, Al Hasa, Southeast Jafura Desert; April 1954. R. S. Mathews.

The characters of this specimen fall between those of the two closely related species *C. doriae* and *C. major*. Since some previously discussed specimens of the same genus (Haas, 1956: 308; 1957: 58) also showed such intermediate conditions, the revision of this species group seems advisable. Without entering in a discussion of the exact determination of the specimen at hand, the data are given in the following paragraph.

Measurements. Head and body, 50 mm.; tail, 56 mm. In accordance with *C. major*, this specimen has the inner nasals widely separated by an azygous, rather big, scale and has a rather high labial count, namely 17 supralabials and 16 infralabials; the naris does not share the first labial, as it is surrounded by three nasals and the rostral. The specimen agrees with both species in ques-

tion in possessing only two widely separated femoral pores in the ventral pelvic region. Distal traces of a slightly enlarged ventromedian row of subdigital, trihedral scales, strictly serially arranged smooth dorsal scales contrasting with wider and more rugose ventrals, separate the specimen from *C. major* as determined in the first description by Parker, 1930.

The condition of the scales surrounding the naris in a population of *C. doriae* from southern Israel is constant in all the eight specimens seen: the naris shares the first supralabial. In the same series, however, four specimens have inner nasals in contact behind the rostral, two have them separated by a large azygous shield and two separated by a small azygous shield. In this series from Israel the labial counts are 13 supralabials and 11 infralabials, well in agreement with *C. doriae* but much below the figure given above for the Arabian specimen. This short list of characters shows the peculiar intermediate position of the specimen under discussion; more material from this same area might permit some decision as to the status of this interesting specimen. Perhaps both "species" of *Ceramodactylus* will eventually be revealed as a single form with a few characters exhibiting clinal variation. However, not enough material has been collected in this area, and a final decision should be postponed.

Gymnodactylus scaber (Heyden)

- 1 Juv. (C.M. 33525); Saudi Arabia, Al Hasa, Dahran; July 1954. R. S. Mathews.

Alsophylax blanfordii (Strauch)

- 1 ♂ (C.M. 33532); Saudi Arabia, near Badanah; late May 1954. C. Rock.
1 Juv. (C.M. 33537); Saudi Arabia, Dahana Desert; November 14, 1952. R. S. Mathews.
1 ♀ (C.M. 33521); Saudi Arabia, Al Hasa, SE. Jafura Desert; April 1954. R. S. Mathews.

The male of the series (C.M. 33532) has 11 preanal pores (*A. tuberculatus* has 7-8) and the typically flattened, elongated head of *A. blanfordii*, but lacks the keeled and mucronate ventral scale of the latter form. The transverse subdigital lamellae are denticulated in all three specimens. In the female (C.M. 33521) the dorsal trihedral scales are considerably smaller and more widely spaced than in the male. There is a striking sexual size difference of the enlarged occipital tubercles.

Stenodactylus stenodactylus (Lichtenstein)

- 1 Adult (C.M. 33536) Dahana Desert; November 14, 1952; R. S. Mathews.

Hemidactylus persicus Anderson

- 1 Juv. (C.M. 33526); Al Hasa, Dahran; September 1954. R. S. Mathews.

Phrynocephalus nejdensis macropeltis Haas

- 2 Adults, sex ♂, ♀ (C.M. 33523-24); Al Hasa, near Dahran; July 5, 1954. R. S. Mathews.

Both specimens agree in all details with the description of this subspecies (Haas 1957).

Varanus griseus Daudin

- 1 Juv. (C.M. 33538) "Just out of Rub' Al Khali, approximately 23° N. 51° E."

Diplometopon zarudnyi Nikolsky

5 (C.M. 33503-06); Al Hasa, Abqaiq; March 1951. Malaria Control Technician.

(C.M. 33522); Al Hasa, S. of Salwa; May 16, 1954. R. S. Mathews.

These specimens have been described in detail and figured by Gans (1960).

Acanthodactylus scutellatus ssp.?

1 ♂ (C.M. 33531); Saudi Arabia, near Badanah; late May 1954. C. Rock.

This single specimen shows a mixture of controversial characters. It has been compared with *A. scutellatus hardyi* Haas (1957) and *A. scutellatus* ssp. of Parker (1931), the first from Hirmas Station, Saudi Arabia, and the second from southeast of the Arabian Peninsula (Rub' al Khali Desert). Other *scutellatus* material from Arabia has not been described. All the subspecies of *scutellatus* mentioned in Boulenger (1921) are from N. Africa, with the exception of the typical form, which ranges through Egypt, the Sinaitic Peninsula, Palestine, Mesopotamia (Basra) and to In Salah in the Algerian Sahara.

The specimen under discussion has 12 ventrals, except for a few rows at midbody with 14, and differs otherwise from *hardyi* in the following points. The fourth supraocular is not entirely broken up into small granules, but separated from the third by a single series of minute granules, the innermost being larger, wedge shaped, and laterally in contact with the elongate, elliptical fourth supraocular. Dorsal scales rather bluntly keeled, sharper in the posterodorsal region. No enlarged gular scales bordering on chin shields (very characteristic of *A. s. scutellatus*.) Prefrontals rather elongate, nasal suture very short. Temporal granules smooth. The eye region in males from Israel protrudes from the main frontal level; in the Arabian specimen, no such protrusion can be seen, instead the frontal area is rather flattened.

In the following table, the available data concerning Parker's specimen are compared with the specimen at hand and *hardyi*.

	C.M. 33539	<i>Hardyi</i> (Type)	Parker's data 1931
Snout/vent	68 mm.	65 mm.	
Scales across midbody, all.....	72	72	
Collar scales	9	7-8	
Ventral, imperfect longitudinal series	12-14	12	
Number of gulars to collar.....	31	31	37
Transversal series of ventrals.....	31	30	
Femoral pores	17-17	very indistinct ♀	23-24
Lamellae under fourth toe.....	20	25	27
Supralabials in front of eye.....	5	5	4

The few comparable data show quite a number of different criteria in the three *scutellatus* specimens from different parts of the vast Arabian Peninsula. It would be too early to name this new specimen; more material would enable us to get a clearer opinion about the Arabian forms of the *scutellatus* group, to which all three undoubtedly belong.

Acanthodactylus cantoris schmidtii Haas

1 ♂ (C.M. 33519); Saudi Arabia, Al Hasa, SE. Jafura Desert; April 1954. R. S. Mathews.

1 ♂ (C.M. 33528); 1 ♀ (C.M. 33529); 1 Juv. (C.M. 33530); Saudi Arabia, east side of Dahana, near Rumah; March 20-21, 1953. R. S. Mathews.

1 ♀ (C.M. 33533); Saudi Arabia, Qatif Oasis; March 6, 1953. R. S. Mathews.

All these specimens conform well with the subspecies *c. schmidtii*. The biggest male (C.M. 33528) measures almost 90 mm. from snout to vent, has 25/24 femoral pores in a continuous, V-shaped series meeting in front of the vent. The biggest female (C.M. 33529) measures (snout to vent) 70 mm.

Eremias adramitana Boulenger

1 ♂ (C.M. 33535; Saudi Arabia, Dikkan; November 15, 1952. R. S. Mathews.

Eremias guttulata guttulata (Lichtenstein)

1 ♀ (C.M. 33534); Saudi Arabia, near Badanah, Wadi Arar; February 21, 1953. R. S. Mathews.

The specimen has a very large occipital in contact with the interparietal shield, and deeply intercalated into the parietals. The occipital forms a straight posterior contour together with the parietals. There are two large transparent scales with black margins in each lower eyelid.

Scincus richmondi sp. nov.

Type. — (C.M. 33515); A mature female, collected in Saudi Arabia, Al Hasa District, SE. Jafura Desert; April 1954. R. S. Mathews.

Paratypes. — Five additional specimens with the same data as the type are available. These include three males, one female and one juvenile (C.M. 33513-14, C.M. 33516-18).

Diagnosis. — A *Scincus* very similar in habitus to *S. philbyi* Schmidt but possessing paired prefrontals and 30 scale rows around the middle of the body instead of 26 in *philbyi*, which has 28 at a point slightly posterior of the middle. The frontal is elongate, the interparietal rhombic, almost squarish, loreals three.

Description of the Type. — Ear opening very obscure, overlapped by a slightly enlarged, posteriorly fringed scale, ending in four digitations, two scales from rictal areas. Snout in proportions of *S. philbyi*. Internasal in contact with the slightly asymmetrical paired prefrontals. Frontal much more elongate and tapering posteriorly than in *philbyi* (length: width index being 1.7 against 1.5 in *philbyi*). Six supraoculars, four supraciliaries, the second being the shortest, the first much longer than the others. Frontoparietals as in *philbyi*; interparietal as broad as long, rhombic, but widest transverse diameter closer to the rostral end, and not narrow-elongate as in *philbyi*. The pineal eye is visible near the posterior end of the shield as a dark dot. Two right and three left nuchals in contact with the respective parietals; three loreals (not two), first as long as wide, second and third very elongate; nasal much smaller than supranasal, nostril elongate; four suboculars; temporals, two-two. Eight upper, 7/8 lower labials. Thirty scale rows across the middle of the body and posterior of the middle; two median postmentals, the anterior being slightly narrower than the mental; the posterior being five times as deep (sagittally) as the anterior. One pair of large anal plates. Ten lamellae under fourth toe; 57 ventrals from anals to a point opposite rictus oris; same number of dorsals from point opposite of thighs to interparietal. The specimen has on the left side six, on the right side seven, vertical mark-

ings, which are much higher than long, three vertical, but only one to two horizontally following scales being involved.

The following differences from *philbyi* may be stressed, as found in all six specimens. Thirty scale rows across midbody against 26; the much elongate frontal; the almost squarish interparietal which is elongate in *philbyi*; the 2/3 arrangement of the nuchals against a 2/2 arrangement; three loreals against two. The extremely wide posterior postmental has been found in the type only.

Discussion. — The only species with similar characters (obliterated ear opening), six supraoculars, and a possibly corresponding scale count would be, according to Boulenger, *Scincus arenarius* with 28 or 30 scales across the middle of the body, but this otherwise sketchily defined species has only been recorded from Sind, very far away from our locality. *Scincus mitranus* from southern Arabia, having 29-30 scales across the middle of the body, has only five supraoculars. In the above mentioned *S. arenarius* the dorsal scales should be perfectly smooth; in *richmondi*, a faint longitudinal striation is visible. The differences from *S. philbyi* have been mentioned above, except that it should be noted that *philbyi* may also have paired prefrontals as in the series discussed by Haas (1957) although the type and 11 paratypes have but a single prefrontal.

This new species is distinguished from *arabicus* Schmidt by the specially long contact of the paired frontoparietals, in *arabicus* these two shields are entirely separated by the interparietal which extends forward to contact the frontal. The parietals are paired in *richmondi* but are broken up into small transverse scales in *arabicus*. Geographically, the two species are widely separated with *arabicus* in Hadhramaut, and *richmondi* in the Jafura Desert, Al Hasa District.

This new form is the eighth species of *Scincus* to be described from Saudi Arabia. These may be distinguished by the following key.

Key to Arabian Species of the Genus *Scincus*

- A. Five supraoculars
 - B. No lateral spots, 26 scale rows.....*gasparetti*
 - BB. Lateral spots present
 - C. Ten lateral spots, 29-30 scale rows around body.....*mitranus*
 - CC. Two or three lateral spots, 22-24 scale rows.....*meccensis*
- AA. Six supraoculars
 - B. Thirty scale rows around body
 - C. Frontoparietals separated by interparietal, 2 loreals.....*arabicus*
 - CC. Frontoparietals broadly in contact, 3 loreals.....*richmondi*
 - BB. 24-28 scale rows
 - C. Nine lateral spots, 24-26 scale rows.....*muscatensis*
 - CC. 0-6 lateral spots, 24-26 scale rows
 - D. Ear opening obscure, 0-6 lateral spots.....*philbyi*
 - DD. Ear opening visible, 4 lateral spots.....*deserti*

TABLE I. SCUTELLATION OF SNAKES IN THIS COLLECTION

	C.M. number	Sex	Scale rows	Ven- trals	Cau- dals	Upper labials	Lower labials	Total length in mm.	Tail in mm.
<i>Eryx</i>									
<i>jayakari</i>	33507	♂	39-43-31	178	21	10	13	240	17
" "	33527	♂	45-51-33	177	21	10	13	445	28
<i>Coluber</i>									
<i>ventromaculatus</i>	33508	♂	19-19-13	204	91	9	9	674	179
" "	33509	juv.	19-19-13	207	119	9	9	334	83
" "	33541	♂	19-19-13	204	100	**	**	1082	275
" "	33542	♂	19-19-13	206	96	9	9	744	209
<i>Hydrophis</i>									
<i>spiralis</i>	33539	♂	27-33*	1812	134
" <i>cyanocinctus</i>	33540	♂	29-40*	312	43	7	7	980	85
<i>Aspis cerastes</i>	33512	juv.	29-31-25	149	33	14	15	379	39
" "	33543	♀	23-37-25	166	39	14	16	718	81

* These counts are of the minimum and maximum number.

** Head damaged.

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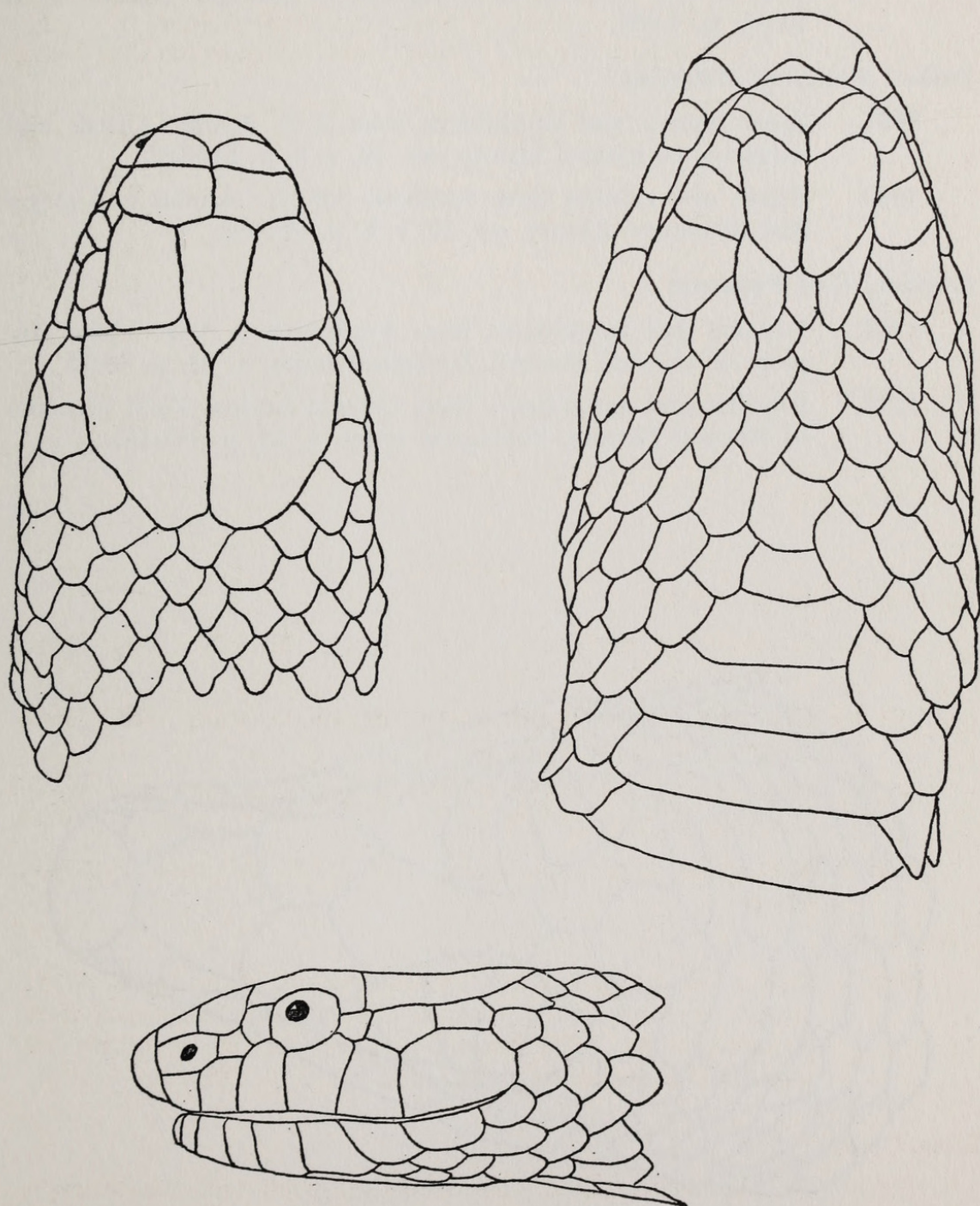


Fig. 1. *Eirenis arabica* Haas, new species. Dorsal, ventral and lateral views of head of C.M. 33511, type. Drawn from photographs and not the same scale



Haas, Georg. 1961. "On a collection of Arabian reptiles." *Annals of the Carnegie Museum* 36, 19–28. <https://doi.org/10.5962/p.247182>.

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