

RECORD OF CERTAIN REPTILIAN SPECIES FOUND IN KUWAIT

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Abstract. This report represents a record of certain species of reptiles inhabiting Kuwait. Many reptilian specimens have been collected from the desert and water of Kuwait, examined and identified. The authors found 28 species of reptiles from Orders Chelonia and Squamata. The authors described the characteristics, behaviour, colour and localities of these species.

INTRODUCTION

No previous attempts have been made by biologists to collect and identify the reptilian fauna of Kuwait, except for the work of the Al-Ahmadi Natural History Studies Group, Kuwait Oil Company, in 1972, which led to the collection of some lizards and snakes. However, their work lacked some of the scientific information about the species which they collected. Certain authors described the reptilian fauna of the neighbouring regions of Kuwait; namely Arabia (Anderson 1896, Hass 1957, Hass & Battersby 1959 and Corkill & Cochrane 1966), Eastern Arabia (Mandaville 1965), Northeastern Arabia (Mandaville 1967), Abu-Dhabi (Leviton & Anderson 1967) and Bahrain (Summer 1954 and Gallagher 1971).

In view of the lack of any scientific information about the reptilian fauna of Kuwait, the authors felt the need to collect and identify the reptiles of different habitats of Kuwait. The authors spent about three years in collecting the various reptilian specimens. The most favourable period for such activity lies between March and May when the climatic conditions are comfortable. The identification of the different species has been carried out partly by the authors and partly by Mr E. N. Arnold, Reptile Section British Museum (Natural History). The authors described the main characters, shape, colour, behaviour and habitat of the species recorded here. The authors found 28 species of reptiles; one turtle, 17 lizards and 10 snakes including 2 marine forms. They believe that these species represent most of the reptilian fauna of Kuwait. The authors hope that such a record may be of interest and will represent a first step in the identification of the whole fauna of Kuwait in the near future.

ORDER CHELONIA

Some specimens of tortoises were received by the authors, but it seems that they do not represent part of the local fauna of Kuwait. They might have been transferred from Iraq or neighbouring states and not found in Kuwait owing to the scarcity of vegetation. Marine turtles live in the Arabian Gulf on which Kuwait lies. *Chelonia mydas* has been collected from the waters of Kuwait.

***Chelonia mydas* Linné (Green Turtle); Fig. 1.**

Geographical Distribution: found in all marine ocean areas. It has occasionally been found in Dutch and Belgian waters (Hellmich 1962).

Diagnosis: large, with oval carapace. Epidermal horny plates of carapace do not overlap. These are 5 median neurals, 4 paired costals lateral to neurals and 25 marginals including an anterior median nuchal and 2 posterior pygals. Two prefrontal shields are found on top of the head. Upper jaw is straight, with teeth-like serrations. One claw is found on each of the fore appendages. Colour is dark greenish dorsally and yellowish ventrally.

Habits: *Chelonia mydas* is entirely aquatic. It feeds mainly on marine grass. It is oviparous.

ORDER SQUAMATA

Many specimens were collected, which belong to different families of lizards and snakes found in Kuwait desert and the Arabian Gulf. Lizards and snakes constitute two suborders of Squamata, which are phylogenetically closely related. However, snakes are quite distinguishable from lizards. Almost always, snakes are

limbless with flexible jaws which allow them to swallow prey larger than the gap of their mouth. They are without eyelids, without an eardrum and have a single row of scales on the ventral side of the body.

A. SUBORDER LACERTILIA

The specimens of lizards collected from Kuwait belong to different families: Geckonidae, Agamidae, Varanidae, Lacertidae, Scincidae and Amphisbaenidae.

FAMILY GECKONIDAE

The geckos are distributed throughout the warm regions of the world and are among the few reptiles which reached New Zealand (Belairs 1957). Most geckos are nocturnal, oviparous and adapted for climbing. They feed on insects. Often, they change their colours. They lack movable eyelids. Some species live in houses and climb smooth walls and walk on ceilings, while others climb trees. For this behaviour, most geckos are adapted by the presence of clinging dilated pads on the undersides of their toes. Pads consist of a series of plates provided with very fine processes. Pads differ in shape among different geckos and thus help in identification (Schmidt and Inger 1957).

Cyrtodactylus scaber (Keel Rock Gecko); Fig. 2.

Geographical Distribution: found in Egypt, Sudan and Pakistan. It lives near old buildings in Kuwait. It is also found in rocky regions of Jal-Az-Zor escarpment and Gabed.

Diagnosis: pads are absent and replaced by another device to enable the gecko to climb trees and rocks. Thus, the toes are long and narrow, and bent forming a right angle with the claw. Toes are fringed and provided with simple transverse lamellae. Simple transverse large scales are found behind the chin shields. On the back, there are strongly keeled tubercles which are arranged in distinct longitudinal rows. The tail is provided with pointed tubercles. The colour is greyish dorsally with broken lines, and white below.

Habits: it is a nocturnal gecko.

Hemidactylus flaviviridis Rüppell (Yellow-bellied House Gecko - native name: Wazzagha).

Geographical Distribution: it lives in Arabia, Iran and India. It is found in old buildings in

Kuwait.

Diagnosis: toes are expanded proximally, and provided with ventral climbing pads in the form of transverse lamellae. The pads are arranged in two rows, separated by a groove, and provided with fine bristle-like projections. Skin on the back is smooth with uniform granules, but no tubercles. The colour is brown dorsally, with dark crossing lines, and yellowish ventrally.

Habits: it is active during day and night, feeding on insects.

Hemidactylus turcicus Linné (The Disc-fringed Gecko); Fig. 3.

Geographical Distribution: found round the Mediterranean and Red Seas as well as in Western Asia. It has been transported to North and Central America and Cuba (Hellmich 1962). It lives under stones, sometimes in houses, in Kuwait.

Diagnosis: it is characterised by the presence of dorsal keeled tubercles. Toes are provided with two rows of ventral lamellae; the middle hind toe carries 10 pairs of lamellae in addition to a median one proximally and distally (Fig. 4). Claws are short and tapering. Dorsal scales irregular. On the ventral side of the abdomen, there are overlapping hexagonal scales.

Habits: it is active and feeds on insects.

Stenodactylus slevini

Distribution: found in Arabia.

Diagnosis: the head is large, flat and broad, and the tail is short. Nostrils are directed far anteriorly and are somewhat prominent. Digits are short, and their edges and ventral sides are covered by bristle-like projections. No pads are present and the toes are unwebbed. The colour is brown dorsally with spots, and silvery white ventrally.

Habits: it is a nocturnal gecko.

Stenodactylus doriae

Diagnosis: the back is smooth, with no tubercles. The toes are provided laterally with fringes of pointed scales; they are without pads and are unwebbed.

Bunopus tuberculatus; Fig. 5.

Distribution: found in Arabia. It is collected from Auhha and Kubbar islands in Kuwait.

Diagnosis: the body is covered by separate

keeled tubercles. Toes are short, thick, and provided with simple transverse lamellae. They are unfringed. The colour is sandy brown above with dark brown bands and spots. Ventrally, it is white. Two brown lines extend from the nostrils laterally on both sides of the head as far as the hind region, where they unite together dorsally forming a U-shaped mark.

Habits: it is a nocturnal gecko.

FAMILY AGAMIDAE

The agamids are found in tropical more than in temperate regions (Schmidt and Inger 1957). They are mostly insectivorous. The body is more or less cylindrical. The head is short and broad and tail long.

Phrynocephalus maculatus (Toad-headed Agama)

Geographical Distribution: it is found in fine sandy areas of arid deserts of South-western Asia, living in burrows. It is widely distributed in the steppes of the elevations of Kuwait desert near Jal-Az-Zor escarpment, Ahmadi and Burgan hills.

Diagnosis: the body is flattened dorsoventrally and the tail is slender and tapering. The otic hole is absent. The device protecting the eyes from sand is well represented in this agamid through the presence of a fringe of large scales on the eyelids. The colour is sandy above, with dark spots, and the distal part of the tail is black. Ventrally, the animal is pale yellow.

Habits: it is able to disappear rapidly by burying itself in fine sand. The colour of the animal changes rapidly in different environments, as well as in accordance with increase of temperature and light.

Agama blanfordi (= *A. persica*); Fig. 6.

Distribution: it is collected from Al-Jalia, Al-Wafra and Gated.

Diagnosis: the otic opening nearly equals the eye in size. There is a longitudinal band on the middle of the neck. The colour is sandy grey, with dorsal longitudinal dark brown strips with undulating borders. Two transverse brown bands cross the head dorsally between the eyes. Below, the colour is yellowish brown. The tail is provided with dark brown rings.

Habits: if the animal is irritated, the colour of the ventral sides of the head changes into blue.

Agama jayakari (Jayakar's Agama, native name: Abu nufaikh); Fig. 7.

Distribution: it lives in Kathma, Al-Jahra, Gated, Al-Wafra and Al-Jalia.

Diagnosis: spiny scales are found on the dorsal side of the body and around the otic hole. The colour is sandy dorsally, with dark brown transverse bands.

Habits: it is active by day and is found among shrubs in the desert. It feeds on insects. The colour of the animal changes rapidly in accordance with the background and intensity of light and heat. It becomes more pale with increase of illumination and temperature.

Uromastix microlepis (Spiny-tailed lizard, native name: Dhab); Fig. 8.

Geographical Distribution: it generally lives in very arid regions from North Central India to extreme Northwestern Africa. It was collected from Kathma, Al-Mutla, Al-Wafra and Al-Atraf.

Diagnosis: the tail exceeds half the length of the body and is peculiar in being provided with large hard and pointed scales, arranged in about 21 rings. The limbs are large and heavy. Shields are found above the eyes. Schmidt and Inger (1957) refer to the tail of *Uromastix* as the "oddest tail of family Agamidae". The colour is sandy, densely mottled with small light and dark brown spots over the whole dorsal surface. The tail is marked with dark grey bands on the rings and the ventral side is pale sandy in colour.

Habits: it is active by day especially in the early morning and late afternoon. It hibernates during winter. It digs its burrow in hard substrata. It is an herbivorous agamid lizard. The rings of spines provide *Uromastix* with principal means of defence as it is a non-aggressive lizard. If attacked by a predator, it hides in its burrow, leaving part of its tail exposed and swings it strongly (Schmidt and Inger 1957). The colour of the animal becomes lighter if exposed to higher temperatures and intense light.

Uromastix Thomasi

Distribution: a few specimens were collected from Rhawdatain.

Diagnosis: its body is broader than that of *U. microlepis*. Again, it has an oval tail but its length does not exceed half the length of the

body. The tail has smaller number of rings (about 18).

Habits: this species is also diurnal.

FAMILY VARANIDAE (MONITOR LIZARDS)

The family includes the single genus *Varanus* (Schmidt and Inger 1957). Monitors have heavy bodies, long necks and large heads. The tail is thick and long, the legs and claws strong. The eyes are conspicuous. Monitor lizards feed on small vertebrates and on various invertebrates (Bellairs 1957).

Varanus griseus (Daud.) Boul. (Desert Monitor, native name: Wirel); Fig. 9.

Geographical Distribution: it is common in dry north-western regions of Pakistan (Schmidt and Inger 1957). Its distribution extends to the Western Sahara of Africa. In Kuwait, it is found in hard soils in Al-Mutla and Rhawdatain.

Diagnosis: the nostrils are slit-like, elongated and are close to the eyes. The tail is very long; it tapers posteriorly and is used as a prehensile organ. The colour is sandy with scattered brownish spots on the dorsal side and short transverse brown bands. Elongated brown lines extend on the sides of the head and neck. Small dark brown spots are scattered on the ventral side of the head and neck. Below, the colour is sandy. Transverse brown bands are found on the tail.

Habits: the animal is active during day. It forms deep burrows in hard substrata and hibernates during winter for several months. Although the animal is active only by day, it retreats to its burrow to avoid the hottest hours at midday. Bellairs (1957) states that *Varanus griseus* is predominantly a carnivorous desert form, feeding on small rodents and lizards. It tears its prey with teeth and claws and swallows it whole. In this respect, *Varanus* resembles snakes and represents, thus, a unique feature among lizards. *Varanus*, unlike other lizards, has lost the ability to regenerate its lost tail and again resembles snakes in this character (Schmidt and Inger 1957). All species of *Varanus* are oviparous.

FAMILY LACERTIDAE

The family represents typical lizards distributed in Europe, Asia and Africa. All representatives of this family in Kuwait are diurnal

in activity, even during the hottest hours of the midday. They are widely distributed in Kuwait desert. They were collected from Rhawdatain, Al-Mutla, Kathma, Ahmadi, Al-Jalia and Al-Wafra. They feed on insects. The body is cylindrical and slightly elongated, the head conical, the legs and tail well developed. Eyelids are generally movable. All lacertids are oviparous, except *Lacerta vivipera* which is viviparous (Schmidt and Inger 1957).

Acanthodactylus boskianus Aud. (Fringe-toed sand-lizard, native name: Khaswi); Fig. 10.

Geographical Distribution: it is found in the Sahara and Arabian Deserts. It is the most widely distributed lizard in Kuwait desert.

Diagnosis: small lacertid with large ventral scales. The tail is covered by rings of scales. The toes are fringed with a series of scales projecting along their sides (Fig. 11). These fringes help the lizard to move in the loose sand. The dorsal scales are small and granular anteriorly, while posteriorly they are large and imbricate. Three rows of scales are found around the digits of the anterior limbs. The nostrils lie in contact with the upper labials (Fig. 12). The colour is sandy with elongate dark brown spotted lines extending along the back. The ventral side is white. The dorsal side of the limbs is mottled with dark brown spots.

Acanthodactylus scutellatus Aud.; Fig. 13.

Distribution: it is found inhabiting the same regions with *A. boskianus*.

Diagnosis: four rows of scales are present around the fingers of the anterior limbs. Lateral fringes are also found on the sides of the toes. The dorsal scales are small and granular and the nostrils lie in contact with the upper labials. The colour is sandy, with dorsal brown spots giving a mottled pattern to the dorsal surface of the body and limbs. The tail is covered on the dorsal side with transverse brown bands. The underside is white.

Eremias brevirostris (Blan.) Boul. (Short-nosed desert lacerta)

Geographical Distribution: it lives in semi-arid regions with shrubs, and in the rocky desert. It is found in North Africa and South West Asia. It inhabits the same regions as *Acanthodactylus* in Kuwait desert.

Diagnosis: the body is long and the tail elongated and narrow. The legs are short and the toes unfringed. The lateral fringes, as found on the toes of *Acanthodactylus*, are absent. The nostrils are not in contact with the upper labials. The colour is sandy with faint greyish brown spots scattered on the dorsal side of the trunk and tail; the underside is white.

Habits: it is active during the day.

FAMILY SCINCIDAE

Skinks are widely distributed. They are found in African forests and deserts, where they climb bushes and trees. They spend most of their time underground.

The body is cylindrical, the head conical, the legs short and the tail tapered. The body is covered by overlapping shiny and smooth scales (Schmidt and Inger 1957). Many skinks are viviparous (Bellairs 1957). While the movable lower eyelid is opaque and scaly in lizards, it is occupied in most skinks by a large transparent plate, enabling them to protect their eyes against soil particles, yet not preventing their seeing (Schmidt and Inger 1957).

Scincus scincus (Linné) Lover. (Sandfish lizard); Fig. 14.

Geographical Distribution: found in sandy deserts from Algeria to Pakistan. It has been collected from Al-Jalia near the shores of Kuwait.

Diagnosis: the body is smooth, the neck not obvious. Dorsal scales and those on the belly are large, overlapping and about the same size. The upper jaw extends anteriorly, beyond the lower, into a broad snout. Digits are flattened, with broad fringes of projecting scales, which may enable the animal to move over the surface of the loose sand. However, it spends most of its time under the surface searching for insects in the sand (Schmidt and Inger 1957).

FAMILY AMPHISBAENIDAE

The amphisbaenids are worm-like lizards. They are limbless burrowers which feed on small invertebrates, ants and termites. They are long and cylindrical, with shallow grooves. The head and tail are short and blunt.

Worm lizards are mainly tropical. Some species have the ability to crawl backwards (Bellairs 1957). It seems that most amphis-

baenids are oviparous; one species in North Africa is known to be viviparous (Schmidt & Inger 1957). All species of the genus *Bipes* have short stout legs (Schmidt & Inger 1957).

Diplometopon zarudnyi Nik. (The Arabian Worm-lizard, native name: Nadus); Fig. 15.

Distribution: it is found in old houses, living underground.

Diagnosis: The eyes are very small, the scales smooth, the snout blunt and the tail short and pointed.

Colour: spotted brown above, whitish below.

B. SUBORDER OPHIDIA

The snakes and vipers collected from Kuwait belong to the families Colubridae, Boidae, Hydrophidae, Typhlopidae and Viperidae.

FAMILY COLUBRIDAE

The family comprises about three quarters of the genera of snakes in the world. They represent typical common snakes living in various habitats: on the ground, in trees or in water. Most colubrids swallow their prey. The upper part of the head is covered by nine large shields. Most colubrids are harmless to man (Stidworthy 1969), but their saliva may be toxic to their prey. Generally, they have no true fangs or true venom (with few exceptions).

Malpolon moilensis Reuss (Arabian rear-fanged snake, native name: Hanesh); Fig. 16.

Geographical Distribution: it inhabits sandy regions of countries around the Mediterranean, and extends east towards Persia. It was found at Al-Jalia.

Diagnosis: the eyes are large. The fangs lie posteriorly in the jaw (Opisthoglypha), and thus the snake may be regarded as semipoisonous. The anterior part of the head bends downwards forming a distinct convex dorsal surface.

Colour: pale sand-coloured, with small scattered dark brown patches and spots on the back, which are more distinct on the sides, and pale yellowish ventrally. The eye is bordered ventrally by a dark brown spot, followed by a large and conspicuous dark brown area.

Habits: it feeds on small mammals such as rats and birds, sometimes on lizards and other snakes.

Psammophis schokari (Forsk.) Boul. (Sand snake, native name: Zarag); Figs. 17 & 18.

Geographical Distribution: it is distributed from North Africa to North India. In Kuwait, it was found in Al-Jahra and Al-Wafra.

Diagnosis: the fangs are carried posteriorly on the jaws. It is oviparous. Its colour is olive brown dorsally, with 3 longitudinal lines: a middle thin yellowish line and a broad yellowish line on each side of the body. The ventral side is yellowish white, with a broad grey longitudinal band, and 2 narrow lateral bands. On the head, there is a continuous dark line on each side, extending from the snout down to the neck region and interrupted by the eye.

Coluber ventromaculatus (Rat snake); Fig. 19.

Distribution: it is found below rocks in Al-Jalia, and in old houses in Kuwait.

Diagnosis: fangs are absent. Its colour is dark grey dorsally, with small scattered dark brown spots. The ventral side is pale grey, with interrupted dark bands.

Habits: it feeds on small birds, lizards and other snakes. It is oviparous.

Lytorhynchus gaddi; Fig. 20.

Geographical Distribution: it is found in North Africa and South West Asia. In Kuwait, it is collected from Al-Jalia, Al-Jahra and Al-Wafra.

Diagnosis: the snout is broad. The colour is sandy on the dorsal side, with large regular oval brown areas, which are very close to each other. Small brown spots on both sides alternate with these oval areas. A transverse brown band crosses the eyes. An oblique brown elongate area extends just behind the eye. A large rectangular brown area occupies the dorsal side of the head behind the eyes.

Spalerosophis diadema (Schl.) Flow.; Fig. 21

Distribution: it inhabits the dry sandy areas in Al-Jalia and Al-Atraf.

Diagnosis: the head is covered by regular shields. It is flattened and quite distinct from the neck. Its colour is sandy with large rhomboid dark brown areas on the dorsal side, alternating with smaller elongated patches on the sides. The colour of the belly is yellowish. On the head, there are two oblique elongated dark brown patches extending behind the eyes up to the last upper labials. Also, there are two oblique,

more or less elongate, dark brown lines on the parietal shields.

Habits: it feeds mostly on small rodents.

FAMILY BOIDAE

This family includes the large boas with prehensile tails. They live on tops of the trees and kill their prey by constriction. None is poisonous. They are usually viviparous.

Eryx jayakari (Jayakar's sand boa, native name: Defn)

Geographical Distribution: the genus *Eryx* represents sand boas which gave up living in the tops of trees or in rivers, to lead a subterranean life. They range from North and East Africa to India in the east and to Central Asia in the north (Schmidt and Inger 1957).

Diagnosis: the head and tail are short, the eyes are small and located on the top of head. Colour is yellowish dorsally, with brown transverse lines, and whitish below.

Habits: *E. jayakari* is a nocturnal snake burrowing in sand.

FAMILY HYDROPHIDAE (SEA SNAKES - NATIVE NAME FOR SEA SNAKES: HANEISH AL BAHR)

It represents a small family of about 50 species living in warm seas near the coast of Asia from the Arabian Gulf to Japan and near the Australian coast. They are also found in the Pacific. Specimens have been found off the coast of Northern South America.

The whole family is marine, including species which are totally adapted and cannot live on land. They generally prefer shallow seas not far from land. Most sea snakes have lost the ventral shields found in land snakes and thus cannot walk on land properly (Stidworthy 1969). They have valves in the nostrils to prevent ingress of water. They can draw the front end of the trachea up to the choanae of the nostrils, an adaptation for air breathing while the head is partly submerged. The lung is very large and the hind part may serve to store air when diving. The body is flattened laterally and the tail, by forming a paddle, aids the snake in diving.

Little is known about the feeding habits of sea snakes. They may feed on fishes, preferring eels, since they are easy to swallow. However, they do not attack people swimming in the water. Sea snakes are often caught with fish

in the nets, as occasionally happens in Kuwait waters. In some places, they are used as food. They can be caught easily at night, being attracted by lamps.

Hydrophis cyanocinctus (Blue-banded sea snake); Fig. 22.

Geographical Distribution: it is found along the coast of Asia and the Arabian Gulf.

Diagnosis: the head is small, the neck cylindrical, and the nostrils directed upwards. Schmidt and Inger (1957), state that another species (*H. semperi*) is adjusted to life in fresh water of Lake Taal in the Phillipine Islands. The colour of *H. cyanocinctus* is grey, with large dark rings around the body along its whole length. The rings are darker dorsally than ventrally.

Pelamis platurus (The black-and-yellow sea-snake); Fig. 23.

Geographical Distribution: it is the only snake which has crossed the eastern side of the Pacific Ocean and reached the west coast of the Americas (Schmidt & Inger 1957, and Stidworthy 1969).

Diagnosis: the head is elongated and not distinguished from the neck (Fig. 24). The colour is dark brown and black on the upper side, and yellow on the lower side.

Habits: it is the most highly adapted snake for life in the sea, since it is much flattened, and is a fast swimmer.

FAMILY TYPHLOPIDAE

These are worm-like, primitively burrowing, but specialised snakes. They are found in the warm regions of the world. Stidworthy (1969) states that the short tail often ends in a spine which may be used in burrowing, and the front of the head has a single plate for pushing through the earth.

The head of *Typhlops* is blunt, the tail short, and the body covered by small equal scales which fit closely together (Bellairs 1957). The ventral scales are also smooth and shiny (Schmidt and Inger 1957), and the eyes are very small.

Typhlops braminus Daud. (Flowerpot Blind Snake); Fig. 25.

Geographical Distribution: *Typhlops* is found in South Western Asia, East Indies, Madagascar and in many of the Pacific Islands.

Diagnosis: it is a small cylindrical burrower, which superficially resembles worms rather than snakes. The head is small and blunt, the eyes tiny, slit-like and directed upwards (Fig. 26). The tail is very short and pointed and the neck not recognisable. The colour is golden yellow dorsally, with transverse dark brown bands interrupted below. The belly is yellowish. The top of the head is decorated with dark brown scattered spots.

Habits: *Typhlops* is a completely fossorial snake, rarely found active on the soil surface. It was found in Kuwait in humous soils rich in organic matter, near Al-Dbaiyyah, Al-Jalia, Al-Wafra, Khwaisat and Al-Jahra. Schmidt and Inger (1957) state that this snake tends to feed on minute insect larvae and other animals living in the soil rather than on termites.

FAMILY VIPERIDAE

Vipers are found in all parts of the world inhabited by snakes, except Madagascar and Australia, since these islands were isolated long before the evolution of vipers (Stidworthy 1969).

The family comprises true vipers and rattlesnakes. Vipers are mostly found in Africa and also in Europe and Asia.

Most vipers are terrestrial, but a few climb trees using their prehensile tails. There are no aquatic species. Shields on the head are replaced by numerous small scales, a feature which characterises the vipers generally. Vipers have the habit of camouflage. Poison fangs are long and directed backwards. When biting, the fangs are erected through the rotation of the maxillary bone. Vipers wait for their prey, strike it, wait for it to die and then swallow it whole (Schmidt & Inger 1957).

Cerastes cerastes (Linné) - Ander. (Viper); Fig. 27.

Geographical Distribution: It is found in Africa, Arabia and Egypt. It lives in sandy and rocky areas. It is found in Kuwait in Kathma, Jal-Az-Zor escarpment, Al-Jalia and near Ahmadi.

Diagnosis and Habits: the tail is very short. The keels of the lateral scales are arranged so that when the viper moves, the keels throw the sand upwards and it sinks below the surface and hides itself. The colour is sandy above, with median transverse brownish bands alternating with lateral brown patches. The head has dorsal

scattered brown spots. There are two forms of *Cerastes cerastes* (Linné) - Ander.: one which has a pair of horns (horned viper) and another without (non-horned viper). Horns are a pair of short-pointed horn-like scales that may serve to protect the eyes from the sun and sand (Stidworthy 1969).

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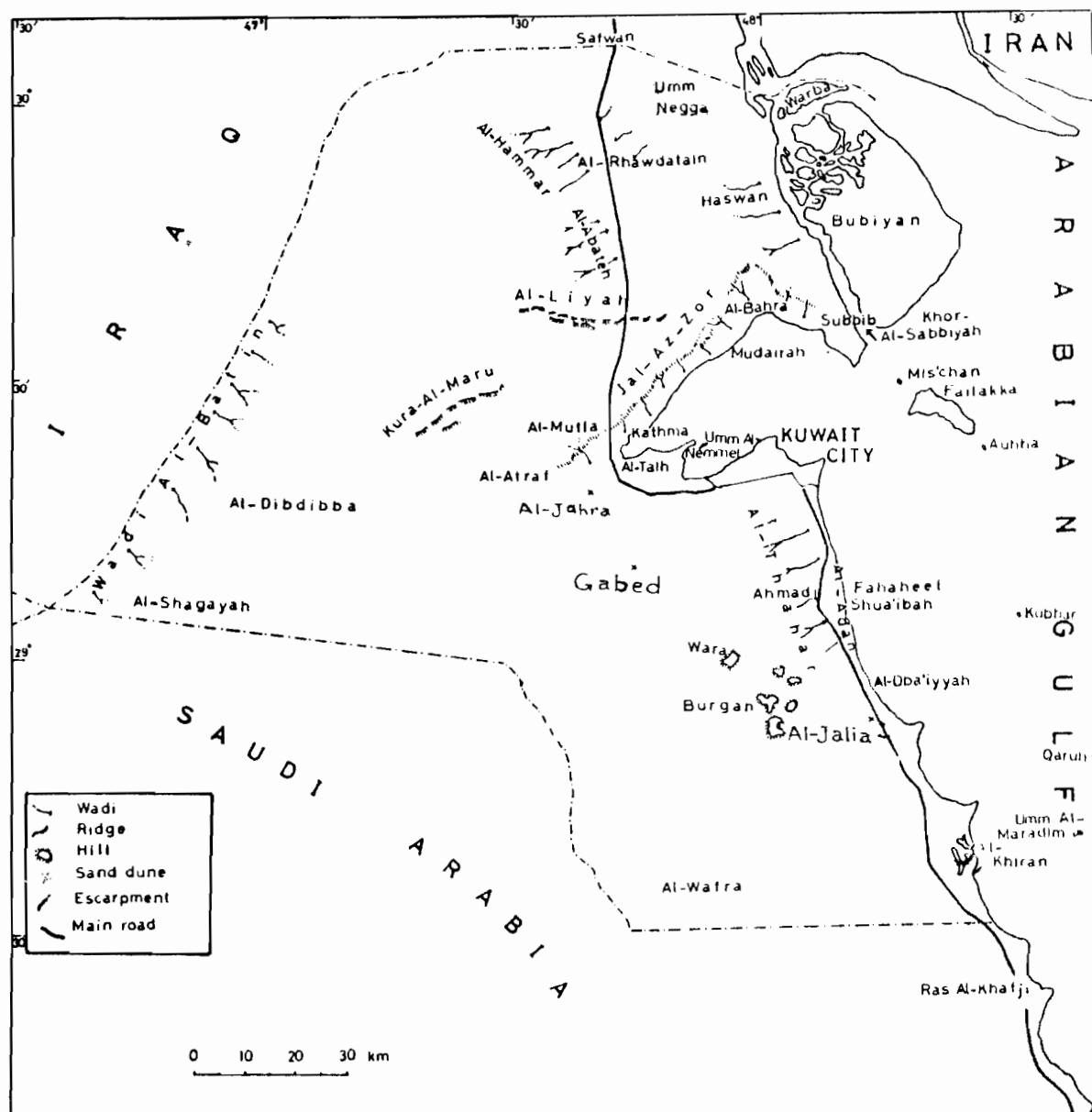
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District map of Kuwait

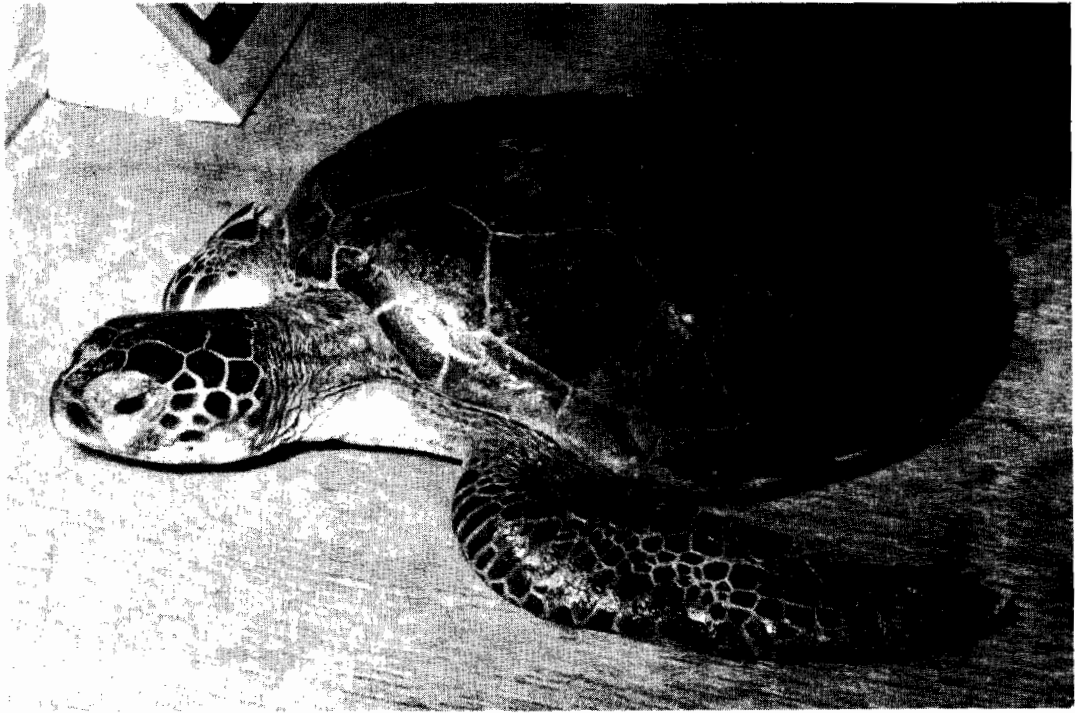


FIG. 1. Dorsal view of *Chelonia mydas*



FIG. 2. *Cyrtodactylus scaber*

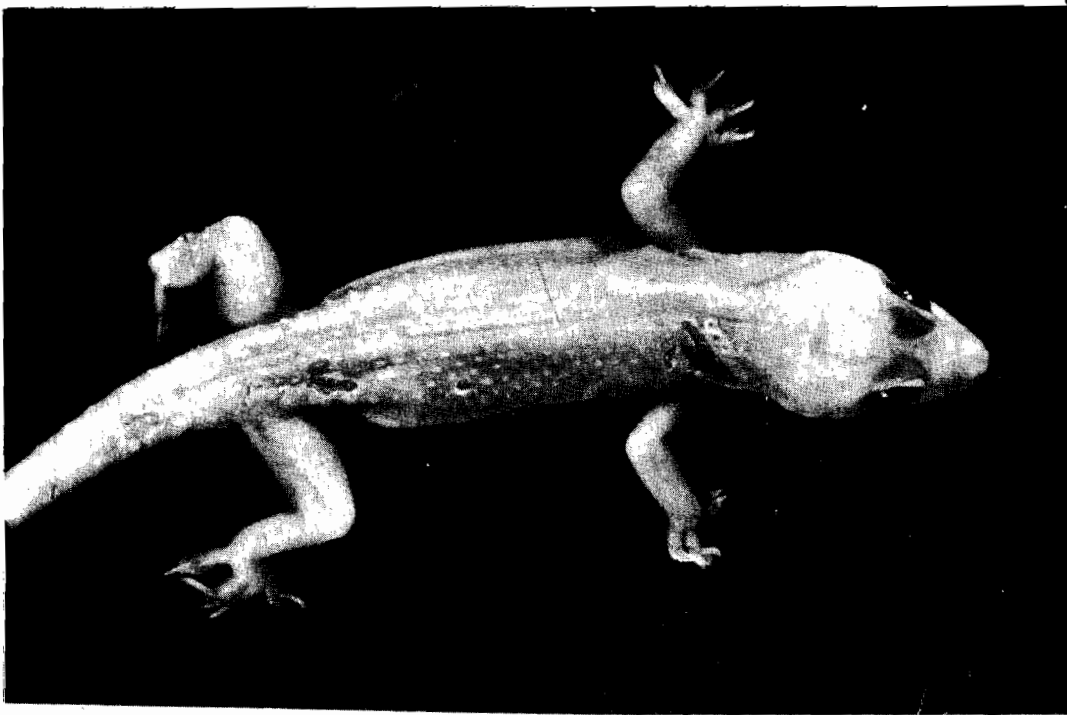


FIG. 3. *Hemidaactylus turcicus*

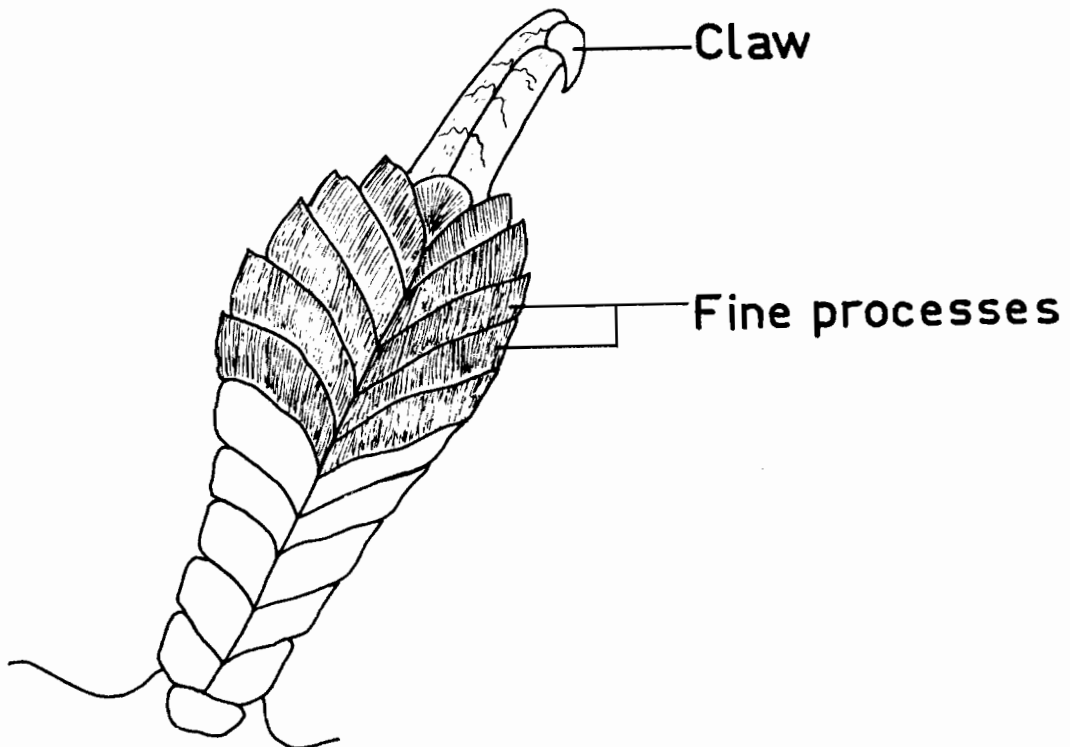


FIG. 4. Ventral view of the middle hind toe of *Hemidaactylus turcicus*, showing ventral lamellae



FIG. 5. *Bunopus tuberculatus*



FIG. 6. *Agama blanfordi*

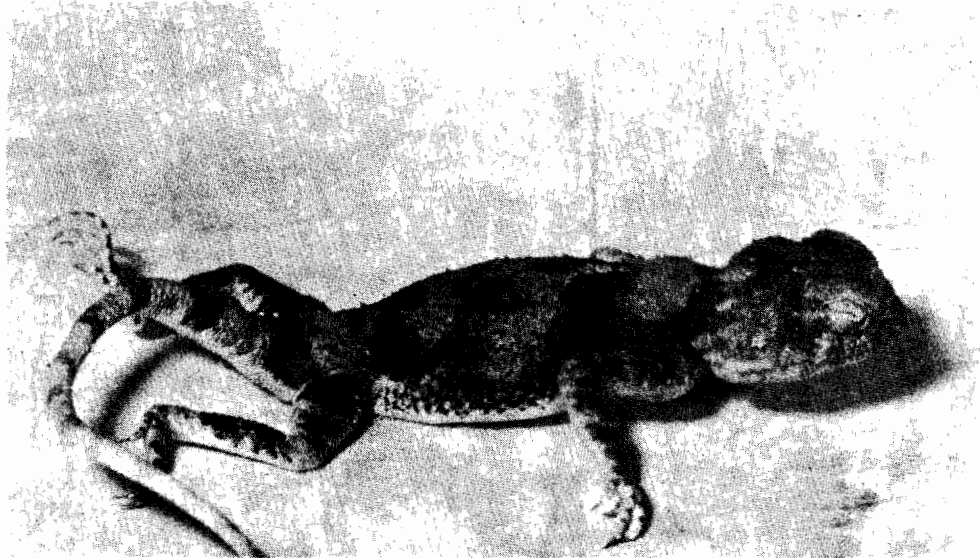


FIG. 7. *Agama jayakari*

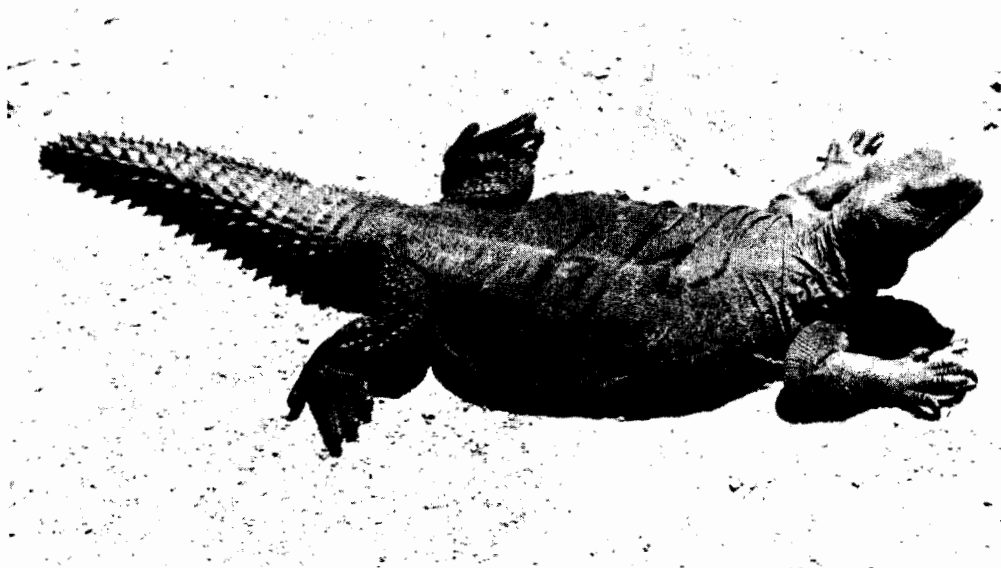


FIG. 8. *Uromastix microlepis*

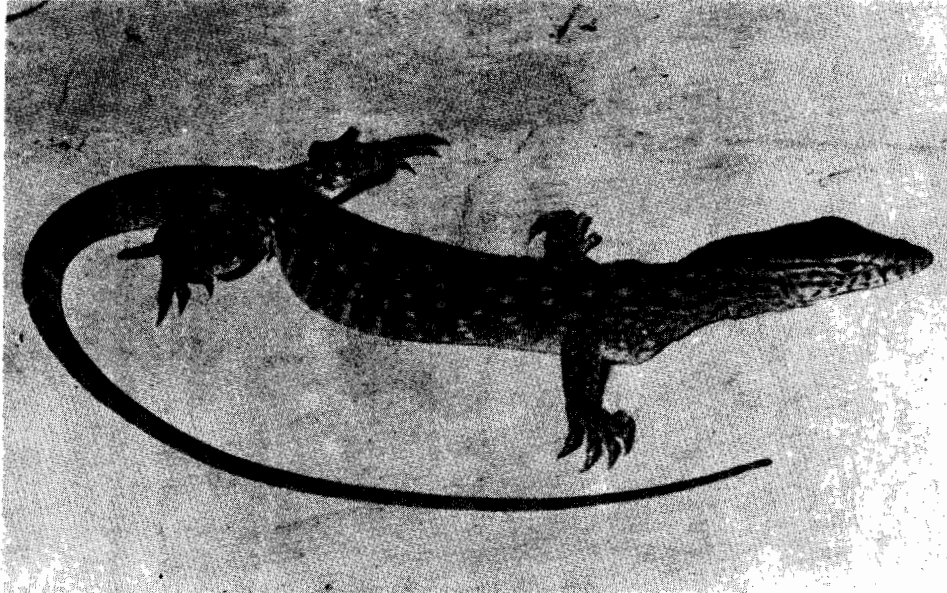


FIG. 9. *Varanus griseus*

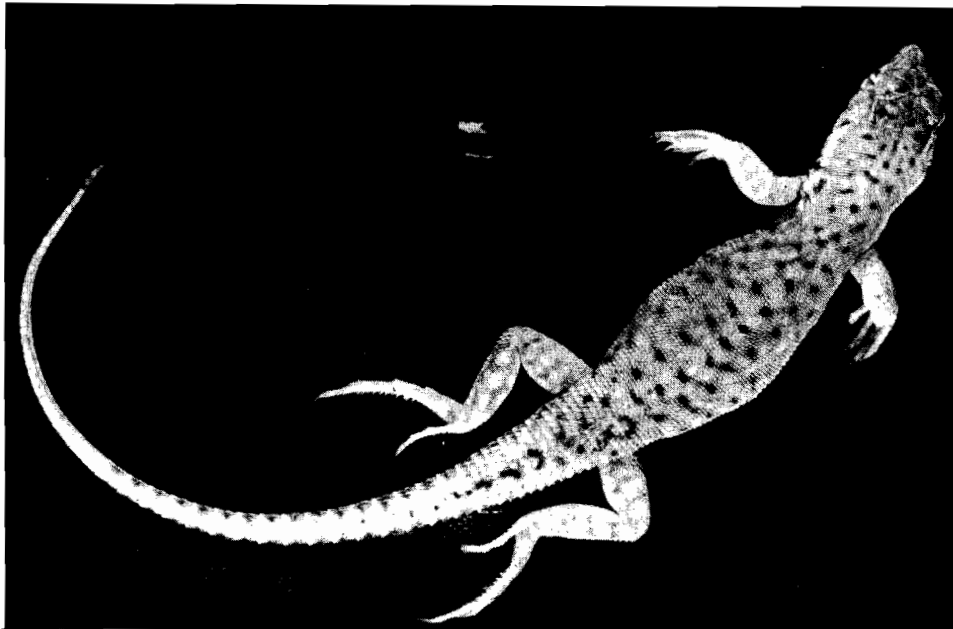


FIG. 10. *Acanthodactylus boskianus*

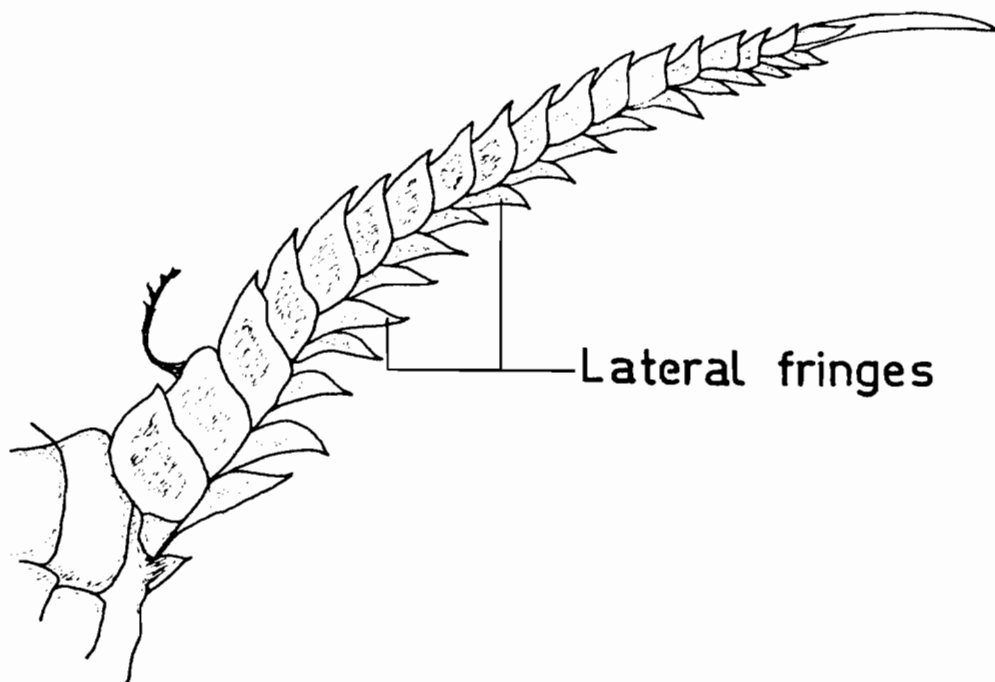


FIG. 11. Hind toe of *Acanthodactylus boskianus*, showing lateral fringes

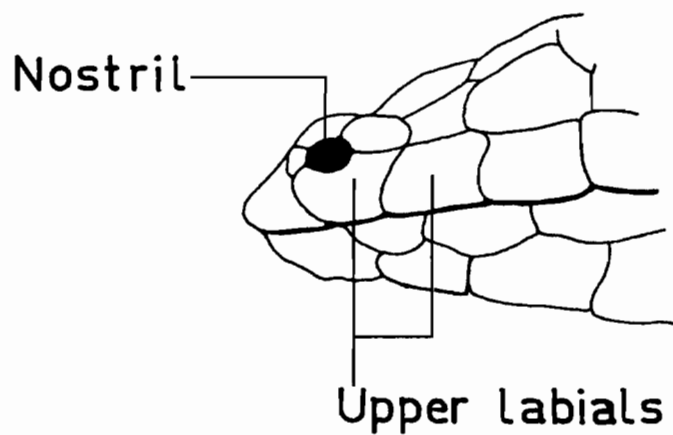


FIG. 12. Lateral view of the snout of *Acanthodactylus boskianus*, showing nostril in contact with the upper labials



FIG. 13. *Acanthodactylus scutellatus* during ecdysis

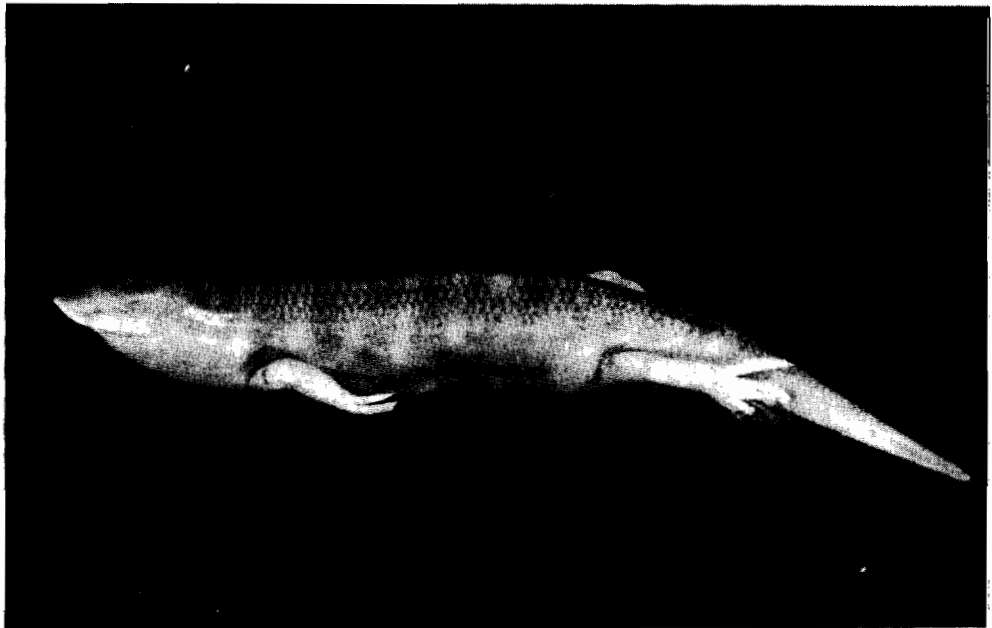


FIG. 14. *Scincus scincus*

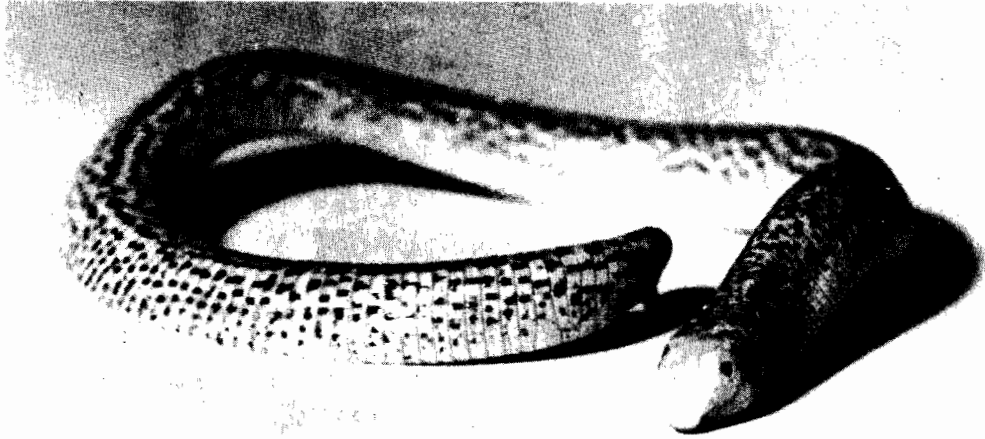


FIG. 15. *Diplometopon zarudnyi*

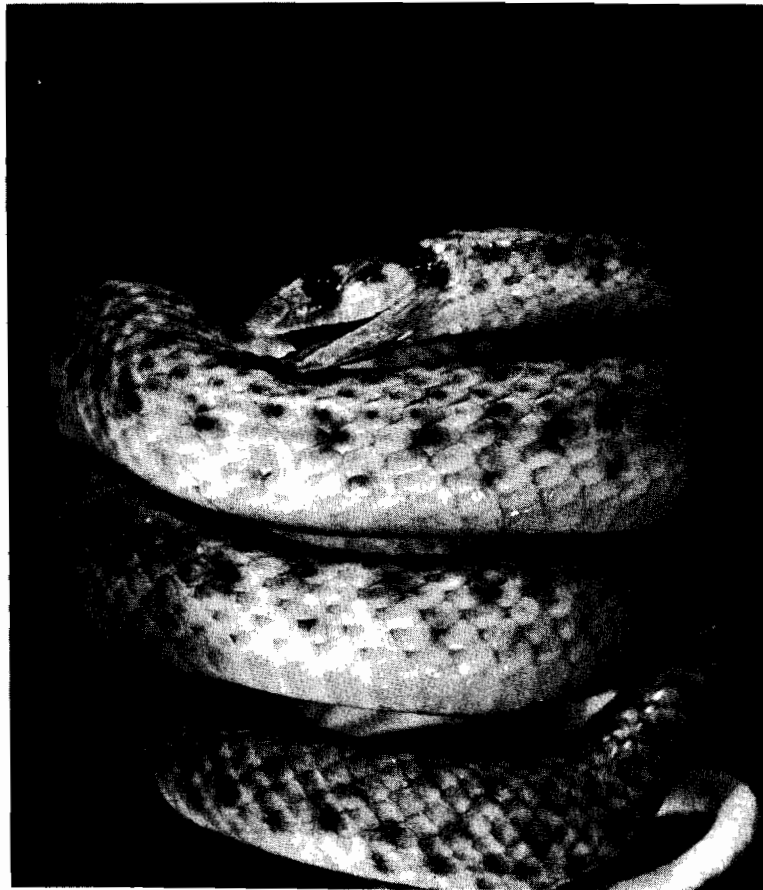


FIG. 16. *Malpolon moilensis*

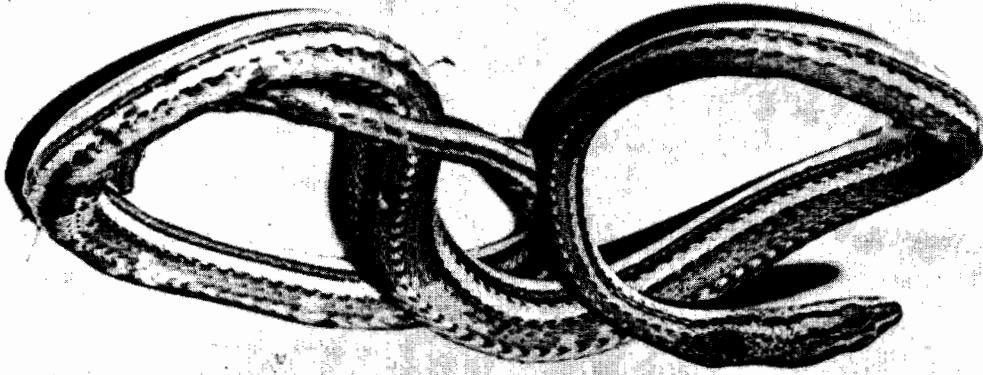


FIG. 17. *Psammophis schokari*

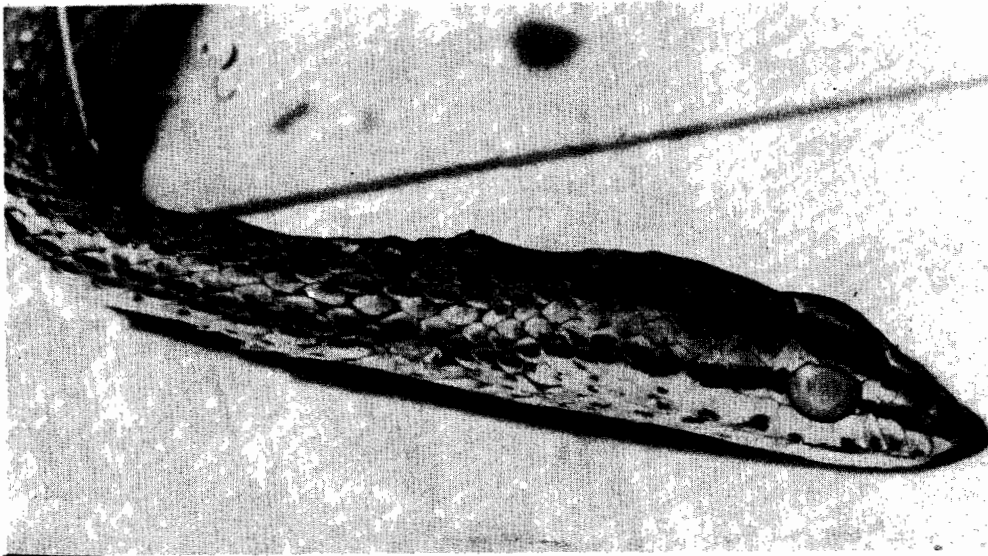


FIG. 18. Head of *Psammophis schokari*, showing milky secretion covering the eye just before ecdysis

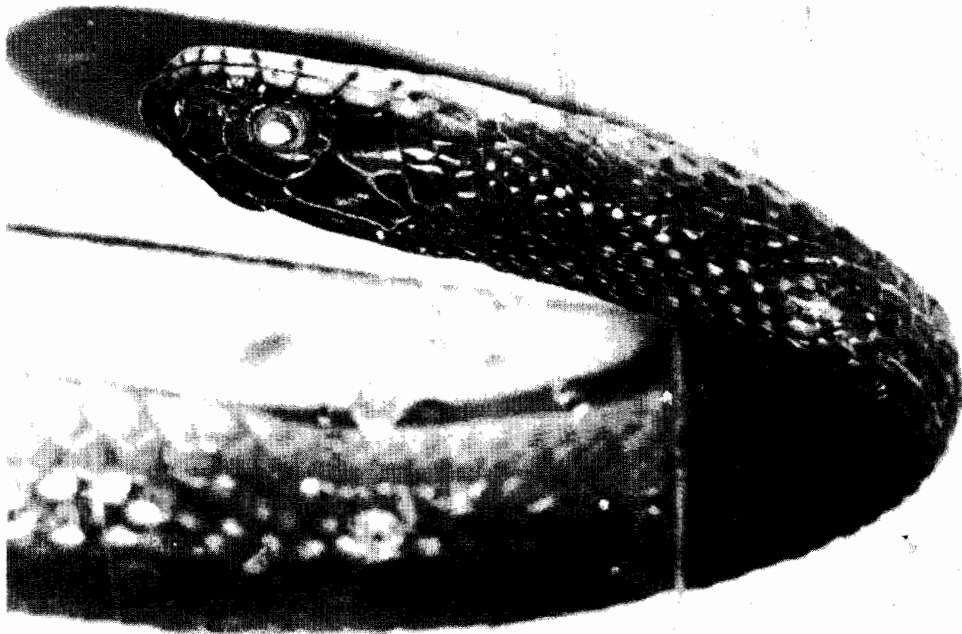


FIG. 19. *Coluber ventromaculatus*

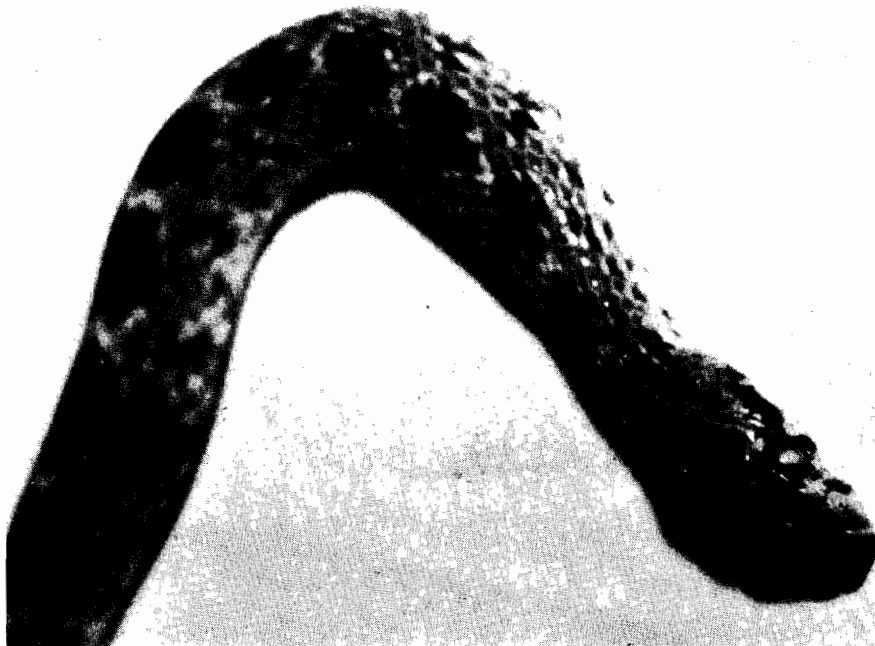


FIG. 20. *Lytorhynchus gadda*

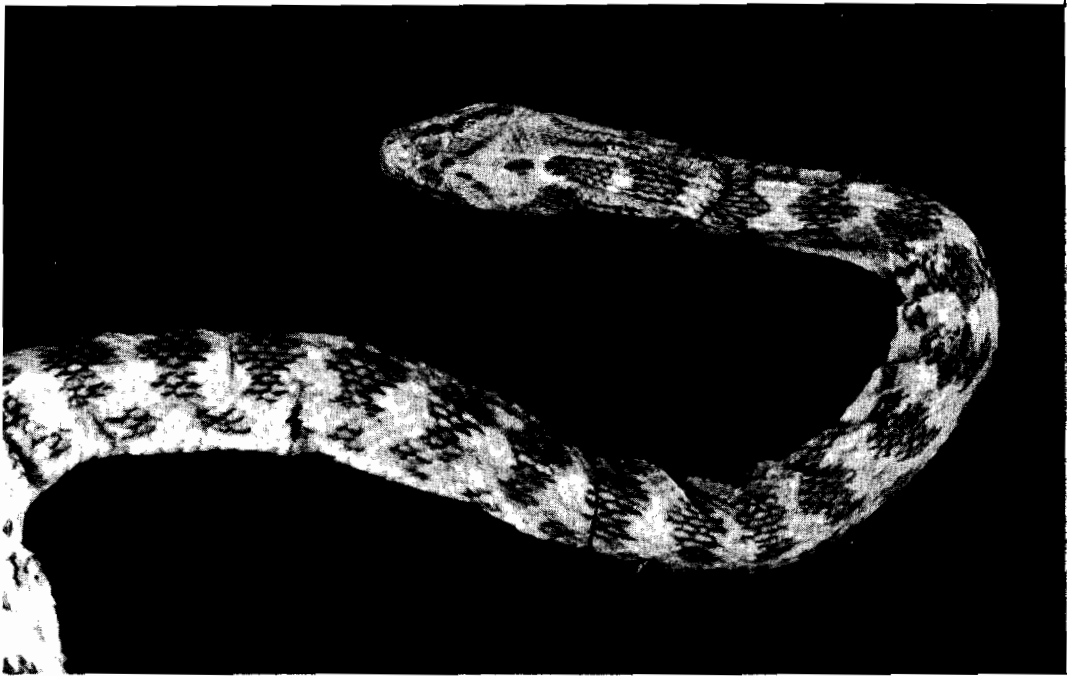


FIG. 21. *Spalerosophis diadema*

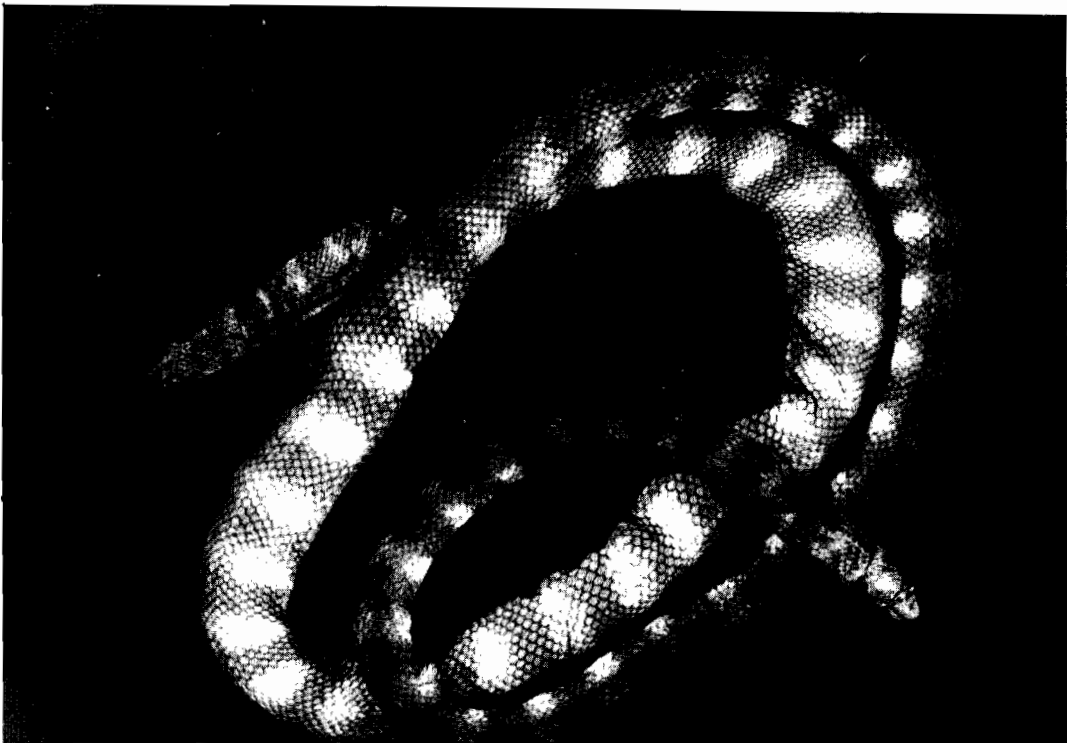


FIG. 22. *Hydrophis cyanocinctus*



FIG. 23. *Pelamis platurus*



FIG. 24. Head of *Pelamis platurus*

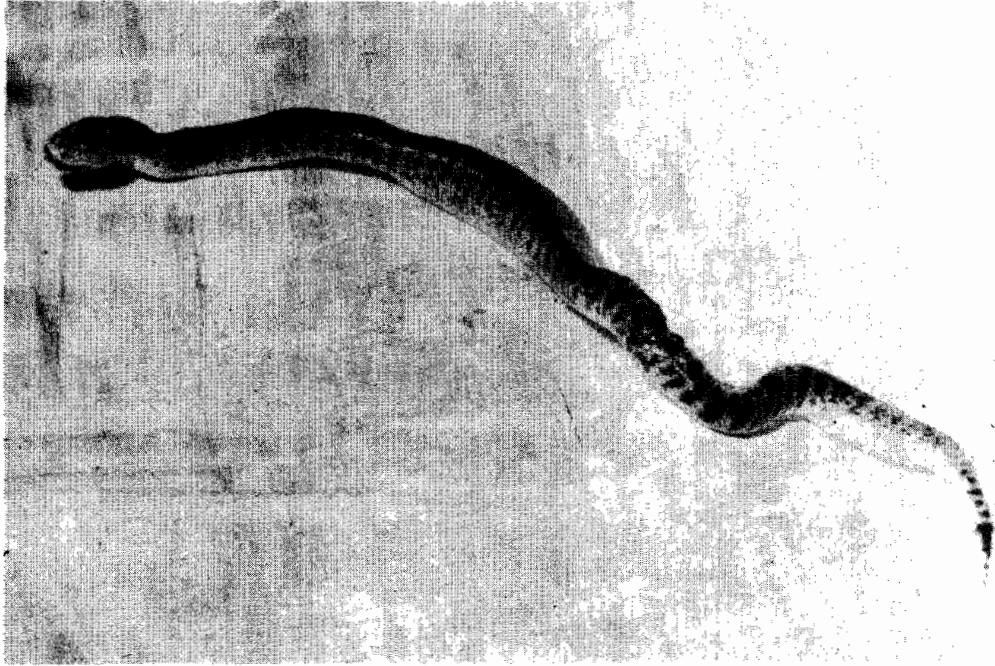


FIG. 25. *Typhlops braminus*



FIG. 26. Head of *Typhlops braminus*, showing tiny eyes directed upwards



FIG. 27. Head of *Cerastes cerastes*: horned (left) and non-horned (right)

سجل لبعض أنواع الزواحف الموجودة في الكويت

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قسم علم الحيوان بجامعة الكويت

خلاصة

نظرا لفقدان المعلومات العلمية عن زواحف الكويت ، فقد شعر الباحثان بالحاجة الى جمع وتصنيف الزواحف من المناطق والبيئات المختلفة ، ولذا قاما بجمع وتصنيف عينات من الزواحف التي تعيش في الكويت . وقد استغرق ذلك قرابة ثلاث سنوات ، حيث أن الفترات الملائمة لنشاط الزواحف تقع ما بين شهري مارس ومايو من كل عام ، حينما تكون الظروف المناخية مناسبة .

ان معظم أنواع الزواحف تتبع رتبة القشريات التي تضم السحالي والثعابين . وقد وجد الباحثان الأنواع الآتية :

- ترسة مائية واحدة تعيش في مياه الخليج العربي .
- سبعة عشرة سحلية تعيش في مناطق مختلفة من الصحراء والمنازل والاماكن المهجورة .
- عشرة ثعابين منها اثنان مائيان يعيشان في مياه الخليج ، وثمانية تعيش في مناطق صحراوية مختلفة .

كما قام الباحثان بتعريف أنواع الزواحف ، ووصف خواصها المميزة ، وطبائعها ، واماكن تواجدها . ويعتبر هذا البحث الاول من نوعه الذي يجري في الكويت على أساس علمي .