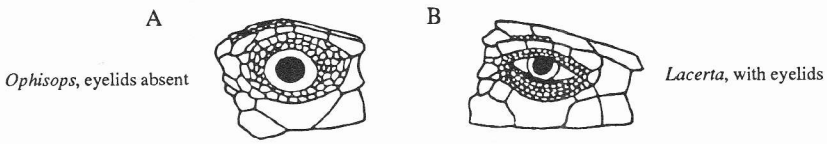
LACERTIDAE

Key to the lizards of the Family Lacertidae

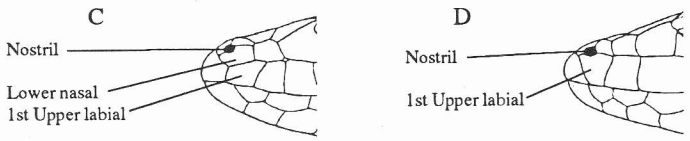
1a. Eyelids immovable, eye covered by a transparent shield (spectacle) (fig A); no throat collar . . *Ophisops elegans* (text, p. 63; plate 9G-H)

1b. Eyelids moveable (fig. B); throat collar present 2



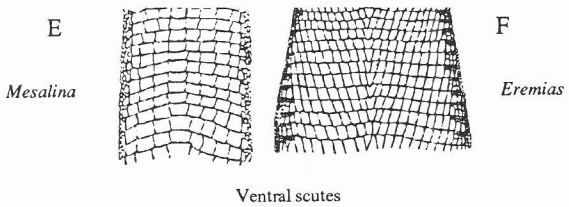
2a. Nostril separated from first upper labial by lower nasal shield (fig. C) 3

2b. Nostril in contact with first upper labial or separated from supralabial by very narrow brim (fig. D) 4



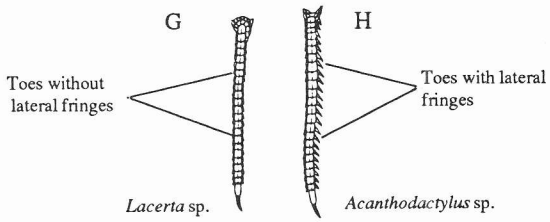
3a. Ventral plates in straight longitudinal series (fig. E); lower nasal resting on first supralabial . . . . . *Mesalina* (text, p. 60)

3b. Ventral plates in tessellated or oblique longitudinal series (fig. F); converging posteriorly; lower nasal resting on two or three supralabials . . . . . *Eremias persica* (text, p. 57; plate 8G)



4a. Digits with lateral fringes (fig. H) . . . *Acanthodactylus* (text, below)

4b. Digits without lateral fringes (fig. G) . . . . . *Lacerta* (text, p. 57)



Genus *Acanthodactylus* Fitzinger, 1834

Acanthodactylus Fitzinger (*in* Wiegmann), 1834:10 (Type species: *Lacerta boskiana* Lichtenstein 1823 [= *Lacerta boskiana* Daudin 1802], by monotypy).

Definition: Head shields normal, but occipital absent; nostril between two nasals and first labial; lower eyelid scaly; collar distinct; dorsal scales small and juxtaposed or large and imbricate; ventral plates subquadrangular, smooth, imbricate; digits subcylindrical, with keeled lamellae below, and lateral denticulation, at least on outer side of toes; femoral pores present; parietal foramen present. (M. Smith, 1935:370; Salvador, 1982:8.)

Key to the species of the genus *Acanthodactylus*
(After Salvador, 1982:8 and Arnold, 1986a:407-408)

1a. Scales on dorsal surface of base of tail smooth; ventral scales in straight longitudinal and transverse rows, 10-13 across belly 2
1b. Scales on dorsal surface of base of tail keeled, or if not, then ventral scales tessellated, usually with 14 or more in longest row across belly 3
2a. Usually 10 ventral scales in longest row across belly; subocular scale in contact with mouth; three longitudinal rows of scales on fingers; no portion of tympanum covered by skin . . . . . *Acanthodactylus orientalis* (text, p. 54)
2b. Usually 11-13 ventral scales in longest row across belly; subocular scale separated from mouth in most cases; often a few scales on anterior surface of fingers forming a partial 4th longitudinal scale row; upper half of ear opening covered by skin . . . . . *Acanthodactylus robustus* (text, p. 55)
3a. Three longitudinal rows of scales around 3rd and 4th fingers – dorsal, ventral, and posterior 4
3b. Four longitudinal scale rows around 3rd and 4th fingers – dorsal, ventral, posterior and anterior, the last sometimes irregular 5
4a. Often a dark mid-dorsal stripe on body running forwards to the back of the head; stripe may include lighter areas but is about the same width throughout; dorsum of tail usually lighter than its sides, its ventral surface and tip usually red in young and many females; color pattern variable, some generally dappled or faded; eyelid distinctly pectinate; 4th toe scarcely pectinate; 25-38 dorsal scales across midbody . . . . *Acanthodactylus opheodurus* (text, p. 53; plate 8D)
4b. Mid-dorsal stripe on body forks before reaching head and sometimes encloses a short central stripe on neck; dorsum of tail often not clearly lighter than sides, its venter and tip usually blue in young and immature animals; eyelid scarcely pectinate; 4th toe distinctly

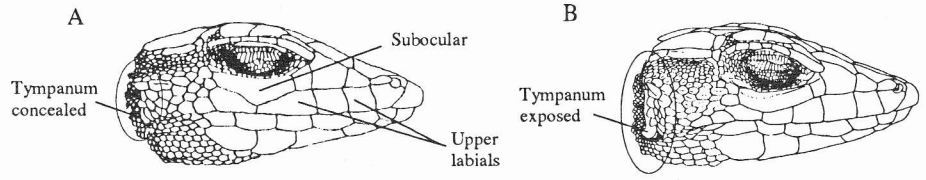
pectinate; usually 18-30 dorsal scales across midbody
. . . . . *Acanthodactylus boskianus* (text, p. 51; plate 8A)

5a. Anterior longitudinal row of scales on 3rd and 4th fingers usually irregular, other characters as described in 4a above
. . . . . *Acanthodactylus opheodurus* (text, p. 53; plate 8D)

5b. All longitudinal rows of scales on 3rd and 4th fingers regular and continuous 6

6a. Upper part of tympanum hidden by fold of skin (if necessary, check with probe) (fig. A); body slender 7

6b. Tympanum more fully exposed (fig. B); body not especially slender in most cases 8



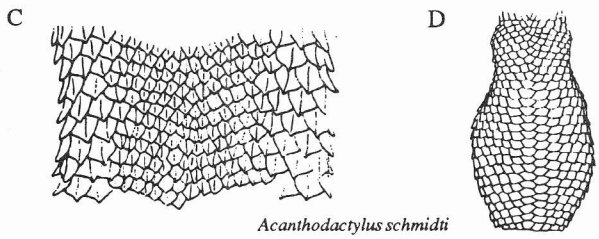
A. gongrorhynchatus *A. schmidti*

Ear region centered in oval

7a. Subocular scale wedged between 4th and 5th upper labial scales, 4 upper labials anterior to center of eye (fig. A); snout narrow with swollen nasal scales; 56-74 dorsal scales across midbody; fingers with well developed lateral fringes and scales beneath each with a single central keel; 10-12 (occasionally 14) ventral scales in longest row across belly; tail may be bluish in young
. . . . . *Acanthodactylus gongrorhynchatus* (text, p. 52)

7b. Subocular scale wedged among 4th, 5th and 6th upper labial scales, 5 upper labials anterior to center of eye (fig. B); snout not especially narrow and nasals not conspicuously swollen; 36-44 dorsal scales across midbody; fingers with poorly developed lateral fringes and scales beneath, each with several keels; 12 (occasionally 14) ventral scales in longest row across belly; tail yellow in young
. . . . . *Acanthodactylus haasi* (text, p. 53; plate 8C)

8a. Dorsolateral body scales in front of hind legs usually enlarged (fig. C, next page), often double the size of those on central dorsum; no longitudinal stripes on body, even in young; tail may be transversely banded and is blue in juveniles; ventral scales tessellated, at least at sides (fig. D), 13-18 in longest row across belly; 33-51 dorsal scales across midbody . . . *Acanthodactylus schmidti* (text, p. 55; plate 8E)



Acanthodactylus schmidti

8b. Not this combination; no obvious dorsolateral tracts of enlarged scales on hind back; tail not banded 9

9a. Usually 4 upper labial scales anterior to center of eye; toes scarcely pectinate; often a dorsal pattern of longitudinal rows of dark spots, which may alternate with pale areas in young . . . . . *Acanthodactylus grandis* (text, p. 52; plate 8B)

9b. 5 upper labial scales anterior to center of eye; toes distinctly pectinate; longitudinal stripes or rows of spots, if present, confined to sides; middle of back irregularly spotted, dappled or reticulated . 10

10a. Dorsal body scales keeled; 15-20 ventral scales in longest row across belly; a dark dorsolateral band often bordered by lighter streaks . . . . . *Acanthodactylus tilburyi* (text, p. 56)

10b. Dorsal body scales more or less smooth; 12-16, usually 14 ventral scales in longest row across belly; sides not obviously dark . . . . . *Acanthodactylus scutellatus hardyi* (text, p. 55; plate 8F)

***Acanthodactylus boskianus* (Daudin, 1802) (Plate 8A)**

Lacerta boskiana Daudin, 1802, 3:188, pl. 36, fig. 2 (Type locality: L'Ile Saint-Dominique [in error]).

Lacerta aspera Audouin, 1829:174 (Type locality: "Egypte").

Acanthodactylus boskianus var. *euphraticus* Boulenger, 1919:550 (Type locality: Ramadieh on the Euphrates, 100 km west of Baghdad, Iraq).– Boulenger, 1920b:352.– K. Schmidt, 1939:63.– Khalaf, 1959:29.– Eiselt, 1976:807.

Acanthodactylus boskianus asper: Boulenger, 1920b:352.– K. Schmidt, 1939:62.– Khalaf, 1959:28; 1960:13.– Haas and Y. Werner, 1969:343.

Acanthodactylus boskianus: Salvador, 1982:23-37, figs. 4-6.– Arnold, 1986a:423.– Al-Sadoon, 1988:64.

Acanthodactylus schreiberi syriacus: Reed and Marx, 1959:102.

Diagnosis: Usually 4 entire supraoculars, occasionally the 1st divided; pectinate anterior border of ear opening; keeled temporal scales; slightly denticulated eyelids; conspicuous gular fold; 3 series of scales around

fingers; ventrals in 10 straight longitudinal rows; very large, keeled, imbricate dorsals; granular scales on flanks; moderate to strong fringe on 4th toe; large, imbricate, sharply keeled scales on upper surface of tail. (Salvador, 1982:23.)

Range: Widespread, North Africa to Iraq and adjacent Turkey.

Remarks: Salvador (1982:30) examined specimens from Jarmo, Kirkuk Liwa, Iraq, reported by Reed and Marx (1959:102) as *A. schreiberi syriacus,* and attributed them to *A. boskianus,* but with reservation. The distribution of *A. schreiberi* is Cyprus, Israel, and Lebanon. *Acanthodactylus boskianus* is both widely distributed and varies greatly throughout its range. It is in need of careful revision (see also Arnold, 1986a). *A. boskianus asper* is the nominal subspecies found in Iraq; we have chosen not to use the trinomen pending a knowledgeable revisionary study.

Habitat: Steppe grassland (short grass and shrub).

Acanthodactylus gongrorhynchatus Leviton and S. Anderson, 1967

Acanthodactylus scutellatus: Parker, 1931:521.
Acanthodactylus fraseri (not of Boulenger, 1918): Haas, 1957:72 (part).
Acanthodactylus gongrorhynchatus Leviton and S. Anderson, 1967:171, figs. 9a-10a (Type locality: Beda Azan [23°41'N, 53°28'E], Abu Dhabi).– Arnold, 1986a:424.– Ross, 1989b:426, figs. 3-4, col. pl. 2

Diagnosis: Four series of scales around fingers, lateral and median series enlarged to form fringes, lamellae with single median keel and sloping sides; snout 1½ times the length of the postocular part of head; 4 upper labials to below center of eye; 4 supraoculars, the fourth partially broken up into small granules; ventral plates in 10-14 almost straight longitudinal series, the median plates distinctly broader than long; posterior dorsal scales small, subimbricate, with prominent keels, in 56-77 longitudinal rows and 26-32 transverse rows between hind limbs; gular shields 34-44; 24-29 lamellae beneath fourth toe; frontonasal longer than broad, one or two slightly enlarged gular granules bordering chin shields four and five; temporal granules keeled; femoral pores distinct, 20-25 on each side.

Range: Eastern Saudi Arabia in the vicinity of Dhahran, Dhana near Riyadh and eastern Rub al Khali; western United Arab Emirates.

Acanthodactylus grandis Boulenger, 1909 (Plate 8B)

Acanthodactylus grandis Boulenger, 1909:189 (Type locality: Jerud and Ataibé, east of Damascus and Khan Agach between Damascus and

Kutaife, Syria).– Haas, 1952:21.– Khalaf, 1959:29.– Arnold, 1986a: 424.

Acanthodactylus fraseri Boulenger, 1918a:373 (Type locality: Zobeya [= Az Zubayr, 30°23'N, 47°43'E], Shariba, Lower Mesopotamia [Iraq]); 1920b:352.– Schmidt, 1941:162.

Diagnosis: 4 supraoculars; one row of granules between supraoculars and superciliaries; 4 supralabials anterior to subocular; temporals granular, not keeled; ventral plates not forming straight longitudinal series, 14-16 in longest transverse row; 18-22 dorsal scales in transverse series behind hind limbs; 4 series of scales around fingers; lateral fringe on toes scant to absent.

Range: Iraq, southwestern Iran, Jordan, eastern Lebanon, northern Saudi Arabia, Syria.

Acanthodactylus haasi Leviton and S. Anderson, 1967 (Plate 8C)

Acanthodactylus fraseri (not of Boulenger, 1918): Haas, 1957:72 (in error).

Acanthodactylus haasi Leviton and S. Anderson, 1967:177, figs. 9b-10b (Type locality, Dhahran, Saudi Arabia).– Salvador, 1982:139-143, figs. 92-94.– Arnold, 1986a:424.– Ross, 1989b:428, fig. 1 [map], col. pl. 3.

Diagnosis: Four series of scales around fingers; lateral and median series keeled, neither enlarged to form fringes, lamellae multicarinate with as many as 7 ridges per plate; two large supraoculars, the first and fourth broken up; ventral plates in 12 straight longitudinal series; dorsal scales subimbricate to imbricate, keeled, 16 in transverse series between hind limbs; outer edge of fourth toe strongly fringed; gular shields 25; longitudinal dorsal scale rows 44; frontonasal broader than long.

Range: Northern and eastern Saudi Arabia in the vicinity of Dhahran and Sakaka; central Oman.

Remarks: According to Arnold (1986a:424), this species climbs in low vegetation, unusual for *Acanthodactylus*.

Acanthodactylus opheodurus Arnold, 1980 (Plate 8D)

Acanthodactylus opheodurus Arnold, 1980b:296 (Type locality: Jazir Coast [18°40'N, 16°40'E], Oman); 1986a:425.– Y. Werner, 1986:92.– Al-Sadoon, 1988:64.– Al-Sadoon, *et al.*, 1991:6.

Diagnosis: Small species with wide head, short snout; rounded and protruding nasals; 4 supraoculars; one row of granules between supraoculars and superciliaries; conspicuous subocular keel; temporal scales keeled; large ear opening bordered anteriorly by 3 or 4 scales; strongly pectinate eyelids;

small tympanic present; subocular separated from lip and wedged between 4th and 5th supralabials; ventrals in 10 straight longitudinal rows; flat, keeled dorsals much larger than laterals, 29-36 across middle of back; toes strongly pectinate; 3 series of scales around fingers; large, keeled scales on upper side of tail; 3 dark dorsal stripes. (Salvador, 1982:45.)

Range: Widespread in the Arabian Peninsula, Iraq, Jordan, Israel.

Acanthodactylus orientalis Angel, 1936

Acanthodactylus tristrami orientalis Angel, 1936:109 (Type locality: syntypes from "Palmyre, Tell Abiad, Ain Zahra, Deir ez Zor").– Haas, 1952:21.– Khalaf, 1959:28.– Arnold, 1983:318.

Acanthodactylus tristrami iracensis K. Schmidt, 1939:60 (Type locality: Haditha, Iraq).– Khalaf, 1959:30.– Haas and Y. Werner, 1969:345.– Salvador, 1982:106.

Acanthodactylus orientalis: Arnold, 1986a:424.

Diagnosis: Habitus robust; 2 supraoculars; one row of granules between supraoculars and superciliaries; eyelids without pectination; large ear opening without anterior pectination; temporals granular and without keels; subocular in contact with upper lip; 4 supralabials anterior to subocular; dorsals flat, without keels, 42-50 across middle of back; ventrals in 10 straight longitudinal rows; 3 series of scales around fingers; toes pectinate; scales on upper side of tail flat, medium-sized, smooth and imbricate. (Salvador, 1982:101, 106 for *A. t. iracensis*.)

Range: Western and central Iraq, eastern Syria.

Remarks: ". . . I have come to the conclusion that *orientalis* cannot be differentiated from *tristrami*, but rather, should only be considered a clinal variation of the latter. Even though only a few specimens have been studied, we can say that *iracensis*, on the other hand, does present significant differences from the Lebanon and Syrian populations." (Salvador, 1982: 102.)

"[*A. t. iracensis*] is said to have a lower mid-body dorsal scale count (45-46 against 48-56) and a weaker dorsal pattern than *A. t. orientalis*, but other material from the same area (Haas and Y. Werner, 1969) and from Najaf, further down the Euphrates (INHM [= Iraq Natural History Museum], with 51 dorsal scales at mid-body and a bold pattern), suggest that this distinction is illusory. *A. t. iracensis* is therefore referred to the synonymy of *orientalis*." (Arnold, 1983:318, 338-339.)

Acanthodactylus robustus F. Werner, 1929

Acanthodactylus robustus F. Werner, 1929:240, fig. 2 (Type locality: Syrian desert near Bir Molusi [= Meloza = Ka'ra], Iraq).– K. Schmidt, 1939: 63.– Khalaf, 1959:33.– Salvador, 1982:106-109.– Arnold, 1986a:425.

Diagnosis: Very robust habitus; short, wide head; relatively short limbs and tail; 2 supraoculars (2nd and 3rd; 1st and 4th divided); one or 2 rows of granules between supraoculars and superciliaries; eyelids not pectinate; ear opening not pectinate, upper half covered by fold of skin; temporal scales granular; indistinct subocular keel; subocular separated from lip by small scale; 4 supralabials anterior to subocular; gulars large, imbricate; ventrals in 12 straight longitudinal rows; dorsals smooth, flat, slightly larger than laterals; scales on upper surface of tail large, smooth, imbricate; 3 series of scales around fingers; toes slightly pectinate. (Salvador, 1982:107.)

Range: Southwestern Iraq, Jordan, Syria, northern Saudi Arabia.

Acanthodactylus schmidti Haas, 1957 (Plate 8E)

Acanthodactylus cantoris schmidti Haas, 1957:72 (Type locality: Dhahran, Saudi Arabia).

Acanthodactylus schmidti: Salvador, 1982:146-151.– Arnold, 1986a:425.– Al-Sadoon, 1988:64.– Ross, 1989b:424, figs. 1 [map] and 2, col. pl. 1.

Diagnosis: 3 large supraoculars (1st, 2nd, and 3rd; 4th usually divided in two); 5 supralabials anterior to subocular; subocular not bordering mouth; 2 keeled supratemporals; temporals sharply keeled; ventral plates in 12-16 oblique longitudinal series, outer rows consisting of pointed scales; 32-54 dorsals across middle of back, posterior dorsolateral scales double the size of the middorsals; dorsal color pattern reticulate, not lineate even in young specimens.

Range: Southwestern Iran, Jordan, Saudi Arabia (except extreme southwest), United Arab Emirates; probably southern and western Iraq and Kuwait.

Acanthodactylus scutellatus hardyi Haas, 1957 (Plate 8F)

Acanthodactylus scutellatus: Boulenger, 1920b:352.– Procter, 1921:240.– Khalaf, 1959:31.

Acanthodactylus scutellatus hardyi Haas, 1957:72 (Type locality: [Bir] Hirmas Station, north of Tebuk, Saudi Arabia).– Haas and Y. Werner, 1969:344.– Salvador, 1982:119-122.– Arnold, 1986a:425.

Diagnosis: Elongated pointed snout; wide head with raised nasal region; generally 3 supraoculars (4th fragmented); one row of granules between supraoculars and superciliaries; 5 supralabials anterior to subocular; temporals large and flat; no tympanic shield; first 3 pairs of submaxillaries in contact; dorsals small, flat, granular, never keeled; usually 12, sometimes 14 almost straight longitudinal rows of ventrals; 4 series of scales around fingers; 4th toe strongly fringed; reticulate color pattern. (Salvador, 1982: 113-114, 119-121.)

Range: Southern Iraq, Kuwait, northern Saudi Arabia.

Acanthodactylus tilburyi Arnold, 1986

Acanthodactylus tilburyi Arnold, 1986b:378, pl. 1, figs. 1-5 (Type locality: Nafud as Sirr [26°11'N, 44°19'E], near Riyadh, Saudi Arabia).

Diagnosis: A relatively small and slender species with a fairly pointed snout; supraocular scales more or less intact; subocular separated from lip; 5 upper labial scales anterior to center of eye; ear opening not restricted dorsally; dorsal scales keeled and somewhat imbricate, 41-57 at midbody, 18-24 between hind limbs; ventral scales tessellated, 15-19 in longest row across belly; 4 series of scales around fingers, subdigital lamellae with single well-developed keel and indications of others towards tips of fingers; digits strongly pectinate; dorsum dappled, dark dorsolateral stripe present, often with paler one above and below it; adults less contrastingly colored than juveniles; young and some females with red pigmented tail. (Arnold, 1986b: 378.)

Range: Known from two widely separated localities in Saudi Arabia, from the Riyadh area and from Al Jawf, in the northwest.

Genus *Eremias* Fitzinger, 1834

Eremias Fitzinger (*in* Wiegmann), 1834:9 (Type species: *Lacerta variabilis* Pallas 1811 [= *E. arguta* {Pallas 1771}], by subsequent designation of Fitzinger, 1843:21).

Definition: Head shields normal, but occipital often vestigial or absent; nostril between 3 or 4 nasals, not touching labial; lower eyelid scaly; collar complete or nearly so; dorsal scales small or granular, subimbricate, smooth, in converging longitudinal rows; digits with or without lateral fringes; tail cylindrical; femoral pores present (except in *E. aporesceles*).

Eremias persica Blanford, 1875 (Plate 8G)

Eremias persica Blanford, 1875:31 (Type locality: near Esfahan, Iran [restricted by M. Smith, 1935:383]).
Eremias velox persicus: Procter, 1921:240.
Eremias velox persica: Khalaf, 1959:36.

Diagnosis: Lower nasal resting on 2 or 3 supralabials; subocular bordering mouth; lateral scales of 4th toe not forming distinct fringe; 4th toe with single complete row of subdigital scales, a complete row of somewhat smaller ventrolateral scales, and a few scattered, much smaller dorsolateral scales not forming complete row (total of 3 scales counted around penultimate phalanx of 4th toe); the 2 series of femoral pores separated by space not greater than ¼ length of each; usually several collar scales distinctly larger than adjacent gulars; 28-39 gulars; 56-70 dorsals; 23-25 scales in 9th or 10th caudal annulus; broad lateral dark stripe enclosing one or 2 rows of white spots.

Range: Central and eastern portion of the Iranian Plateau at elevations from 600-3,050 m. In Iran it extends west to Qazvin and to the eastern front of the Zagros Mountains. In the north it reaches southern Turkmen, extending east and south through southern Afghanistan and Baluchistan to Waziristan, Pakistan. This species doubtfully occurs in Iraq; Procter's record requires verification.

Remarks: This is an Iranian Plateau form. It is one of several Procter records from Kuretu that needs confirmation. We suspect that most of the specimens whose provenance is given as Kuretu were collected elsewhere and mislabeled before being sent to London.

Genus *Lacerta* Linnaeus, 1758

Lacerta Linnaeus, 1758:200 (Type species: *Lacerta agilis* Linnaeus 1758, by subsequent designation of Fitzinger, 1843:20).

Definition: Head shields normal; nostril usually in contact with or close to the upper labial, bordered posteriorly by one, 2 or rarely 3 postnasals; lower eyelid usually scaly although a small transparent window may be present; anterior edges of parietals typically not extending to outer margin of postorbital bone; 1st supratemporal often large; masseteric often present; dorsal body scales small or moderate (smaller than proximal caudals); collar well marked; ventral scales smooth, truncate, strongly imbricate or not, in 6-10 longitudinal rows; toes cylindrical or compressed, usually tubercular

beneath (occasionally strongly keeled); femoral pores present; tail long, unmodified. (Arnold, 1973:330.)

Key to the species of the genus *Lacerta*

1a. Lower eyelid without transparent shields; subdigital lamellae smooth or tuberculate 2
1b. Lower eyelid with 5-7 transparent shields edged with black; subdigital lamellae keeled 3
2a. Ventral plates in 10 longitudinal series; 34-37 dorsals at midbody . . . . . *Lacerta princeps kurdistanica* (text, p. 60)
2b. Ventral plates in 6 or 8 longitudinal series; 38 or more dorsals at midbody; 12-16 femoral pores, row of pores does not reach knee; usually more than 20 temporal scales; 5th chin shield small or absent; young specimens with lateral line interrupted in its anterior half . . . . . *Lacerta media media* (text, p. 59; plate 9A-B)
3a. Ventrals usually in 6 longitudinal rows; preanal shield usually single; usually no well-developed scales bordering the preanal shield posteriorly . . . . . *Lacerta cappadocica muhtari* (text, below)
3b. Ventrals usually in 8 longitudinal rows; preanal shield usually divided; at least one row of small well-developed scales bordering the preanal shield posteriorly . . . . . *Lacerta cappadocica urmiana* (text, p. 59; plate 8H)

Lacerta cappadocica muhtari Eiselt, 1979

Lacerta cappadocica muhtari Eiselt, 1979:413, pls. 2-3 (Type locality: 26 km southwest of Bitlis, ca. 1200 m, eastern Turkey).

Diagnosis: Distinguished from *Lacerta c. cappadocica* through the sharply delineated dorsal pattern, especially through the straight- or notched-edged superciliary stripe, by the less strongly speckled head, the smaller average number of dorsals, gulars, femoral pores, and subdigital lamellae, the lesser fragmentation of the first supraocular and the higher percentage of parietals with concave outer margins. It is separated from *L. c. wolteri* by the almost complete lack of crossbarring of the tail, less strongly speckled pileus, receding of black pigmentation, and the smaller average number of dorsals, superciliary granules, gulars, and femoral pores; from *L. c. schmidtlerorum* through the continuous dorsal striping without disintegration of the stripes into rows of spots; from *L. c. urmiana* through the undivided anals and the six longitudinal rows of ventral shields. (Eiselt, 1979:413.)

Range: Mostly east of the Firat [Euphrates]; in the north scarce to the west of Malatya and Tunceli; in the east it ranges southward to Lake Van, Turkey and Sarsang, northern Iraq.

***Lacerta cappadocica urmiana* (Lantz and Suchow, 1934) (Plate 8H)**

Apathya cappadocica urmiana Lantz and Suchow, 1934:294, fig. (Type locality: Berdesur River gorge, Kherra [= Cherra], ca. 20 km southwest of Rezaiyeh, Iran).– K. Schmidt, 1939:60.– Khalaf, 1959:40.– Reed and Marx, 1959:100.

Diagnosis: Lower eyelid scaly, a transparent disk formed of 5-7 scales edged with black; nostril surrounded by 3-6 scales including 1st supralabial; 1st supraocular undivided, not in contact with frontal; 7-8 (rarely 6) superciliaries; collar distinct; dorsal scales smaller than caudals, juxtaposed, 52-60 across middle of body; 22-27 femoral pores; 8 longitudinal rows of ventrals; digits feebly compressed, with keeled subdigital lamellae.

Range: Turkey, east from Shiirt and Cizre; northeastern Iraq, as far south as Baghdad; West Azarbaijan, Iran, on west slope of Reza'iyeh Basin; also known from Byelyaki, Kurdistan, on Iran-Turkey border. Eiselt (1979:418) reports a specimen labeled "Bagdad." This seems an unlikely locality for this species.

Remarks: Haas (1952:21) remarks that the single male from Amadiyeh, Iraq is similar to *A. c. urmiana* in color pattern, but in other characteristics it more closely resembles *A. c. wolteri* (Bird, 1936). Eiselt (1979:418) examined at least two specimens from Amadiyah in the BMNH and several others from the general area and assigned them to *L. c. urmiana*. Eiselt (1979:415, 418) reports *L. c. urmiana* and *L. c. muhtari* both occur in the area of Sarsang, northern Iraq.

***Lacerta media media* Lantz and Cyrén, 1920 (Plate 9A-B)**

Lacerta viridis media Lantz and Cyrén, 1920:33 (Type locality: Tiflis [= Tbilisi], Transcaucasia, [Georgia] [restricted by Mertens and Müller, 1940:44]).

Lacerta trilineata media: L. Müller, 1939a:12.– Khalaf, 1963:12.– Haas and Y. Werner, 1969:341, fig. 4a-b.– Peters, 1964:203- 222.– Nettmann and Rykena, 1984:117.

Lacerta viridis: Khalaf, 1961:2.

Lacerta media media: Schmidtler, 1986b:127.

Diagnosis: Ventral plates trapezoidal, with notches between plates, in 6

longitudinal rows; collar strongly serrated; usually 2 superimposed postnasals; usually more than 20 temporal scales; 12-16 femoral pores, row of pores not reaching knee; 5th submaxillary small or absent.

Range: Northern and eastern Turkey, northeastern Iraq, the Caucasus, and western Iran; 1,000-1,500 m.

Remarks: According to J. Schmidtler (pers. commun., 30 Apr. 91 to Kraig Adler), ". . . earlier references to *L. strigata* occurring in Iraq are in error and are due to confusion with *L. media* or even *L. princeps*" (see also Darevsky 1984:87 *in* Böhme (ed.), Handbuch . . . , vol. 2/I).

Lacerta princeps kurdistanica Suchow, 1936

Lacerta princeps kurdistanica Suchow, 1936:304, pls. 2 (Type locality: Biare [= Bey Davraz, 35°16'N, 46°09'E], Iran [restricted to Biare = Beydarvaz by Eiselt, 1968b:412]).– Eiselt, 1968b:412, pl. 1, pl. 2, figs. 3, 6-7, pl. 3, figs. 4-5, pl. 4, pl. 5, figs. 1-2, 5; 1970:109-114.
Lacerta princeps: Khalaf, 1961:2.

Diagnosis: Outer row of ventrals (marginals) keeled, as are all flank scales; neck scales keeled; lower edge of subocular half or greater than half maximum length of shield; 17-19 gulars; 16-21 femoral pores on each side.

Range: Region of Zagros oak forest in northwestern Iran, northeastern Iraq, and southeastern Turkey.

Remarks: See remarks for *L. media*.

Genus *Mesalina* Gray, 1838

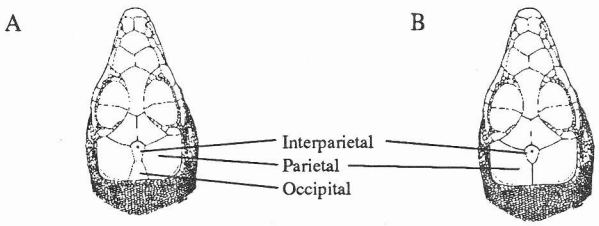
Mesalina Gray, 1838:282 (type species: *Mesalina lichtensteinii* Gray 1838 [= *Lacerta rubropunctata* Lichtenstein 1823], by monotypy).

Definition: Head shields normal; occipital shield usually present; lower nasal in contact with 1st supralabial only; nostril between 3 or 4 nasals and widely separated from supralabials; one or more transparent shields in lower eyelid; abdominal plates in parallel longitudinal rows.

Key to the species of the genus *Mesalina*

1a. Occipital absent or minute, not in contact with interparietal (fig. A, next page); transparent shields of lower eyelid not edged with black; scales on upper surface of lower leg smooth or only obliquely keeled 2

1b. Occipital in contact with interparietal (fig. B), or separated from it by a small shield; scales on upper surface of lower leg clearly keeled . 3



2a. Ventral scales squarish, all tending to be about the same width; usually 12 ventral scales in longest rows across belly; body often robust and snout short . *Mesalina brevirostris* (text, below; plate 9D)

2b. Ventral scales not all same width, those bordering midline of belly narrower than those lateral to them; usually 10 ventral scales in longest rows across belly; body quite slender and snout often long . . . . . *Mesalina adramitana* (text, below; plate 9C)

3a. Large transparent scales of lower eyelid edged with black . . . . . *Mesalina guttulata* (text, p. 62; plate 9E)

3b. Lower eyelid without a distinct window, but with a semitransparent area of 3-8 scales . . . . . *Mesalina olivieri* (text, p. 63; plate 9F)

Mesalina adramitana (Boulenger, 1917) (Plate 9C)

Eremias adramitana Boulenger, 1917:279 (Type locality: Hadramawt).
Mesalina adramitana: Arnold, 1986a:426.– Ross, 1988:453, fig. 1 (map), pl. 3.

Diagnosis: Occipital scale absent or very small; scales on upper surface of lower leg smooth or only obliquely keeled; ventral scales not all the same width, those bordering midline of belly narrower than those lateral to them; usually 10 ventral scales in longest rows across midbelly; adults usually not more than 42 mm snout-vent; tail not bright blue; 29-37 dorsal scales across midbody; gulars from symphysis of chin shields to collar 21-31; femoral pores 10-14; scales under 4th toe 21-26; no clear row of enlarged scales beneath lower forelimb; scales on upper surface of lower hind limb obviously larger than dorsals between hind limbs; pattern variable, often with dark sides and light spots. (After Arnold, 1986a:405-406.)

Range: Southern Yemen, Oman, United Arab Emirates, Qatar, adjoining Saudi Arabia to north of the Qatar Peninsula (at Scribners Canyon). (Arnold, 1986a:426; Ross 1988:fig. 1 [map].)

Mesalina brevirostris Blanford, 1874 (Plate 9D)

Mesalina brevirostris Blanford, 1874b:32 (Type locality: Tumb Island [Per-

sian Gulf] and Kalabagh, [northwestern] Punjab, Pakistan [restricted to Kalabagh, Punjab, Pakistan by K. Schmidt, 1939:66]).– Arnold, 1986a: 426.– Ross, 1988:453, fig. 1 (map), pl. 1.– Al-Sadoon, 1988:65.– Al-Sadoon, *et al.*, 1991: 6.

Eremias brevirostris: Boulenger, 1887b:87; 1920:30.– K. Schmidt, 1939: 66.– Weber, 1960:154.– Khalaf, 1961:2.

Eremias brevirostris brevirostris: Haas and Y. Werner, 1969:352, pl. 13, fig. B, pl. 17, fig. C-D.

Diagnosis: 3 nasals, lower in contact with rostral and 1st supralabial; ventral plates in 12 (rarely 10) straight longitudinal series; occipital absent or minute, not in contact with interparietal; collar curved or angular, free; head not strongly depressed, 1⅕ to 1⅓ as long as broad; 34-50 dorsal scales across middle of back; 19-28 lamellae under 4th toe.

Range: From Sinai (southern tip, and Tiran Island), northern Saudi Arabia, Syria, Jordan, Iraq, Kuwait, southwestern Iran and the islands of the Arabian Gulf, Pakistan and the Iranian Plateau (*fide* Minton, 1966:110), Bahrain, Qatar, United Arab Emirates.

Remarks: Arnold (1986a:426) thinks that this is a complex of species, the Tigris-Euphrates-southwestern Iran and Sharjah population differing in size from the populations inhabiting northern Saudi Arabia as well as those found in the highlands of Iran and Pakistan.

Haas and Y. Werner (1969:356) regarded specimens from eastern Syria, Iraq, and Jordan as well as Pakistan to be *M. b. brevirostris*. They felt the Arabian material may represent a distinct subspecies. They described *M. b. fieldi* from localities in southwestern Iran.

Weber (1960:154) reports animals active on the surface in mid-morning (9:00 a.m.) and at noon at surface temperatures of 38° and 46° C respectively. He also suggests that this is the most common lizard in central Iraq. Ross (1988:453) says that animals living near the coast have not been seen climbing into vegetation. Rather they "run from plant to plant, take refuge under flotsam and have been observed secreting away in Pepsi Cola tins." In contrast, Ross comments that individuals living inland climb into vegetation during the heat of the day, but in cool weather they climb onto stones or hide beneath them. For a photograph of typical habitat, see Plate 15G.

Mesalina guttulata (Lichtenstein, 1823) (Plate 9E)

Lacerta guttulata Lichtenstein, 1823:101 (Type locality: Egypt).
Eremias guttulata: A. Smith, 1845:pl. 48, fig. 8.
Eremias guttulata guttulata: K. Schmidt, 1939:65.

Mesalina guttulata: Arnold, 1986a:426.– Ross, 1988:453, fig. 1 (map), pl. 2.– Al-Sadoon, 1988:65.– Al-Sadoon, *et al.*, 1991:6.

Diagnosis: 3 nasals, lower in contact with rostral and 1st supralabial; ventral plates in 10 (rarely 8) straight longitudinal series; small occipital present; larger transparent scales of lower eyelid edged with black.

Range: Iraq, Jordan, northern and western Saudi Arabia, Yemen, Israel; throughout Iran and Afghanistan below 2,500 m, north to southern Turkmen, USSR; North Africa.

Remarks: Arnold (1986a:426) states that the eastern subspecies, *M. guttulata watsonana*, from Iran and Pakistan is specifically distinct. Thus far, however, recognition of the subspecies *M. guttulata watsonana* in the literature rests on the authority of M. Smith (1935:389-390) and not on published analysis of material.

Mesalina olivieri (Audouin, 1829) (Plate 9F)

Lacerta olivieri Audouin, 1829:175 (part) (Type locality: Egypt).
Mesalina olivieri: Arnold, 1986a:426.

Diagnosis: Occipital scale well developed, scales on upper surface of lower limb clearly keeled; lower eyelid without distinct window, but with semitransparent area of 3-8 scales, scales without black edges; 35 to 50 (usually 40-47) smooth scales across middle of body; 9-15 femoral pores on each side; often a broad dark band along back; hemipenis large, with lobes joined.

Range: Southern Iraq, Jordan, Israel, northern Saudi Arabia (Hail and between Al-Gaisumah and Turaif); North Africa.

Genus *Ophisops* Ménétriés, 1832

Ophisops Ménétriés, 1832:63 (Type species: *Ophisops elegans* Ménétriés 1832, by monotypy).

Definition: Lower eyelid fused with upper, with large transparent disc; ventral plates smooth; collar weakly defined or absent in middle; subdigital lamellae keeled; dorsal scales rhombic, imbricate, strongly keeled; femoral pores present.

Ophisops elegans Ménétriés, 1832 (Plate 9G-H)

Ophisops elegans Ménétriés, 1832:63 (Type locality: vicinity of Baku,

Caucasus, USSR).– Weber, 1960:154.– Khalaf, 1961:2.– Darevsky and Beutler, 1981:461-477, figs. 81-84.– Arnold, 1986a:427.

Amystes ehrenbergii Wiegmann, 1835:ii, pl. 1.

Ophiops elegans: Boulenger, 1920b:352; 1921:214.– Procter, 1921:240.

Ophiops elegans persicus Boulenger, 1918b:160 (Type locality: Superghan [= Sopurghan], Lake Urmia [= Daryacheh-ye Reza'iyeh], Ispahan [= Esfahan], Shiraz, and Kerman, all Iran).– Haas, 1952:21.

Ophisops elegans elegans: K. Schmidt, 1939:63.– Khalaf, 1959:38; 1960:14.

Ophisops elegans ehrenbergii: Khalaf, 1959:39.

Ophisops blanfordi K. Schmidt, 1939:64 (Type locality: Halfaya, 20 mi east [32 km] of Amara, Iraq).– Khalaf, 1959:40; 1960:14.

Ohisops [sic] *elegans*: Khalaf, 1961:2.

Diagnosis: Upper head shields smooth, 27-28 scales and plates around body; snout shorter than breadth of head across eyes; scales on nape small and granular; supraoculars separated from superciliaries by a series of small granules.

Range: The variously differentiated populations extend from the Bosporus through Southwest Asia through Iran, south to the Sinai Peninsula and Red Sea coast of northern Egypt, Jordan, Iraq, and north to Transcaucasian USSR.

PLATE 8

LACERTIDAE I

Family Lacertidae

Acanthodactylus boskianus (text, p. 51)

A: Adult in nature at Abu Hadriyah, Eastern Province, Saudi Arabia, 27°20'N, 48°58'E (BMNH 1982.1331). Photograph by William Ross.

Acanthodactylus grandis (text, p. 52)

B: Adult in nature near Turayf, Northern Province Frontier, Saudi Arabia, 31°44'N, 38°33'E. Photograph by Sheila Collenette, courtesy John Gasperetti.

Acanthodactylus haasi (text, p. 53)

C: Adult photographed in the field at Abqaiq, Eastern Province, Saudi Arabia, 25°55'N, 49°40'E (BMNH 1985.1195). Photograph by William Ross.

Acanthodactylus opheodurus (text, p. 53)

D: Adult male from Taif, Makkah Emirate, Saudi Arabia (BMNH 1978.2267, paratype). Photograph by William R. Branch. For photograph of typical habitat of this species, see Plate 3B.

Acanthodactylus schmidti (text, p. 55)

E: Adult female from western edge of Al Khobar, Eastern Province, Saudi Arabia (CAS 153842). Photograph by Jeffrey L. Briggs.

Acanthodactylus scutellatus hardyi (text, p. 55)

F: Adult male in nature at Dib Dibah, Eastern Province, Saudi Arabia, 28°0'N, 46°30'E (BMNH 1982.1340). Photograph by William Ross.

Eremias persica (text, p. 57)

G: Adult male from 6.5 km southwest of Pishin, Quetta District, Baluchistan Province, Pakistan (AMNH 88592). Photograph by Sherman A. Minton.

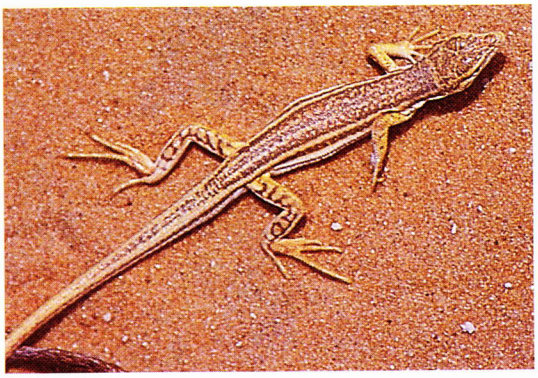
Lacerta cappadocica urmiana (text, p. 59)

H: Adult from 5 km west of Band, West Azarbaijan Province, Iran. Photograph by Steven C. Anderson.

PLATE 8

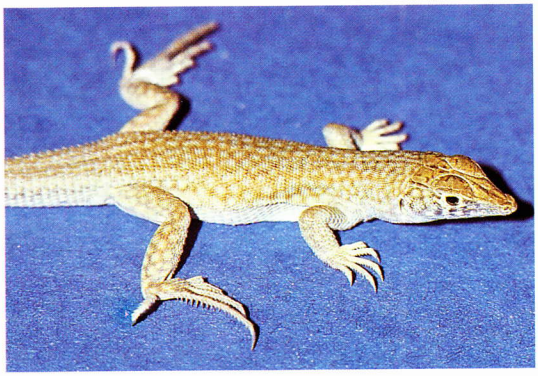
A

B



C

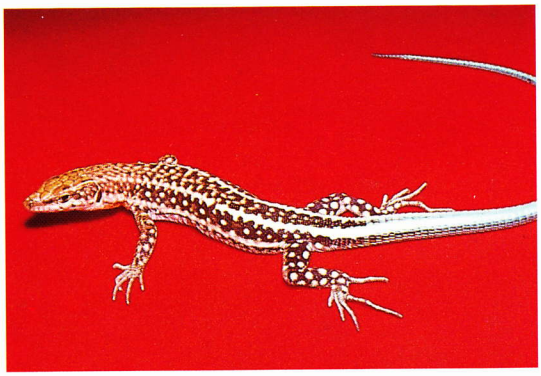
D



E

F

G



H

PLATE 9

LACERTIDAE II

Family Lacertidae

Lacerta media media (text, p. 59)

A-B: Specimens from East Quasr-i-Shirin, Kermanshahan Province, Iran (A, adult male, ZSM 15/68; B, juvenile, CS). Photographs by Josef F. Schmidtler.

Mesalina adramitana (text, p. 61)

C: Adult from Ghalla Dunes, Oman, 23°34'N, 58°26'E (SQU 1989.20). Photograph by Andrew S. Gardner.

Mesalina brevirostris (text, p. 61)

D: Adult from along the Sabiya Road, near Jahra, western edge of Kuwait Bay, Kuwait (ANSP). Photograph by Rudolf G. Arndt. For photograph of a typical habitat for this species, see Plate 15G.

Mesalina guttulata (text, p. 62)

E: Adult female from Dahal Abu Marwah, near Ma'aqala, Eastern Province, Saudi Arabia (USNM 249019). Photograph by Jeffrey L. Briggs.

Mesalina olivieri (text, p. 63)

F: Adult from Kerkennah Island, Mediterranean Sea, off the coast of Sfax, Tunisia (ZFMK 49552). Photograph by Ulrich Joger.

Ophisops elegans (text, p. 63)

G: Adult from Başkale, Van Province, Turkey. Photograph by Göran Nilson and Claes Andrén.

H: Adult male from Van, Van Province, Turkey, 1900 m (CS 8M81). Photograph by Josef F. Schmidtler.

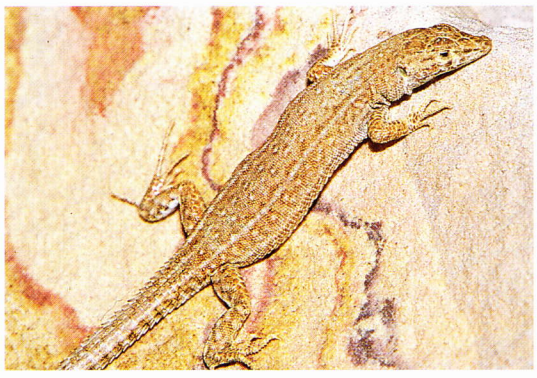
PLATE 9

A 

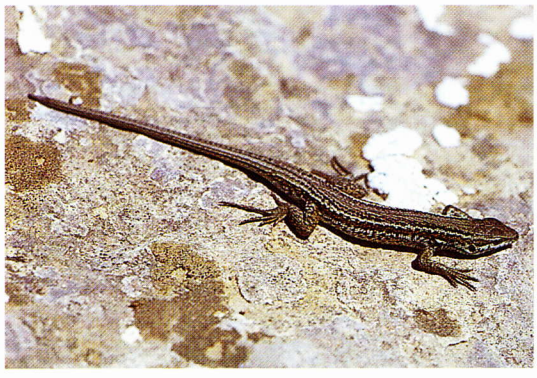
 B

C 

 D

E 

 F

G 

 H