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THE IRAQI LACERTA / ITS TAXONOMY, GEOGRAPHICAL DISTRIBUTION AND NATURAL HISTORY REMARKS

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(анн. о з, рез. араб.)

ABSTRACT

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ABSTRACT

The present work reports on *Lacerta viridis strigata* Eichwald and *L. princeps* Blanf., from Iraq along with detailed notes on their natural history, coloration as well as their taxonomy. Characters of taxonomic importance are pointed out and a key to the available species of the Iraqi *Lacerta* is provided. Important evolutionary tendencies of certain taxonomic features are pointed out with some evolutionary notes related to the subject.

The publication of Hass and Werner (1969) is critically discussed in relation to the present work.

INTRODUCTION

The field of herpetology is one of the zoological fields that lacks extensive exploration and investigations although it offers a lot of attractive problems particularly those of the lizards. It is true that most of the distinct species are probably known, but studies on their geographical races represent a virgin field. The works of several authors indicate that even in the most variable genera, characters can be used to define races and species (Oliver, 1943; and others). Habits and life history studies are yet other unexplored fields.

The literature concerning the herpetological fauna of Iraq is fragmentary and scattered in different periodicals. The first attempt to compile them in the form of a list was carried out by Allouse (1955). Khalaf (1959) in his book "Reptiles of Iraq with some notes on the Amphibians" included the forms which have been reported from Iraq along with few other species reported from the neighbouring countries into which he injected some doubt as to their occurrence in our country. According to him, family Lacertidae, in Iraq includes 4 genera with 12 species but genus *Lacerta* is not included in his book. Mahdi and Georg (1969) in their list of the vertebrates of Iraq stated that the list includes few species that are likely to occur within the area, with no differentiation between the listed species. Some of the genera mentioned in that list included higher number of species than those reported by Khalaf (op. cit.) such as *Lacerta* and *Acanthodactylus*. Literature cited in that list do not indicate such high number of species and none indicate a report or a record of the genus *Lacerta* from Iraq.

In so far as the author is aware, genus *Lacerta* has not been reported from Iraq. After collection of specimens for the present study was made, a specimen was found in the Natural History Research Center store collected by S. Al-Rabiai from Rawandooz on 27.4.1950 and labelled *Lacerta viridis*. Another specimen no. 233 was without label or date, and, both specimens were kept in sealed glass jars.

The natural history of the Iraqi reptiles is a completely unexplored field except for the brief remarks on a limited number of species (Reed and Marx, 1959). The Natural History Research Center of the University of Baghdad has, therefore, adopted a long term project of surveying the Iraqi fauna and flora by taking into consideration their geographical distribution. During the several trips to the north of Iraq, some specimens of *Lacerta* were seen but none were obtained until the summer of 1975 when the first specimen of this genus was collected.



## MATERIALS AND METHODS

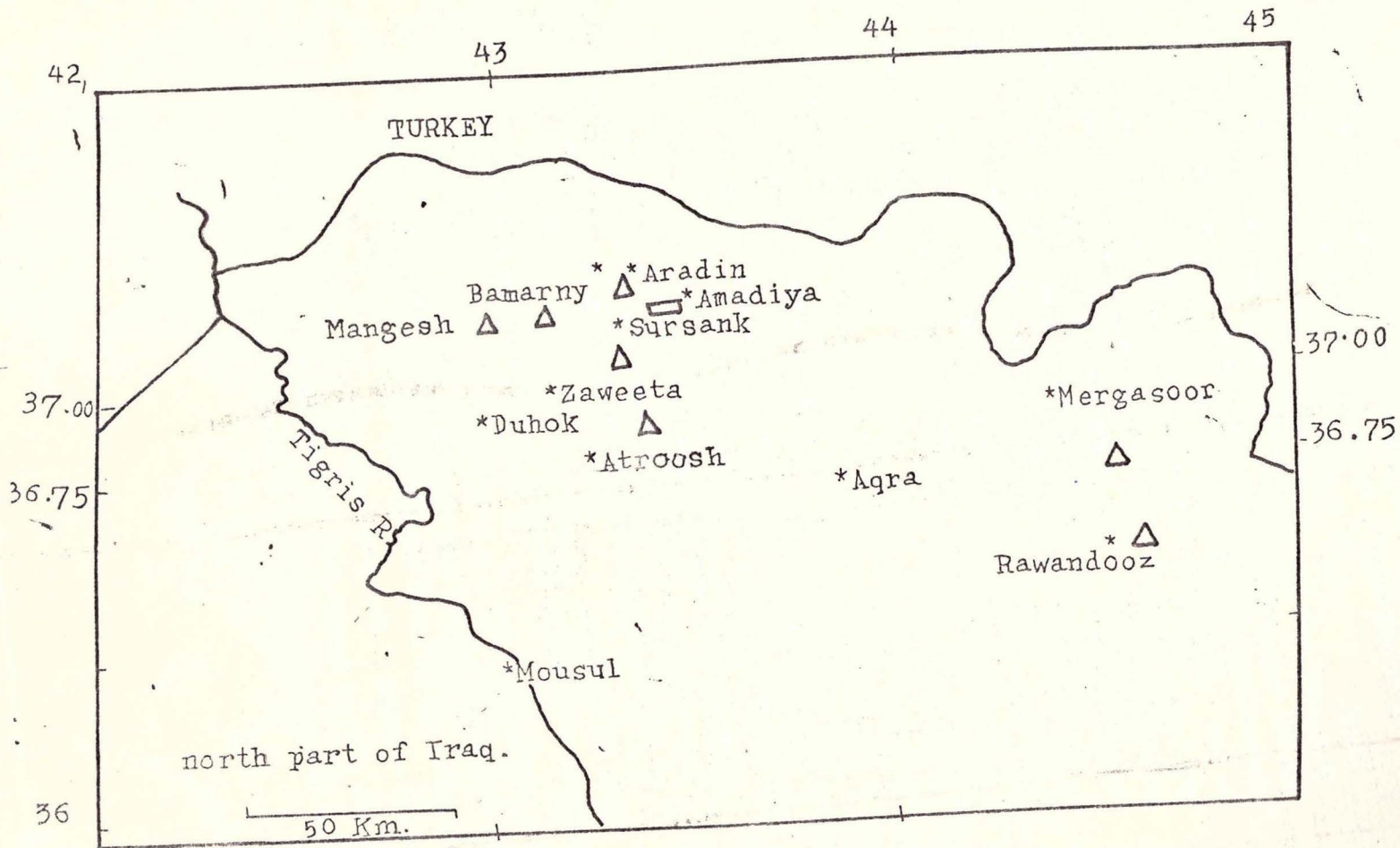
Nine specimens of *Lacerta* were collected from several localities in Duhok District, north of latitude 36.75° and east of longitude 43.00°. The elevations of these localities, as checked by an altimeter, range between 1030—1550 meters altitude (Figs. 1 & 2).

For collecting the specimens, several methods were tried including that reported by Rodger (1939). The quick-pounce method was not effective due to the swiftness of these lizards and their running between shrubs and grasses. The best method of collection proved to be by shooting very close to the spots in which they stop. To avoid their damage, .410-gauge dust-shot cartridges or .22-caliber dust-shot shells were used.

Localities from which the specimens used in this study were collected are shown in Table 1 and Map 1.

Table 1.

Specimen's No. & sex	Locality	Date of collection
1—F	5 km North-east of Sikreen	13.6.1975
2—F	9 km on Zaweeta-Atroosh road on Eastern slope of Shekh You- sif mountain.	14.6.1975
3—M	Do	Do
4—M	Do	Do
5—M	Do	Do
6—F	Do	Do
7—F	Aradin, Western slope of Mt. Metena.	15.6.1975
8—F	Berray-Kur	16.6.1975
9—M	Deyhoka, on Western slope of Mt. Garrah.	16.6.1975.



Δ-Localities of *L. viridis strigata*

◻-Localities of *L. princeps*

Map --I-- The geographic distribution of *Lacerta* species.

The 1st specimen was collected from a hill-side, populated with grasses, shrubs of oak (*Quercus brantii*) and wild cherry shrub (*Prunus microcarpa*) locally known as balalok. Specimens number 2—8, were collected from areas close to water or mud and heavily populated with wild mint (*Mentha longifolia*). The last specimen was collected after it crossed a water ditch, and, costed the author a dust-shot in his arm.

Additional localities where the presence of other specimens has been ascertained include the followings:

1. On the road to Mergasoor from Rawandooz, about 6 km from the junction. The area is heavily populated with wild mint close to an irrigation canal which was inspected on 26.8.1973.
2. Few specimens were seen on the side of the road from Aradin to Bamarni, in a heavily populated area with wild mint on 23.6.1973.
3. One specimen was seen on the road to Mangesh on 14.6.1975.
4. Few specimens were seen on a hill-side of Kintara Gorge (Zaweeta) on 3.7.1976.
5. Few specimens were seen among shrubs of mint covering a narrow water canal in Goont-Key, 2 km Northeast of Sikreen on 3.7.1976.

The sex of the collected specimens was determined by dissection since the copulatory organs are not easily recognizable, particularly in small specimen, and, sexual dimorphism is not evident. Measurement of the specimens and/or their parts was made with a pair of needle-nosed calipers and a scale calibrated to mm. Morphometric and meristic data was gathered by examining each specimen under a binocular microscope. The drawings were executed by the aid of a Camera Lucida. The terminology used in this work is in accordance with those of Nikol'skii (1963); Boulenger (1920); and Smith (1946).

Snout-vent length is measured from the tip of the snout to the anterior margin of the anus. Tail length is measured from the anterior anal margin

to its tip. Regenerated tails are not included in measurements. Head-length is measured from the tip of the snout to the posterior margin of the ear opening and head width is taken at the temporal level. Limbs are measured from their insertion to the tip of the longest digit excluding the claw. Palpebrals and postgenial refer to the scales covering the eyelids and to the posterior one or more scales of the chinshield series respectively. Drawings were executed with aid of a Camera Lucida.

### OBSERVATIONS

#### A. Natural History Remarks:

This is the first report about the genus *Lacerta* from Iraq and all the information concerning its mode of life, daily activity, food, reproduction and sexual dimorphism reported here are those observed by the author himself.

These lizards are diurnals and none were collected during the night, late afternoon or early mornings. During these periods, they remain inactive in their holes, cracks, under fallen dry leaves or between the shrubs. They are usually found in association with wild mint and/or shrubs of oak, in mud, damp area or close to water which they use as hiding or retreat places. Their activity starts at about 10 in the morning and they retreat between 12—3 p.m., and, then gradually resuming little activity from about 4 till 5 p.m. This is presumably a thermally correlated activity. All specimens were collected on an elevation not less than 1000 meter above the sea level. In their movements they are extremely cautious and fast runners. They were never seen in flat, bare land or rocky surfaces or inside dense forest, but some were seen on the outskirts of forests and the timberline. Mating probably was going on during the periods of collection as evidenced by some chasing and the ripened gonads in most of the specimens that were collected. However,



sexual dimorphism was not translated into their externally distinguished structures or colors. Hemipenes are recognizable on dissection. These are a pair of inverted sacs between the proximal muscles of the tail and they open into the posterior dorsal wall of the cloacal chamber. A retractor tendon serves to evert the organ.

Feeding mostly takes place during the morning hours. Their food consists mainly of insects and larvae as was seen on examination of their stomach contents. Thus the two species concerned are chiefly entomophagus, and feed particularly on grasshoppers, crickets and insect larvae. Mint leaves were not found in any of their stomach so examined; however seeds of local shrub (*Prunus microcarpa*) were usually swallowed and crushed. Accidentally, dirt is also swallowed with food while grabbing an insect. A short metal wire was found in the stomach of a single specimen.

Regeneration is a well-known faculty of *Lacerta* tails. Most of the specimens collected have regenerated tails which differ in color and squamation from the originals. Regenerated tails in most of the collected specimens are much shorter than the original tails, which may indicate that regeneration is a relatively slow process in these lizards, unlike geckos where it is quicker.

External parasites were found in some specimens especially on the eyelids, the tympanic membrane, inserted between the ventral plates or around the cloacal opening. These were ticks (*Haemophysalis sulcata*). Internal parasites include certain unidentified nematodes.

#### B. Coloration:

Specimens could be divided into the following two groups according to their color pattern.



## The Iraqi *Lacerta*

Group I. This group includes specimens number 1—7 (Table 1). Color pattern in these specimens is correlated with the length of the lizard; thus 4 different patterns are recognizable. In specimen number 1 (a young female), 3 dorsal light streaks, one vertebral and one on each side of it, are present. A lateral white band, constricts and expands along its course, extending directly above the insertions of the limbs, and, proceeds forward to the upper labials through the tympanum and posteriorly continues on the sides of the tail. Few white spots (3—4) are found on the posterior surface of the femur. In specimen number 2 (a larger female), the 3 streaks have almost disappeared, while the lateral white band regressed posteriorwise leaving its remnant at the level of the leg insertion and extending backwards to the tail. The 3 posterior spots on the femur are still present. The back and the head are spotted with black dots irregularly scattered. In still larger specimens like number 3, only the spots on the posterior surface of the femur are left; and finally in larger specimens such as number 5 even these spots are absent. A fully grown specimen has the head color as a marbled or vermiculated with black and with bright mint-green body color being spotted irregularly sprinkled on the back. The dorsolateral surface of the tail in the 1st to 13th rings has two series of dots, the next 7 rings with a median single dot. From this region, the green color of the tail changes into brownish green and the terminal ring has a double dot in the center. The color of the tail gradually changes into dirty brown to reddish yellow. Ventral surface of the head is greenish yellow and that of the body and the tail is yellowish creamy.

The above observations suggest that the markings disappear as the size of the individual increases. Thus the dorsal streaks disappear first and leave the green back speckled with black dots, then the lateral white band regresses backwards, and, finally the spots of the femur are the last to vanish.

Group II. The general color of these specimens i.e. 8 & 9 (Table 1) is bright mintgreen with black spots on the back and the sides of the neck. The sides of the head especially the labials are tinted with faint blue. Specimen number 9 (a large male), shows 3 round bluish green ocelli bounded with black, posterior to the insertion of the forelimb. Posterior to this region, the ocelli are more or less arranged in 3 series on each side extending backwards. Specimen number 8 (a young female), shows 2 ocelli behind each shoulder only. Difference in number of such ocelli might thus be speculated as being the result of sex or age.

C. Head shields and other morphological characters:

As stated in the preceding section in connection with the color pattern, the specimens collected can be divided into 2 groups.

Group I. Plate I, Fig. 3.

The head shields are normal and include the followings. The occipital is a small shield, triangular or rounded, it is narrower than the interparietal which is rhombic in shape. The fronto-parietals, joined in the midline, are in contact posteromedially with the interparietal and posterolaterally with the parietal. The posterolateral borders of the frontoparietals are concaved. The frontoparietal contacts the 4th and the 3rd supraoculars. The parietal of each side contacts laterally the 2 upper temporals, anterolaterally the 4th supraocular and anteromedially the frontoparietal. The frontal is rounded anteriorly (convex) slightly constricted at the middle, and projecting medioposteriorly. Its general shape is hexagonal; laterally in contact with the 3rd and the 2nd

supraoculars. The 1st supraocular is not in contact with the frontal because it is intercalated between the 1st superciliary laterally, and, the 2nd supraocular and the prefrontal medially. There are 2 loreals; the 1st is in contact with the prefrontal and frontonasal while the 2nd is in contact with the prefrontal and the 1st supraocular. The posterior loreal is usually divided; its length is twice that of the 1st. The prefrontal, anteriorly, contacts the frontonasal which is in contact laterally with upper postnasal, and anteriorly the supranasal of each side. The length of the frontal equals the distance from its anterior border to a point in front of posterior middorsal border of the rostral. The length of the frontal is little more than  $3/4$  that of the parietal. Labials counted to the angle of the mouth (rictus oris), are 6 on each side of both the jaws.

Nostril is pierced between 5 shields (rostral, 1st labial and 3 nasals). Scales of the nape are granular, those on the back much longer. Scales on the back are subimbricate, rhomboidal and poorly keeled, equal on back and sides. Scales on upper surface of tibia are much smaller than the dorsals, very feebly keeled to smooth. Digits are compressed and subdigital lamellae of the 4th toe are paired except the terminal one. Tympanic shield is always present as curved elongated narrow scale, situated on the dorsolateral side of the ear opening. It is separated from the 2nd temporal shield by one posterior, 2 middle and 3 anterior scales. Along the anterior side of this shield, there are 5 scales (Plate I, Fig. 5). The masseteric is not distinguishable.

The occipital width equals or is slightly narrower than that of the interparietal, the length of which is twice that of the occipital. The occipital usually has no groove, but if it has one, it extends transversally.



The subocular (5th upper labial) is wider above than beneath; it is elongated posterodorsally extending a short distance above the 6th upper labial. A deep groove initiates from a point at the level of the upper surface of the 4th upper labial and extends diagonally, posteroventrally, half the length of the shield (Plate I, Fig. 8.).

The number of the chinshields is 4 on each side. The 1st, 2 are small and joined along the midline, the 3rd of both sides are joined along their 2/3 length while the posterior 3rd and the 4th shield are separated by the gular scales. The 4th shield is the longest (Fig. 10). The ventral plates are in 8 longitudinal series, the laterals being the smallest and the 2nd row from the median has the largest plates. The number of granules intercalated between the supraoculars and the superciliaries ranges between 5—11. The number of the superciliaries in both groups is 5—6 and rarely 7; the 1st is the longest in both groups and its suture with the 2nd is not oblique. The preanal plate is large and surrounded by 2 semicircles of small plates; the inner one consists of 6 scales. The tail is cylindrical tapering gradually, its dorsal scales have straight and strong keels, less on the laterals and least on the ventrals.

#### Group II. Plate I. Fig. 4.

All of the head shields mentioned in Group I are represented in this Group also. Their characteristics include the followings. The occipital is much wider than the interparietal, its width is twice the latter one; it is usually grooved longitudinally, unlike that in Group I, which if grooved, the groove is transverse in extension. This shield is triangular while it is triangular or rounded in Group I. The length of the occipital equals or is longer than the interparietal. The interparietal is rhombic

## The Iraqi *Lacerta*

in shape. The subocular (Plate I, Fig. 9) is much wider above than beneath. The shield is elongated in anterior-posterior axis. It is also elongated anterodorsally, having a groove starting from a point above the level of the 4th upper labial and extending diagonally the full length of the shield. Posteriorly, the height of the shield is twice as that of the 6th upper labial. A small shield is intercalated posteriorly below and between the subocular and the 6th upper labial, it is considered as a part of the subocular. The frontoparietal of each side is deeply grooved transversally at the level of the anterior border of the parietal. The frontal is hexagonal in shape, projecting anteriorly in the midline to a short distance, and projects more posteriorly; having parallel lateral sides. This flat shield is grooved longitudinally (Plate I, Fig. 4) along its median region. The length of the frontal equals the distance from its anterior border to posterior mid-dorsal border of the rostral; thus having a relative length greater than that in Group I. The length of the frontal equals  $\frac{3}{4}$  of the parietal's. The parietal is another shield grooved in this Group; its groove extends longitudinally about  $\frac{3}{4}$  its length, starting from a point next to the lateral termination of the transverse groove of the frontoparietal. The number of the loreals is also two in this Group, the 2nd is twice the length of the 1st and it is not divided. The upper temporals are two in number, the 1st is longer. These shields are in contact with the lateral surface of the parietal. The 1st contacts the 4th supraocular as in Group I. The masseteric is distinguishable.

The tympanic shield is present at least on one side, it is narrower and shorter than that in Group I. Two scales border its anterior border which may be considered homologous with the 5 scales in Group I. The shield is separated from the 2nd temporal by one posterior and 2

anterior scales. On the otherside, the shield is absent, its place is occupied by 2 large scales separated from the 2nd temporal by one posterior and 2 anterior scales (Plate I, Figs. 6 & 7).

The number of the chinshields in this Group is 5. The first two shields of both sides are joined in the midline, the 3rd are joined along their first 3rd, the rest of the shield and the 4th and 5th are separated by the gular scales. The 4th is the largest shield. The 3rd may be grooved giving the indication of a sublial (Plate I, Fig. 11). The last two shields in this Group and the 4th in Group I are called the postgenials (Smith, 1946).

The ventral plates are in 10 rows, the 2nd from the median has the largest plates, the 5th has the smallest. The posterior borders of these plates are straight. Scales of the nape are granular, those of the back are much larger, rhomboidal and subimbricate; those on the sides are smaller and feebly keeled. The subdigital lamellae of the 4th toe are paired except the terminal six scales. The preanal plate and its semi-circles are as in Group I. The number of the intercalated granules between the suboculars and the supercillaries is reduced to 2 or 3. The dorsal scales of the tail are with straight and strong keels, the laterals with oblique keels and the ventrals are keeled.

Other characters of taxonomic importance are listed in Table 2. The characters of specimens 1—7 in Group I, point that they are *Lacerta viridis strigata* Eichwald, (Plate I, Fig. 12) and those of 8—9 in Group II, suggest that these are *Lacerta princeps* Blanf., (Plate I, Fig. 13).



DISCUSSION AND CONCLUSIONS

Genus *Lacerta* is one of the genera on which the attention of many workers has been focused with diversified opinions as to the delimitation of the species and their classification.

The genus is divided by Boulenger (op. cit.) into 6 sections some of which can readily be excluded from consideration, such as the isolated species in section 5 and 6. Section 2 is omitted on the basis of having a single postnasal and being confined to the Canary Islands. Section 3 is omitted on the basis of having a toothless pterygoid. Section 4 may be divided into 2 divisions; one with single postnasal and it is excluded also on this basis; and the other division may be looked upon as consisting of 2 groups both of which have the number of the scales around the middle of the body more than 50, and, thus these groups are also excluded since they are not applicable to our specimens. Section one is then the only one left possessing the characters of the collected specimens. Genus *Lacerta* and *Nucras* are considered the ancestral types from which other genera like *Acanthodactylus* and *Eremias* have evolved by a series of modifications, perhaps orthogenetic, related to size, coloration and lepidosis. Evolution in section one presumably started from *L. agilis* var *exigua* and proceeded to *L. ocellata* with *L. viridis* var *strigata* in between and *L. princeps* as a side branch indirectly derived from *L. v. woonsami* and that this evolutionary process proceeded from East to West in the Mediterranean basin (Boulenger, 1920). The species in this section can be separated into 2 subsections which are:

- A. Those characterised in having the nostril pierced between 3—4, rarely 2, shields; and the rostral not entering the nostril. This section will be excluded from consideration since our specimens possess 5 shields surrounding the nostril and the rostral is one of them. This subsection includes *L. agilis*, *L. parva*, Blgr.

B. Those having the nostril pierced between 5—6, rarely 4, shields and the rostral is one of them. This subsection includes *L. viridis*, Laur, *L. princeps* Blanf., and *L. ocellata*, Daud. The last species is excluded from consideration since its dorsal scales are granular, and possess more than 63 scales around the middle of the body, and, a high number of ventral plates. All of our specimens are characterized in having 5 shields surrounding the nostril. These specimens can be separated into 2 groups on the basis of the number of the ventral plates in longitudinal series. One group has 8 ventral plates and it is assigned to *L. viridis*, while the other possesses 10 ventral plates and, therefore, it belongs to *L. princeps*. *L. viridis* includes 5 forms, the important taxonomic characters of which are shown in the table as below.

Table 3. The major characteristics of the 5 forms of *L. viridis* adopted from Boulenger, 1920.

Nos.	1	2	3	4	5
Forma typica	40—55	6(8)*	None or reduced as series	absent	rarely
var. <i>strigata</i>	38—49	6—8	Do	present	Do
var. <i>major</i>	50—58	8	Do	Do	usually
var. <i>woonsami</i>	38—43	6	Do	Do	not or slightly wider
var. <i>schreiberi</i>	48—58	8	absent or reduced	absent	wider

1. number of scales across middle of body.      2. longitudinal series of ventral plates.  
 3. granules between supraoculars and superciliaries.      4. tympanic shield.  
 5. occipital wider than interparietal.      ( )\*, rare case.

Table 4. Proportions of body regions of the specimens collected and compared with those reported by Boulenger, 1920. Figures of the present study represent the means.

Body regions	1	2	3	4
Head length/head width	1.505	1.5—1.6	1.344	1.50*
Head length/snoutvent length	4.279	3.6—4.5	4.493	4.50
Tail length/snoutvent length	2.179	1.3—2.5	2.341	more than twice in the type
Foot length/head length	1.169	1.0—1.4	1.254	1.25

1. of *L.v. strigata*, collected.      2. from Boulenger of the same.

3. of *L. princeps*, collected.      4. from Boulenger of the same.

\*— in the specimen of the British Museum Natural History.

The number given by Boulenger for *L. princeps* are taken from 2 female specimens, one from near Shiraz, and the other described by Blanford (Boulenger, 1920). It is assumed that these figures would approximate the proportions if the size of the sample was larger.

Some of the characters exhibited by the specimens of Group II which proved to be of taxonomic importance includes the number of the chinshields, the general shape of the subocular, the number of scales across the middle of the body, the tendency of the tympanic shield to disintegrate and form the denticulations in front of the ear opening and, the reduction in the number of granules intercalated between the supraoculars and the superciliaries, and, finally the number of the ventral plates in longitudinal series. Specimens of *L. princeps* reveal some evolutionary trends exhibited by disintegration of the tympanic shield at least on one side. This may represent a step towards the case found in *Acanthodactylus*, *Eremias* and others. The tendency of the 5th upper labial (subocular) to differentiate from the rest of the labials by narrow-



ing inferiorly and widening superiorly. This is more pronounced in *L. princeps* than in *L. v. strigata* specimens. This trend finds its ultimate explanation in the formation of a separate subocular above the upper labials as in the two genera mentioned above. In Plate I, Fig. 9 shows that the subocular has a narrowed base and an intercalated shield is located behind it, although this may be an anomaly yet it may indicate that the formation and the exclusion of the original upper labial is accompanied by a substitution to keep the number of the upper labials constant. Another observation worth a further discussion appears on comparing the depth of the groove of the suboculars in both species which indicates the possibility of forming a subocular by a further deepening of this groove, and, ultimately the breaking of the original shield into an upper and a lower segment. The upper forms the subocular and the lower remains without affecting the number of the labials.

Another character of evolutionary importance exhibited by both groups is the more or less elongated central scales of the eyelid. This may represent a step towards the formation of the enlarged and transparent disc of *Eremias*; with a further step/s, the fusion and transparency of the lower lid is obtained as in *Ophisops*.

The longitudinal grooves in the occipitals, the parietals, and the frontal and the transverse groove of the frontoparietal are constant features in both specimens of *L. princeps* which are collected from widely separated localities. Whether this is a specific character or not, further study is required to solve this problem. Table 1 and the related map show that *L. princeps* has a narrower range of distribution than *L. v. strigata*, although future investigations may widen its territory.

It is believed that *Lacerta's* center of origin is in the South-eastern Europe and the neighbouring parts of Asia (Boulenger, 1920). Further, it is

## The Iraqi *Lacerta*

pertinent to mention here that section 4 of Boulenger includes *L. muralis* var *chalybdae* which has been already reported from Kurdistan and Mesopotamia but was not included in the check list of Mahdi and Georg (op. cit.). The 2 wet preserved specimens found and checked at the Natural History Research Center, Baghdad, turned out to be *L. viridis strigata* and no specimen of *L. princeps* could be located.

The behaviour of the specimens in crossing the water canal mentioned earlier does not seem odd since other lizards are reported to do so such as *Leiolopisma laterale* (Carr, 1940). Ditmars (1955) reported that some lacertids are cannibalistic, and Carr (1940) infers that autophagy occurs in *Eumeces laticeps* and *E. inexpectatus*; but the stomach contents of the specimens examined during the present study show no such action.

### SYNOPSIS OF THE IRAQI SPECIES OF *LACERTA*.

1. Pterygoid toothless, nostril pierced between 3 shields, rostral not entering nostril, ventral plates in 6 longitudinal series ..... *L. muralis chalybdae*  
Pterygoid toothed, nostril pierced between 5 shields ...2.
2. Ventral plates in 8 longitudinal series, occipital width equals to or less than that of the interparietal, number of scales across the middle of the body (48—49), chinshields (4), number of granules between supraoculars and superciliaries 5—11 ..... *L. viridis strigata*  
Ventral plates in 10 longitudinal series, occipital wider than interparietal, number of scales across the middle of the body 35—37, number of chinshields 5, number of granules between supraoculars and superciliaries 2—3 ..... *L. princeps*.

By sheer chance, the author received a letter and a reprint on Lizards and Snakes from Southwest Asia (Haas & Werner, 1969) from Dr. Henry Field, Miami, Florida in September, 1976 when the present manuscript was finally processed through, and, was ready for publication. Mahdi and Georg (1969), could not report the above work in their check-list, and, therefore it escaped the attention of the present author until recently. However, it is interesting to note the salient features of the work by Haas & Werner (1969) in relation to the present study which are pertinent.

1. Taxonomic data on *Lacerta trilineata media* (Lantz and Cyren) based on one male and five juveniles; and on *Lacerta cf. strigata* Eichwald based on one juvenile only; but specimens of both collected from around Rawandooz, are provided. The presence of other *Lacerta* specimens has been ascertained from Rawandooz Aradin, Mangesh and Zeweeta in the present work.
2. The pholidosis of *L. trilineata media* is in almost perfect accord with the diagnosis given for this subspecies by Peters (Haas & Werner, 1969: 342). Therefore, the specimens described in my present work are unrelated to *L. trilineata media*.
3. The single apparently colorless juvenile specimen suggested to be *L. cf. strigata* cannot be identified with certainty (Haas & Werner, 1969), and, thus *L. viridis strigata* reported in here, based on a large number of taxonomic characters (Tables 2 & 4) of 7 adult specimens, is valid.
4. Finally, the present work deals also on certain aspects of ecology and biology of *Lacerta* unlike the work of Haas & Werner (1969) which is purely taxonomic.



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EXPLANATION OF PLATE—I

- Fig. 1. A locality in Zaweeta-Atroosh road where some specimens of *Lacerta viridis strigata* were collected showing the type of their habitat.
- Fig. 2. Gali-Kuntara where some specimens were seen.
- Fig. 3. Head shields of *L. viridis strigata*.
- Fig. 4. Head shields of *L. princeps*.
- Fig. 5. Tympanic shield of *L. viridis strigata* left side.
- Fig. 6. Tympanic shield of *L. princeps* left side.
- Fig. 7. Disintegrated tympanic shield of *L. princeps*, right side.
- Fig. 8. The subocular (5th upper labial) of *L. viridis strigata*.
- Fig. 9. The subocular of *L. princeps*.
- Fig. 10. Chinshields of *L. viridis strigata*.
- Fig. 11. Chinshields of *L. princeps*.

KEY TO LETTERINGS

F, frontal; FN, frontonasal; FP, frontoparietal; IP, interparietal; O, occipital; P, parietal; PF, prefrontal; R, rostral; SN, supranasal; SO, supraocular; UT; upper temporal.

Plate I

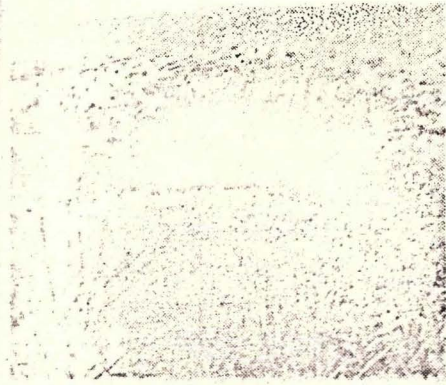


Fig. 1.

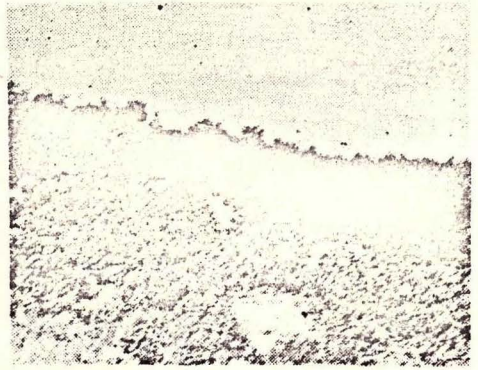
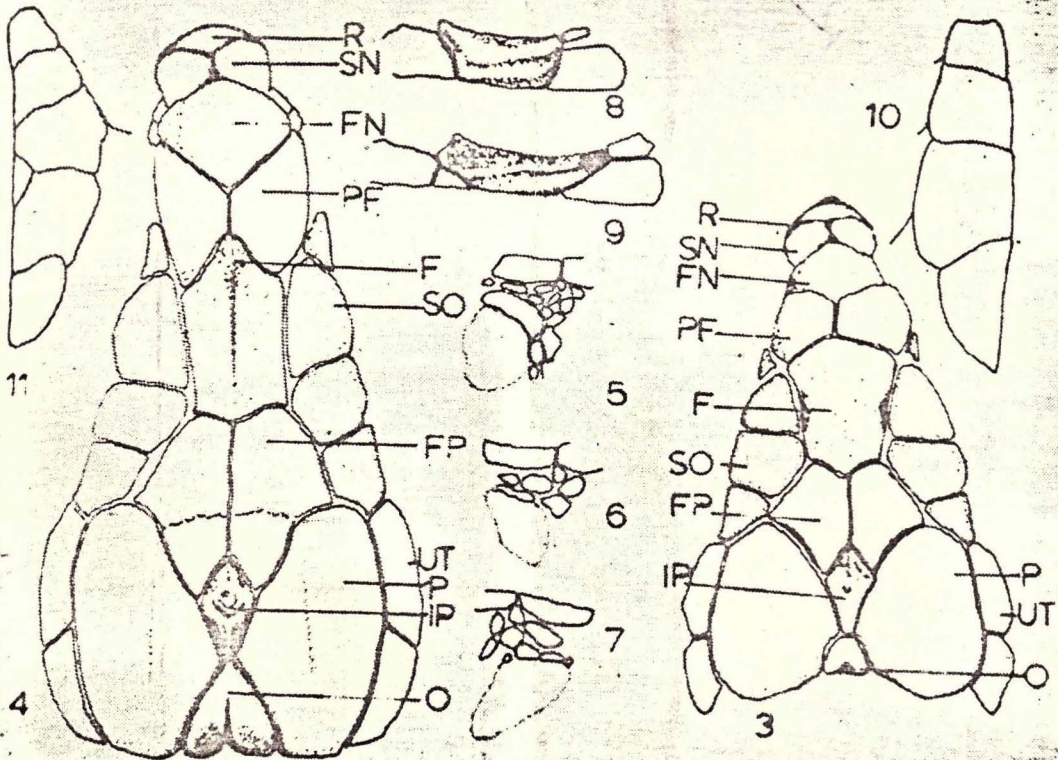


Fig. 2.





## الخلاصة

يتضمن البحث دراسة نوعين للمنجنس *Lacerta* من العراق مع ملاحظات مستفيضة عن التاريخ الطبيعي والوانهما اضافة الى تصنيفهما . كما وقد وضحت الصفات التصنيفية المهمة وزود مفتاح تصنيفي للنوعين المدروسين ونوع آخر سبق تسجيله من العراق . كذلك فقد وضحت الميول التطورية المهمة لبعض الصفات التصنيفية اضافة الى بعض التكهنات التطورية ذات العلاقة بالموضوع .

ويتطرق البحث الى مناقشة بحث هاس و ورنر (١٩٦٩) مع بيان علاقته بالموضوع الحالي .