

DISCUSSION

Although both long and short leaps were characteristic of all species studied, the length of the jump of the toads was the most uniform. The spring peeper progressed with long jumps, with occasional short ones interspersed in the series (Chart 1); the chorusfrog progressed with short jumps, with occasional long ones interspersed in the series (Chart 4).

The shape of the curve for each species was determined by averaging the jump lengths in groups of ten. In the spring peeper and the cricketfrog the average length of jump became progressively less, a situation presumably correlated with fatigue (Charts 2 and 3). The spring peeper, after a rest period of five minutes, jumped nearly as strongly in the second series as it did in the first. In the toads there was only a slight decrease in the average length of jump in the series of 30. This may have been due to the fact that they were utilizing their normal mode of progression in their normal habitat (Chart 5). The chorusfrog showed no decrease in the average length of jump in the series of 30 (Chart 4). This was perhaps correlated with its great propensity for hiding in the grass and consequently obtaining short rests.

SUMMARY

In six species of salientians it was found that size is not correlated with the actual dis-

tance covered by jumping but, to a certain extent, is correlated inversely with the relative length of jump.

Jumping ability is correlated with both the relative length of the hind legs and the habitat. The most aquatic species have moderately long legs and moderate jumping ability; the semi-aquatic ones have the longest legs and the greatest jumping ability; the terrestrial species has the shortest legs and the least jumping ability; the arboreal species has moderately long legs, a short actual jump, but a high relative length of jump.

In four species tested it was found that the endurance factor in jumping varied considerably. There was considerable variation in the distance covered in the individual leaps of a series, but the terrestrial species was the most consistent. During short rest periods two species of frogs regained their former jumping ability almost completely.

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Two Collections of Reptiles from Iraq, with Descriptions of Two New Forms

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MY colleagues, Professor F. S. Bodenheimer and Prof. O. Theodor, have kindly presented to me two collections of reptiles from Iraq. Prof. Bodenheimer's material was collected in 1943 in the vicinity of Mossul, at Addaye, 40 km. to the west, and Dr. Theodor's collection, May to July 1928, comes from Baghdad. I have had the opportunity to discuss the problems presented in identifying the specimens in these collections, with my col-

league, Mr. Karl P. Schmidt, on the occasion of a visit to the Chicago Natural History Museum, and wish to express my thanks to him and to the two collectors. The collectors could not provide me with exact data for their specimens. As the collection is—*par force majeure*—not accessible to me, some of the data are incomplete. The material in question, in the Hebrew University collection, includes the following species.

Stenodactylus grandiceps, sp. nov.

TYPE.—An adult female from Addaye, 40 km. west of Mossul, collected by F. S. Bodenheimer.

DIAGNOSIS.—A *Stenodactylus* with dorsal scales keeled, a relatively large and broad head, and a relatively short tail.

DESCRIPTION OF TYPE.—Habitus (compared with *Stenodactylus sthenodactylus*) stout, with limbs and tail relatively short; tail swollen at base, then gradually tapering; head heart-shaped, with blunt snout, sharply set off from neck, with swollen temporal region; head in profile slightly convex without a bulge in the ocular region; nostrils close together; rostral cleft half its height; nostril between rostral, first labial, and three nasals; inner nasals broadly in contact; upper labials 10, lower labials 9; no postmentals; head scales rugose, larger than those of the back, 25 in a transverse series at the posterior angles of the eyes; dorsal scales subimbricate and keeled; gular scales granular; three enlarged conical tubercles on each side of the root of the tail forming an uninterrupted oblique series; scales of upper sides of limbs strongly keeled; no preanal or femoral pores; irregular white spots on forehead and back and on dorsal side of limbs; whitish beneath. Measurements of type: snout to vent 57 mm.; tail 31; head to posterior border of tympanum 15; width of head 12.5.

COMPARISONS.—The measurements of a specimen of *Stenodactylus sthenodactylus* in our collection (No. 1557) are: snout to vent 52.5 mm., tail 38, length of head 14, width of head 11. There is always a small scale behind the rostral and between the nasals in *S. sthenodactylus*, and the upper labials are 11; also the eyes form a considerable bulge in the profile of the head, contrasting with the smooth curve of *S. grandiceps*. In *S. sthenodactylus* the nostrils are more widely separated; the dorsal scales are smooth, and the keels of the scales on the upper sides of the limbs are less sharply raised.

NOTES ON PARATYPES.—The male paratype in our collection has no preanal or femoral pores; the three tubercles at the base of the tail are more prominent than in the female. The measurements and other data for this specimen and for four specimens from Rutba

in the Chicago Natural History Museum (Nos. 19676–19679, recorded by Schmidt (1939) as *Stenodactylus sthenodactylus*) are as follows:

	Hebr. Univ. 1506♂	CNHM 19679♂	CNHM 19676♂	CNHM 19678♀	CNHM 19677♀
Total L.	90.5	83.0	64.0	82.7	85.0
Tail L.	38.0	31.0	23.5	31.0	31.0
W. head	11.0	11.7	9.7	11.5	12.0
L. head	14.0	15.0	11.5	14.3	14.3

Gymnodactylus scaber Heyden. Ten specimens from Baghdad.

Hemidactylus persicus Anderson. Three specimens from Baghdad, one from Addaye. This species has been recorded from Iraq by Procter (1921). The Addaye specimen differs somewhat from the ones from Baghdad, which agree with Boulenger's description. The rostral is not fused with the first labials, and the number of upper labials is 13, as compared with 10–11, lower labials 10 as compared with 9; 9 instead of 8 preanal pores.

Hemidactylus flaviviridis Rueppell. One from Baghdad; one from Addaye.

Phyllodactylus eliasae Werner. Seven from Baghdad.

Agama ruderala Olivier. Two males from Addaye.

Acanthodactylus grandis Boulenger. One from Addaye. Snout to vent 101 mm., tail 160. The subocular borders the mouth between the 4th and 5th supralabials.

Acanthodactylus tristrami orientalis Angel. Two males and one female from Addaye. All have 48 or 49 scales around the middle of the body.

Ophiops elegans persicus Boulenger. Four from Addaye. These specimens have the collar well developed and free, and 31 to 36 scales around the body.

Apathya cappadocica Werner. A single male from Amadiyeh, Iraqui-Turkish border. The color pattern agrees with *A. c. urmiana* (Lantz and Suchow, 1934), whereas other characters point rather to *A. c. wolteri* (Bird, 1936). Its measurements are snout to vent 68 mm., tail 152 mm. Occipital much broader than parietal, but slightly shorter; supraoculars in order of size 1-4-3-2; first supraocular excluded from contact with the frontal; superciliaries 6-7, superciliary granules 16-17; semitrans-

parent plates in eyelid 7; 5 upper labials anterior to subocular; lower labials 7; chin shields 5 pairs, first 3 in contact; no masseteric shield; 2 postnasals, with a minute scale behind the lower one on the right; a small subnasal excluding the rostral from the nostril; 2 supratemporals, first very long and slender, second twice as long as broad, two-thirds longer than first; a small elongate tympanal; 29 gular scales from collar to chin shields; 13 scales in collar; collar crenelated, each scale with an arched border; 64 dorsal scales across middle of body; ventrals in 8 longitudinal and 26 transverse series; femoral pores 22-23; subdigital lamellae under 4th toe 26.

Dorsum with 6 rows of partly fused black spots; the two median series extending from the 2nd supraocular as interrupted and irregular stripes, which disappear at the level of the forelimbs; upper of the lateral pair of stripes originating at the superciliary granules, forming black lines; lower black lines beginning at the upper posterior corner of the subocular; space between the lateral stripes brown on anterior third of body; black spots of the lines forming a mottled reticulum, with three bright blue ocelli on each side of the body; all three pairs of stripes continued as series of black dots on the anterior third of the tail; three lateral longitudinal rows of ventrals with black dots; upper sides of limbs with black reticulation; mid-back brown anteriorly; general ground color, except as noted, faintly bluish gray.

Mabuya aurata septemtaeniata Eichwald. Three from Addaye. In these specimens the four black dorsal lines are more sharply defined than in the one figured by Mertens (1924).

Eumeces schneideri princeps Eichwald. Two from Addaye.

Lytorhynchus diadema mesopotamicus
subsp. nov.

TYPE.—An example, sex unknown, from Addaye, collected by F. S. Bodenheimer.

DIAGNOSIS.—A subspecies differing from other forms of the species in number and length of dorsal transverse blotches.

DESCRIPTION OF TYPE.—Habitus of *Lyto-*

rhynchus d. diadema; rostral broad, not concave above; dorsal scales in 19 rows; ventrals 173; caudals 39; anal divided; upper labials 8-8, lower labials 10-10; a single vertical preocular, in contact with the subocular, which is above the fourth upper labial; 2 postoculars; loreal trapezoid; frontal elongate, longer than its distance from the end of the snout.

A median row of large dark blotches on the back, with two rows of alternating spots on the sides; 31 dorsal blotches on the body and 9 on the tail, each extending over about 5 dorsal scales, separated by interspaces of 2 scales; frontal and nuchal markings as in *L. d. diadema*.

MEASUREMENTS.—Not available (see first paragraph).

COMPARISONS.—The difference between this subspecies and *Lytorhynchus d. kennedyi* Schmidt, from between Homs and Palmyra, Syria, is most evident in the color pattern, since in *L. d. kennedyi* the dorsal blotches are much narrower than the interspaces, the reverse of the arrangement in *L. d. mesopotamicus*. In *L. d. diadema* from Palestine the blotches are more widely spaced, and are thus intermediate between the condition in *kennedyi* and *mesopotamicus*. *Lytorhynchus d. arabicus* is more slender in habitus and has about 50 dorsal blotches on the body. It is proposed, pending further review of the genus, that these four forms be placed as subspecies of *L. diadema*.

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