

The following papers were read :—

1. A Revision of the Lizards of the Genus *Sceloporus*.

By G. A. BOULENGER, F.R.S.

[Received March 29, 1897.]

(Plate XXXIII.)

The discrimination of species in the genus *Sceloporus* is beset with great difficulties. Cope has justly recommended it as "an excellent *pièce de résistance* for those persons who do not believe in the doctrine of derivation of species." The discrepancies observable on comparing the revisions published about the same time by Cope<sup>1</sup>, myself<sup>2</sup>, and Günther<sup>3</sup> show to what extent opinions may differ on the delimitation of species. I have therefore considered it useful to undertake a renewed study of the genus, embracing the whole material in the British Museum, which has been greatly increased since the publication of the second volume of the Catalogue of Lizards, thanks chiefly to the donations of Messrs. Salvin and Godman, Mr. W. Taylor, Dr. A. Dugès, Mr. Van Denburgh, and the collections made by Dr. A. C. Buller in Western Mexico and by Profs. Gilbert and Eigenmann in California.

I have not restricted my work to framing diagnoses, but have drawn up tables of measurements and records of numbers of scales and femoral pores<sup>4</sup> of nearly all the specimens, with the exception of very young ones. These tables, I trust, will prove of more lasting value than systematic conceptions, and be of service to future workers in the same field as well as to those who might wish to test the constancy of the characters on which species have hitherto been established.

Coloration, even the most conspicuous markings, I find generally inconstant as a specific character, and liable more often to deceive than to help in identifying specimens if considered previously to the structural characters. Therefore, whilst paying to coloration the attention which it deserves, I have abstained from introducing any allusion to it in the key preceding the descriptions of the species, all of which are based on structural characters.

<sup>1</sup> Proc. Amer. Philos. Soc. xxii. 1885.

<sup>2</sup> Cat. of Lizards, ii. 1885.

<sup>3</sup> Biol. C.-Amer., Rept., 1890.

<sup>4</sup> These tables read as follows :—

1. Length from snout to vent (in millimetres).
2. Length of shielded part of head (from end of snout to posterior border of interparietal shield).
3. Length of head to ear-opening.
4. Length of tibia.
5. Distance between base of fifth toe and extremity of fourth.
6. Number of scales from occiput to base of tail.
7. Number of scales corresponding to length of shielded part of head.
8. Number of scales round middle of body.
9. Number of femoral pores (right and left).



*Synopsis of the Species.*

I. Lateral scales directed obliquely upwards and backwards, and passing gradually into the dorsals; series of femoral pores usually widely separated, not meeting on the præanal region.

A. Tail cylindrical; hind limb not reaching the eye; head-shields smooth or slightly rugose.

1. The distance between the base of the fifth toe and the extremity of the fourth not exceeding the distance between the end of the snout and the ear; tibia nearly as long as, or a little shorter than, the shielded part of the head; 26-39 scales between the interparietal shield and the base of the tail.

a. None of the enlarged supraoculars in contact with the shields of the crown.

27-37 scales between the interparietal shield and the base of the tail, 5-7 corresponding to the length of the shielded part of the head, forming parallel series on the back ..... 1. *S. torquatus*, Wiegman.

33-39 scales between the interparietal shield and the base of the tail, 8-9 corresponding to the length of the shielded part of the head, forming oblique series converging towards the median line of the back.

2. *S. bulleri*, Blgr.

b. Fourth supraocular in contact with the parietal shields; 26-27 scales between the interparietal shield and the base of the tail, 6-7 corresponding to the length of the shielded part of the head, forming parallel series on the back ..... 3. *S. melanorhinus*, Bocourt.

2. The distance between the base of the fifth toe and the extremity of the fourth not or but slightly exceeding the distance between the end of the snout and the posterior border of the ear; 38-64 feebly keeled scales between the interparietal shield and the base of the tail.

a. Dorsal scales forming parallel longitudinal series.

38-46 scales between the interparietal shield and the base of the tail, 8-11 corresponding to the length of the shielded part of the head.

4. *S. yarrovii*, Cope.

60-64 scales between the interparietal shield and the base of the tail, 15-16 corresponding to the length of the shielded part of the head.

5. *S. ornatus*, Baird.

b. Dorsal scales forming oblique series converging towards the middle line posteriorly, 44-48 between the interparietal shield and the base of the tail, 9-10 corresponding to the length of the shielded part of the head ..... 6. *S. dugesii*, Bocourt.

3. The distance between the base of the fifth toe and the extremity of the fourth equalling or somewhat exceeding the distance between the end of the snout and the posterior border of the ear; dorsal scales strongly keeled, slightly mucronate, 38-47 between the interparietal shield and the base of the tail, 7-10 corresponding to the length of the shielded part of the head; tibia slightly shorter than the shielded part of the head ..... 7. *S. consobrinus*, B. & G.

4. The distance between the base of the fifth toe and the extremity of the fourth exceeding the distance between the end of the snout and the posterior border of the ear.

a. Dorsal scales equal in size.

α. The distance between the base of the fifth toe and the extremity of the fourth equalling the distance between the nostril and the arm; 35 strongly keeled and strongly mucronate scales between the interparietal shield and the base of the tail, 10 corresponding to the length of the shielded part of the head.

8. *S. serrifer*, Cope.



β. The distance between the base of the fifth toe and the extremity of the fourth less than that between the nostril and the arm.

\* Dorsal scales feebly keeled, not or but shortly mucronate, 30-35 between the interparietal shield and the base of the tail, 6-7 corresponding to the length of the shielded part of the head; tibia longer than the shielded part of the head.

9. *S. orcutti*, Stejn.

\*\* Dorsal scales strongly keeled and mucronate, not more than 45 between the interparietal shield and the base of the tail.

† 25-32 scales between the interparietal shield and the base of the tail, 5-7 corresponding to the length of the shielded part of the head.

‡ Tibia not or but little longer than the shielded part of the head.

Dorsal scales moderately or strongly mucronate; femoral pores 2-16 on each side ..... 10. *S. spinosus*, Wieg.

Dorsal scales very strongly mucronate; femoral pores 13-17.

11. *S. acanthinus*, Bocourt.

Dorsal scales strongly mucronate, forming more or less oblique series converging towards the middle line; femoral pores 17-21.

12. *S. asper*, Blgr.

‡‡ Tibia about one-fourth longer than the shielded part of the head; femoral pores 17-22 on each side.

13. *S. zosteromus*, Cope.

†† 32-45 scales between the interparietal shield and the base of the tail, 7-10 corresponding to the length of the shielded part of the head.

Upper head-shields smooth; dorsal scales very strongly mucronate and denticulate; tibia longer than the shielded part of the head; scales on back of thighs large ..... 14. *S. lickii*, Van Denb.

Upper head-shields smooth; dorsal scales moderately or shortly mucronate; tibia as long as or slightly longer than the shielded part of the head.

15. *S. formosus*, Wieg.

Upper head-shields more or less distinctly rugose, rarely smooth; dorsal scales rather strongly mucronate; tibia as long as or longer than the shielded part of the head ..... 16. *S. undulatus*, Daud.

\*\*\* 46-56 scales between the interparietal shield and the base of the tail.

Dorsal scales rather feebly keeled, forming parallel longitudinal series, 47-51 between interparietal shield and base of tail, 9-11 corresponding to the length of the shielded part of the head ..... 17. *S. elongatus*, Stejn.

Dorsal scales strongly keeled, forming parallel longitudinal series, 52-56 between interparietal shield and base of tail, 11-16 corresponding to the length of the shielded part of the head ..... 18. *S. graciosus*, B. & G.

Dorsal scales strongly keeled, forming oblique series converging towards the middle line, 46-50 between interparietal shield and base of tail, 12-15 corresponding to the length of the shielded part of the head.

19. *S. grammicus*, Wieg.

\*\*\*\* 60-83 scales between the interparietal shield and the base of the tail, strongly keeled, forming oblique series converging towards the median line, 12-20 corresponding to the length of the shielded part of the head... 20. *S. microlepidotus*, Wieg.

b. Dorsal scales very unequal in size ... 21. *S. heterolepis*, Blgr.



B. Tail strongly compressed ; head-shields smooth.

22. *S. pyrrhocephalus*, Cope.

C. Tail cylindrical ; hind limb reaching beyond the eye ; head-shields keeled or striated ..... 23. *S. chrysostictus*, Cope.

II. Lateral scales longitudinal or nearly so ; series of femoral pores more or less narrowly separated, often meeting on the præanal region ; head-shields keeled or striated.

Tibia shorter than the shielded part of the head. 24. *S. æneus*, Wieg.

Tibia at least as long as the shielded part of the head.

25. *S. scalaris*, Wieg. •

III. Lateral scales much smaller than, and abruptly differentiated from, the dorsals.

A. Lateral scales squamous, imbricate.

1. 9-16 femoral pores on each side.

46-65 scales between the interparietal shield and the base of the tail, 10-17 corresponding to the length of the shielded part of the head.

26. *S. variabilis*, Wieg.

39-43 scales between the interparietal shield and the base of the tail, 8-9 corresponding to the length of the shielded part of the head.

27. *S. cupreus*, Bocourt.

2. 3-8 femoral pores on each side ; 30-40 scales between the interparietal shield and the base of the tail.

Two canthal scales ; ventral scales smooth ; male without enlarged postanal scales..... 28. *S. siniferus*, Cope.

One canthal scale ; ventral scales obtusely keeled ; male without enlarged postanal scales ..... 29. *S. fulvus*, Bocourt.

One canthal scale ; ventral scales smooth ; male with enlarged postanal scales.

30. *S. squamosus*, Bocourt.

B. Lateral scales minute, granular.

Head-shields keeled or striated ; 40 scales between the interparietal shield and the base of the tail ; 13-14 femoral pores on each side.

31. *S. utiformis*, Cope.

Head-shields smooth ; 82 scales between the interparietal shield and the base of the tail ; 17-25 femoral pores on each side ... 32. *S. couchii*, Baird.

# 1. SCELOPORUS TORQUATUS.

*Sceloporus torquatus*, Wieg. Isis, 1828, p. 369, and Herp. Mex. p. 49, pl. vii. fig. 1 (1834) ; Bocourt, Miss. Sc. Mex., Rept. p. 171, pl. xviii. fig. 9 (1874) ; Cope, Proc. Amer. Philos. Soc. xxii. 1885, pp. 169 & 401 ; Bouleng. Cat. Liz. ii. p. 219 (1885) ; Dugès, La Natureza, (2) i. 1888, p. 113 ; Günth. Biol. C.-Am., Rept. p. 66 (1890).

*Agama torquata*, Green & Peale, Journ. Ac. Philad. vi. 1830, p. 231.

*Tropidolepis torquatus*, Gray, Griff. A. K. ix. Syn. p. 43 (1831), and Zool. Beechey's Voy. p. 95, pl. xxx. fig. 2 (1839) ; Dum. & Bibr. Erp. Gén. iv. p. 301 (1837) ; Gray, Cat. Liz. p. 208 (1845).

*Sceloporus poinsettii*, Baird & Gir. Proc. Ac. Philad. 1852, p. 126, and U.S. Mex. Bound. Surv., Rept. pl. xxix. figs. 1-3 (1859) ; Günth. l. c. p. 65.



*Sceloporus torquatus poinsettii*, Cope, l. c. p. 402.

*Sceloporus torquatus cyanogenys*, Cope, l. c.

*Sceloporus torquatus mucronatus*, Cope, l. c.

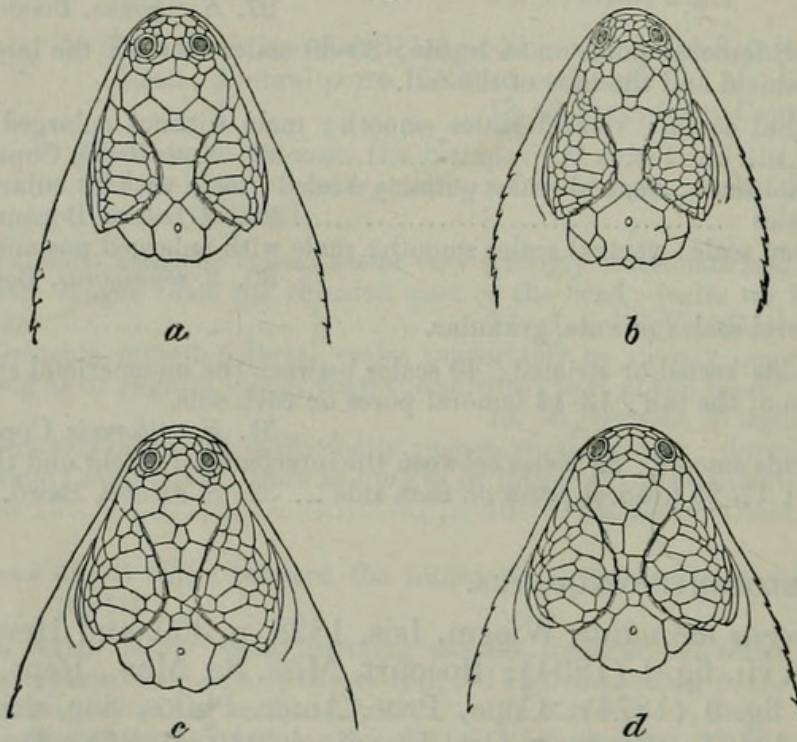
*Sceloporus ferrariperezii*, Cope, l. c. p. 400.

*Sceloporus melanogaster*, Cope, l. c.; Dugès, l. c. p. 114, pl. xii. fig. 7.

*Sceloporus omiltemanus*, Günth. l. c. p. 66, pl. xxxii. fig. A.

Head-shields smooth or nearly so<sup>1</sup>; frontal transversely divided and in contact with the interparietal or separated from it by a small azygous shield or by the frontoparietals, sometimes broken up into several small shields; interparietal as long as broad or slightly longer than broad, much larger than the parietals, which are sometimes divided into two pairs; supraoculars variable, forming a series of four or five transversely enlarged shields bordered internally by a series of moderate-sized scales (fig. 1, *a*), or broken up and forming two or three longitudinal series (fig. 1, *d*); one or two

Fig. 1.



Head-shields of *Sceloporus torquatus*.

series of small scales separating the enlarged supraoculars from the supraciliaries; two canthal scales, both often in contact with the subnarial<sup>2</sup>; anterior border of ear with a strong denticulation formed by three or four pointed scales, which are as large as or a little larger than those preceding.

<sup>1</sup> Dugès observes "En algunos individuos las he visto como puntuadas y casi rugosas."

<sup>2</sup> Such specimens appear to have been described by Cope as with a single canthal. A specimen from Hac. del Bobo has one canthal on one side and two on the other.



Dorsal scales much larger than ventrals, as broad as long or a little broader than long, moderately or strongly keeled, with more or less distinctly denticulated posterior border, simply pointed or more or less strongly mucronate; the keels of the dorsal scales forming parallel longitudinal series; 27 to 37 scales between the interparietal shield and the base of the tail; 5 to 7 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales keeled, directed obliquely upwards and backwards, as large as or a little smaller than the dorsals. Ventral scales small, smooth, entire or bi- or tricuspid. 34 to 44 scales round the middle of the body.

The adpressed hind limb reaches the shoulder, the cervical fold, or the ear; tibia as long or nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals or slightly exceeds the distance between the end of the snout and the ear. 9 to 20 femoral pores on each side.

Caudal scales about as large as dorsals, strongly mucronate. Males with enlarged postanal scales.

The following table shows the variations in the proportions and in the scaling in the specimens examined:—

A. A series of four or five transversely enlarged supraoculars (fig. 1, *a*).

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. El Paso, Texas. Forrer .....	113	22	25	23	26	27	5	36	18-17
♀. Guadalajara, Jalisco. Buller ...	61	14	15	13	16	28	6	39	17-17
♂. Guanajuato. Dugès .....	106	20	22	21	23	29	5	38	16-18
♂. " " .....	97	18	20	18	20	28	5	38	19-17
♀. Plateau of Mexico. Geddes .....	71	15	16	15	18	28	6	40	15-16
♂. Hacienda del Bobo. Hcege .....	89	19	21	18	22	31	6	42	20-20
♂. R. Santiago, Jalisco. Smith... ..	118	22	25	22	24	28	5½	36	17-18
♂. " " " .....	103	20	24	21	24	27	5½	40	20-19
♂. " " " .....	100	20	23	20	22	28	5½	36	15-14
♂. S. Mexico. Godman .....	84	17	20	17	20	29	7	40	16-18
♂. Mexico. Boucard .....	79	16	19	16	20	27	6	38	16-16
♂. " " " .....	70	15	16	15	17	28	7	40	19-19
♂. " De Moore .....	98	19	21	19	21	30	5	40	16-18
♂. —? .....	130	24	28	24	27	27	5	36	18-18

B. Supraoculars intermediate between A and C (fig. 1, *b, c*).

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Duval Co., Texas. Taylor .....	113	22	26	22	24	28	6	38	10-10
♀. Mexico .....	75	15	18	15	19	30	6	42	17-17



C. Enlarged supraoculars broken up, forming two or three longitudinal series (fig. 1, *d*).

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Duval Co., Texas. Taylor .....	117	22	28	23	29	37	7	42	13-14
♂. " " " .....	116	23	27	24	28	34	7	42	13-14
♂. " " " .....	85	16	19	17	19	30	6	40	10-9
♂. Ciudad, Durango. Forrer .....	102	19	22	20	21	29	6	36	11-12
♂. " " " .....	32	17	20	18	20	27	6	37	12-11
♂. " " " .....	67	15	16	14	16	27	6	34	12-12
♂. Jalapa. Hoege .....	61	13	14	13	15	28	6	38	12-14
♂. Omilteme, Guerrero. Smith ...	96	19	22	20	24	30	6	36	14-14
♂. " " " ...	92	18	21	18	22	30	5	35	12-12
♂. " " " ...	78	16	18	15	20	29	6	38	14-13
♂. Mexico .....	89	16	18	16	20	31	6	38	14-13
♂. —? .....	112	22	24	23	24	33	6	40	15-12

Males bronzy, olive, or dark green above, uniform or with yellowish or pale greenish spots, which may be confluent into cross-bars; usually a broad black nuchal collar edged with yellow or pale green behind or both in front and behind; this collar is sometimes interrupted on the back, or reduced to an oblique black band on the shoulder. There is every passage between specimens with and without the collar. Throat and sides of belly cobalt-blue; breast and middle of belly and groin black or white, or black with some white spots; groin black.

Females often more brownish above and yellowish-white beneath, uniform or the throat marked with olive and the sides greenish. In some specimens (Omilteme) the throat and the sides of the belly blue.

The variations of this species, both in scaling and coloration, have given rise to a number of nominal species and subspecies, which I feel unable to accept.

The best-defined form is the *S. poinsettii* of Baird and Girard, in which the supraoculars, often also the frontal, are broken up and the femoral pores fewer (9-15) than is usually the case in the typical *S. torquatus*. But, following Bocourt and Cope, I can only regard it as a variety or subspecies of *S. torquatus*, because specimens occur showing an intermediate form of supraoculars, such as are tabulated in division B of my list, and because I find similar variations occur in *S. spinosus*; and as the number of femoral pores varies in the typical form from 14 to 20 the second character also is not in all cases a distinctive one. Günther accepts *S. poinsettii* as a distinct species, overlooking the intermediate specimens with regard to the supraoculars, and stating the number of femoral pores to be 11 or 12 in *S. poinsettii* and 15 to 20 in *S. torquatus*, notwithstanding that he had access to specimens of the former (from Texas) with as many as 14 pores. The character derived from the coloration he himself admits to pertain only to the specimens from



Durango<sup>1</sup>. Günther's *S. omiltemanus* I would regard as a strict synonym of *S. poinsettii*, but for the blue throat of the female; it is at most a colour variety. Cope's *S. torquatus cyanogenys* and *S. torquatus mucronatus* I also regard as synonyms of the var. *poinsettii*, as I find the degree of mucronation of the dorsal scales and the development of the nuchal collar to be subject to individual variation.

*S. melanogaster*, Cope, certainly, and *S. ferrariperezi*, Cope, probably, cannot be separated from the typical form. I have recently received from Dr. Dugès two specimens from Guanajuato, sent as *S. melanogaster*. One has the complete collar of the typical *S. torquatus*, the other has it broadly interrupted as in the specimen (without locality) previously referred by me to this form. I have carefully compared the two latter specimens and find the agreement absolute, both in coloration and in scaling. I specially mention this on account of Günther's statement that "Boulenger's *Sceloporus melanogaster* is certainly a different form."

All the specimens in division A of my table, and the second in division B should be referred to the *forma typica*, all those in division C, and the first specimen in division B to the var. *poinsettii*.

The definition of the two forms may be given thus:—

*Forma typica*. A series of transversely enlarged supraoculars; interparietal usually in contact with the posterior frontal; femoral pores 14 to 20.

Var. *poinsettii*, B. & G. Supraoculars (and often frontals) more or less broken up; interparietal usually separated from the posterior frontal, if this be distinct; femoral pores 9 to 15.

*Hab.* The range of this species extends over the greater part of Mexico, west of the Isthmus of Tehuantepec and east of Sonora and Sinaloa. The typical form is not known north of Laredo and El Paso in Texas, both localities on the Rio Grande, whilst the var. *poinsettii* penetrates farther into Texas.

## 2. SCELOPORUS BULLERI.

*Sceloporus bulleri*, Bouleng. Proc. Zool. Soc. 1894, p. 729, pl. xlviii. fig. 3.

Head-shields smooth; frontal transversely divided, sometimes in contact with the interparietal, but more usually separated from it by the frontoparietals; interparietal as long as broad or a little longer than broad, much larger than the parietals; a series of four transversely enlarged supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by one or two series of small scales; two canthal scales; four or five pointed scales, a little larger than those in front of them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, a little broader than long, keeled, mucronate and denticulate, the keels converging

<sup>1</sup> It is not present in the type specimen figured by Baird and Girard, but I find indications of it in specimens from Duval Co., Texas.



towards the median line; 33 to 39 scales between the interparietal shield and the base of the tail; 8 or 9 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales keeled, graduating into the dorsals and ventrals, directed obliquely upwards and backwards. Ventral scales small, smooth, bi- or tricuspid. 40 to 44 scales round the middle of the body.

The adpressed hind limb reaches the shoulder or the ear; tibia nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the ear. 14 to 18 femoral pores on each side.

Caudal scales as large as dorsals, strongly mucronate. Males with enlarged postanal scales.

		1.	2.	3.	4.	5.	6.	7.	8.	9.
♂.	Colonia Brizuela. Buller .....	96	21	25	21	25	39	9	44	18-18
♂.	La Cumbre de los Arrastrados. Buller.	96	22	25	21	24	34	8	40	17-18
♂.	" " " ...	79	17	19	16	20	38	8	44	15-15
♂.	" " " ...	91	19	21	18	21	36	8	42	15-15
♂.	" " " ...	70	15	17	15	17	35	8	44	15-15
♂.	" " " ...	69	15	17	14	17	35	8	41	15-15
♂.	Hacienda de Jalisco. Buller ...	95	22	25	21	25	33	8	42	15-14
♂.	" " " ...	74	17	19	16	20	33	8	44	15-14

Dark olive above, with a black uninterrupted nuchal collar, which may be more or less distinctly edged with yellowish or greenish; sides of belly dark-blue, black-edged in both sexes; middle line of belly white; a patch of blue may be present on the throat, the greater part of which is black or dark olive.

*Hab.* This species is only known from the mountains of the State of Jalisco, at 4400 to 8500 feet altitude, where it was discovered by Dr. A. C. Buller.

### 3. *SCELOPORUS MELANORHINUS*.

*Sceloporus melanorhinus*, Bocourt, Journ. de Zool. v. 1876, p. 401; Sumichrast, Bull. Soc. Zool. France, 1880, p. 176; Bouleng. Proc. Zool. Soc. 1894, p. 730.

Snout much flattened. Head-shields large and smooth; frontal transversely divided and separated from the interparietal by the frontoparietals or by a small azygous shield; interparietal a little broader than long, as broad as or broader than the parietals, which are large and broader than long; a series of four large transverse supraoculars, separated from the frontal and from the supraciliaries by one series of small scales, the fourth in contact with the parietal; two canthal scales; ear-opening nearly hidden under the large pointed scales in front of it.

Dorsal scales much larger than ventrals, as broad as long, strongly keeled and mucronate, entire or feebly denticulate,



forming parallel longitudinal series; 26 or 27 scales between the interparietal shield and the base of the tail; 6 or 7 scales correspond to the length of the shielded part of the head. Lateral scales keeled, directed upwards and backwards, graduating into the dorsals and ventrals. Ventral scales smooth, bicuspid. 36 to 40 scales round the middle of the body.

The adpressed hind limb reaches the shoulder or the ear; tibia a little shorter than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout or the nostril and the ear. 18 to 21 femoral pores on each side.

Caudal scales nearly as large as dorsals, strongly mucronate. Males with enlarged postanal scales.

		1.	2.	3.	4.	5.	6.	7.	8.	9.
♂.	S. Domingo de Guzman. Buller...	98	23	25	20	23	26	6	36	20-19
♂.	" " " " ...	66	15	17	13	18	27	7	36	21-21
♀.	" " " " ...	98	23	27	21	23	27	6	40	20-19

Yellowish or greyish olive above; a yellowish, black-edged cross-bar between the eyes; upper surface of snout sometimes blackish; a yellowish band on each side from behind the eye to above the axilla, between which a blackish blotch or bar extends across the scapular region; some less distinct dark cross-bars may follow on the back. Male with the lower surface of the head black-and-white in front, pale blue behind, yellowish green on the sides; the breast and median line of belly salmon-red; the belly pale blue near the median line, yellowish green on the sides. Female yellowish white beneath, with some chevron-shaped brown markings, pointing backwards, on the throat.

*Hab.* Isthmus of Tehuantepec.

Bocourt states that the single male specimen examined by him lacks the enlarged postanal scales. Notwithstanding this disagreement with the specimens before me, I do not entertain any doubt as to the correctness of their identification.

#### 4. SCELOPORUS YARROVII.

*Sceloporus jarrovi*, Cope, in Wheeler's Rep. Explor. W. 100th Mer. v. p. 569, pl. xxiii. fig. 2 (1875), and Proc. Am. Philos. Soc. xxii. 1885, p. 396.

*Sceloporus yarrovii*, Bouleng. Cat. Liz. ii. p. 223 (1885); Günth. Biol. C.-Am., Rept. p. 69 (1890).

*Sceloporus pleurolepis*, Günth. l. c. p. 74, pl. xxxii. fig. B.

Head-shields smooth or slightly rugose; frontal transversely divided, rarely broken up into scales, in contact with the interparietal or separated from it by a small agygous shield, rarely by the frontoparietals; interparietal as long as broad or longer than broad, much larger than the parietals, which may be divided; a



series of four to six transversely enlarged supraoculars, sometimes broken up, bordered inwards by one series of scales and separated from the supraciliaries by two or three; two canthal scales; three or four more or less enlarged scales form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as broad as long or broader than long, obtuse or truncate, not or but very shortly mucronate, feebly keeled, sometimes nearly smooth, forming parallel longitudinal series; 38 to 46 scales between the interparietal shield and the base of the tail, 8 to 11 corresponding to the length of the shielded part of the head. Lateral scales keeled, directed obliquely upwards and backwards, as large as or larger than the dorsals. Ventral scales small, smooth, entire or bicuspid. 46 to 54 scales round the middle of the body.

The adpressed hind limb reaches the axilla, the shoulder, or the cervical fold; tibia nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals or slightly exceeds the distance between the end of the snout and the ear. 8 to 17 femoral pores on each side.

Caudal scales larger than dorsals, more or less strongly keeled, pointed or shortly mucronate, spinose on the sides. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Huahuca Mts., Arizona. Gilbert...	85	18	21	20	20	39	10	50	16-17
♂. " " " ...	69	15	17	16	19	40	10	50	16-15
♂. " " " ...	64	14	15	14	17	38	10	48	16-15
♂. " " " ...	76	16	18	17	19	40	8	48	14-15
♂. Duval Co., Texas. Taylor .....	82	16	18	18	20	42	9	48	13-13
♂. Catorce, S. Luis Potosi. Taylor.	77	16	18	18	19	38	8	46	13-13
♂. " " " ...	74	15	17	17	19	40	10	46	13-13
♂. Ciudad, Durango. Forrer .....	66	15	17	15	18	42	10	50	17-17
♀. N. of Rio de Santiago, Jalisco. Smith.	72	17	19	17	19	39	11	54	16-15
♀. " " " (1)	65	14	15	15	16	43	9	46	11-12
♂. La Cumbre de los Arrastrados, Jalisco. Buller.	74	16	18	18	19	45	11	50	11-12
♀. Ixtlan, Jalisco. Buller.....	63	14	15	14	15	46	10	50	8-9
♂. La Venta, Guadalajara. Buller.	84	17	19	18	18	45	8	48	13-13
♂. " " " ...	83	17	19	17	18	42	9	48	14-14
♂. " " " ...	70	14	15	15	16	41	9	50	13-12
♂. " " " ...	66	14	15	15	15	39	9	54	11-11
♂. " " " ...	66	14	15	15	15	40	10	52	12-11
♂. " " " ...	61	14	15	15	15	41	11	54	11-11
♂. " " " ...	71	14	15	15	14	43	8	46	11-11
♂. " " " ...	67	14	15	14	15	41	8	54	10-11
♂. " " " ...	64	14	15	15	14	40	8	48	10-9
♂. " " " ...	67	13	15	14	14	42	8	48	12-10
♂. " " " ...	65	13	14	14	14	44	8	48	9-8
♂. " " " ...	59	13	14	13	13	43	9	54	11-10
♂. " " " ...	59	13	14	13	13	40	10	50	11-12
♂. " " " ...	57	13	14	13	14	40	9	48	10-10

(1) Type of *S. pleurolepis*, Gthr.



Olive above; a more or less distinct, black, light-edged collar; frequently two light bands on the side of the neck, the upper from the eye and continuous with the anterior border of the collar, the lower commencing at the tip of the snout and passing through the ear; some specimens with the dorsal scales yellowish or pale greenish, edged with black. Males with the throat and the sides of the belly dark blue, edged with black. Females whitish beneath, the throat blue or marbled with grey-blue, often with the sides of the belly blue or greenish blue.

*Hab.* Arizona, Texas, Mexico (Durango, San Luis Potosi, Jalisco). In the State of Jalisco it occurs at altitudes varying between 3484 and 8500 feet.

##### 5. SCELOPORUS ORNATUS.

*Sceloporus ornatus*, Baird, Proc. Ac. Philad. 1858, p. 254; Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 396; Bouleng. Cat. Liz. ii. p. 224 (1885); Günth. Biol. C.-Amer., Rept. p. 72 (1890).

Head-shields smooth; frontal broken up into three or four shields; interparietal as long as broad or a little broader than long, much broader than the parietals; a series of four or five feebly enlarged transverse supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two or three; two canthal scales; four feebly enlarged scales form a denticulation on the anterior border of the ear.

Dorsal scales little larger than ventrals, as broad as long or broader than long, rounded behind, feebly keeled, forming parallel longitudinal series; 60 to 64 scales between the interparietal shield and the base of the tail, 15 or 16 corresponding to the length of the shielded part of the head. Lateral scales feebly keeled, directed upwards and backwards, larger than the dorsals. Ventral scales small, smooth, entire. 60 to 64 scales round the middle of the body.

The adpressed hind limb reaches the ear; tibia nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the ear. 12-17 femoral pores on each side.

Caudal scales much larger than dorsals, feebly keeled, pointed or shortly mucronate, spinose on the sides. Males with enlarged postanal scales.

I have examined only two specimens:—

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Nuevo Leon. Taylor.....	55	12	14	12	14	60	60	16	16-17
♀. Duval Co., Texas. Taylor	46	11	12	10	12	63	64	15	16-17

Olive above, uniform or with darker and lighter spots; a black or blackish collar, edged with greenish white, not extending across



the throat. Male with the throat blue, and the sides of the belly blue, edged with blackish on the inner side. Female whitish beneath, the throat bluish.

*Hab.* North Mexico and Texas. The type is from Coahuila, North Mexico.

#### 6. *SCELOPORUS DUGESI.*

*Sceloporus dugesii*, Bocourt, Miss. Sc. Mex., Rept. p. 188, pl. xviii. fig. 7 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 396; Bouleng. Cat. Liz. ii. p. 224 (1885).

*Sceloporus intermedius*, Dugès, Naturaleza, iv. 1876, p. 29, pl. i. figs. 21-32.

Head-shields smooth; frontal transversely divided, in contact with the interparietal, which is as long as broad and much larger than the parietals; a series of four or five feebly enlarged transverse supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by one series of large scales and one or two of small ones; two canthal scales; four pointed scales, not much larger than those before them, form a denticulation on the anterior border of the ear.

Dorsal scales a little larger than ventrals, broader than long, feebly keeled, obtuse, not denticulated, converging towards the middle line posteriorly; 44-48 scales between the interparietal shield and the base of the tail, 9 or 10 corresponding to the length of the shielded part of the head. Lateral scales a little larger, keeled, pointed, directed upwards and backwards. Ventral scales smooth, entire or bicuspid. 52-55 scales round the middle of the body.

The adpressed hind limb reaches the collar-fold; tibia as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the ear. 12-15 femoral pores on each side.

Caudal scales larger than dorsals, strongly keeled. Males with enlarged postanal scales.

Brownish olive above, with interrupted dark cross-bands or a double series of narrow dark brown spots on the vertebral region; sides with oblique light lines; a broad, dark, light-edged scapular collar; limbs and tail with brown cross-bands. Lower surfaces yellowish in the female, the throat striped with bluish. Male with the throat bluish, with concentric darker lines, and the sides of the belly blue, black-edged internally.

A small species, measuring 65 millim. from snout to vent.

*Hab.* Colima and Michoacan, Mexico.

I have examined but two specimens, from La Noria, Michoacan, presented to the British Museum by Dr. A. Dugès.

#### 7. *SCELOPORUS CONSOBRINUS.*

*Sceloporus consobrinus*, Baird & Gir. in Marcy's Explor. Red River, p. 237, pl. x. figs. 5-12 (1853); Cope, in Hayden's Rep.



U.S. Geol. Surv. Montana, p. 468 (1872); Yarrow, in Wheeler's Rep. Explor. W. 100th Mer. v. p. 574 (1875); Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 395; Bouleng. Cat. Liz. ii. p. 229 (1885); Günth. Biol. C.-Am., Rept. p. 69 (1890); Van Denburgh, Proc. Cal. Ac. (2) v. 1895, p. 113.

*Sceloporus tristichus*, Cope, in Wheeler's Rep. Explor. W. 100th Mer. v. p. 571.

*Sceloporus garmani*, Bouleng. Proc. Zool. Soc. 1882, p. 761, pl. lvi.

Head-shields smooth; frontal transversely divided, in contact with the interparietal or separated from it by a small azygous shield; interparietal as long as broad or a little longer than broad, larger than the parietals; a series of four or five transversely enlarged supraoculars, the widest not measuring more than half the width of the supraocular region, bordered inwards by one series of scales and separated from the supraciliaries by two or three; two canthal scales; three to five pointed scales, longer than those in front of them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad, strongly keeled, slightly mucronate, tricuspid, the keels forming parallel lines; 38-47 scales between the interparietal shield and the base of the tail; 7 to 10 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales graduating into dorsals and ventrals, keeled, pointing upwards and backwards. Ventral scales smooth, bi- or tricuspid. 42-46 scales round the middle of the body.

The adpressed hind limb reaches the axilla or the cervical fold; tibia slightly shorter than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the posterior border of the ear. 12-18 femoral pores on each side.

Caudal scales as large as or a little larger than dorsals, strongly keeled and shortly mucronate. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Dakota. Garman.....	57	12	13	11	14	42	9	42	13-12
♀. " " .....	64	12	13	11	13.5	43	9	46	15-14
♀. " " .....	64	12	13	11	13	41	9	44	12-12

Reddish brown above, with a greyish vertebral band and one or two yellowish lateral bands on each side; dark brown spots between the longitudinal bands; a blackish streak at base of humerus. Lower parts yellowish white, uniform in the female; male with a small blue spot on each side of the throat, and an elongate black-margined blue blotch on each side of the belly, the white interspace between them measuring twice their width.

*Hab.* This species was originally described from the Red River



of Louisiana. It has since been recorded from Montana, Nebraska, Utah, Nevada, Arizona, and New Mexico. In addition to the three specimens from Dakota, tabulated above, the British Museum possesses one from Putla, Mexico.

#### 8. SCELOPORUS SERRIFER.

*Sceloporus serrifer*, Cope, Proc. Ac. Philad. 1866, p. 124, and Proc. Am. Philos. Soc. xxii. 1885, p. 395.

The following is the original description of the species:—"A stout species, near the *S. spinosus*, but differing in its fewer and larger scales, with more serrate margins, and in its coloration. It belongs therefore to the section with large lateral scales and only one row of large supraorbitals. In this species the latter are bounded by a complete series of inner and outer marginals. Scales from nape to rump in 23 cross series, each with a long mucro, and two and three lesser ones on each side of it. Interparietal broader than long; frontal narrow, only transversely divided, posterior portion very small. Internasal longer than broad, elevated, sometimes sharply keeled. Lores deeply grooved. Claws of extended hind limb nearly to ear; femoral pores 9-10. Auricular marginal scales thin, not so large as those just preceding. Median abdominal scales once, gulars twice or thrice emarginate. Tail rather short. Length of end of muzzle to vent, 4 in. 1 l. Colour above greyish or brighter green, with a complete pea-green bordered black collar, which is narrower on the gular region. Throat and sides of male blue, the latter broadly black-bordered behind and medially. A yellow bar across præfrontals, one between orbits and one across occiput, all separated by brown or blackish, the posterior green-bordered behind. Younger specimens have the back brown, cross-banded." Yucatan.

To this description Cope has added a few notes in 1885:—

"Of four adult specimens, three have the collar interrupted, and one has it continuous over the nape. In three young specimens the collar is uninterrupted. In none of the adults are there more than ten femoral pores."

A single female specimen, from Mexico, which I have referred to *S. serrifer*, perhaps belongs to a distinct species, as suspected by Günther. It has 35 scales between the interparietal shield and the base of the tail, 10 corresponding to the length of the shielded part of the head. Tibia as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the nostril and the arm. 10-11 femoral pores. Olive above, brown-spotted; a dark brown nuchal collar, interrupted in the middle.

From snout to vent 72 millim.

#### 9. SCELOPORUS ORCUTTI.

*Sceloporus orcutti*, Stejneger, N. Amer. Faun. no. 7, 1893, p. 181, pl. i. fig. 4.

Head-shields smooth; frontal transversely divided, in contact



with the interparietal or separated from it by the frontoparietals; interparietal as long as broad, a little longer than broad, or a little broader than long, broader than the parietals, which are divided into two; a series of four large transverse supraoculars, bordered inwards by an incomplete series of scales, the last two shields being in contact with the frontoparietals and parietals, and separated from the supraciliaries by one or two series of scales; two canthal scales; three to six long pointed scales on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad or broader than long, feebly keeled, not or but very shortly mucronate, strongly denticulate, the keels forming parallel series or very slightly converging towards the median line; 30 to 35 scales between the interparietal shield and the base of the tail; 6 or 7 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales nearly as large as dorsals and more strongly keeled, directed obliquely upwards and backwards. Ventral scales small, smooth, bi- or tricuspid. 36 to 38 scales round the middle of the body.

The adpressed hind limb reaches the shoulder or the ear; tibia longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth exceeds the distance between the end of the snout and the ear. 11 to 15 femoral pores on each side.

Caudal scales as large as dorsals, strongly mucronate. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Coahuilla Valley, S. Diego Co. Gilbert.	98	19	21	22	25	30	6	36	11-12
♀. " " " ...	95	18	20	20	25	35	7	36	14-15
♂. S. Jacintho, S. Diego Co. Gilbert.	95	19	20	20	23	32	7	37	14-15
♂. " " " ...	92	18	20	22	24	31	7	38	14-14
♂. Arizona. Wright .....	72	15	16	17	19	32	7	36	14-13

Dark bronzy brown above, uniform or the scales pale olive in the centre, or pale brown with dark brown cross-bands, the dark bands broader than the pale interspaces. Lower parts leaden grey in females, pale blue in young males, blackish blue in adult males.

*Hab.* San Diego Co., California. The British Museum has also received a specimen among a collection of Reptiles from Arizona, presented by Dr. W. G. Wright.

10. *SCELOPORUS SPINOSUS*.

*Sceloporus spinosus*, Wieg. Isis, 1828, p. 370, and Herp. Mex. p. 50, pl. vii. fig. 3 (1834); Baird, U.S. Mex. Bound. Surv., Rept. p. 5, pl. xxix. figs. 4-6 (1859); Bocourt, Miss. Sc. Mex., Rept. p. 174, pl. xviii. fig. 2 (1874); Cope, Proc. Amer. Philos. Soc.



xxii. 1885, p. 395; Bouleng. Cat. Liz. ii. p. 226 (1885); Dugès, La Naturelleza, (2) i. 1889, p. 205.

*Tropidolepis spinosus*, Gray, Griff. A. K. ix. Syn. p. 43 (1831); Dum. & Bibr. Erp. Gén. iv. p. 304 (1837); Gray, Cat. Liz. p. 209 (1845).

*Sceloporus horridus*, Wieg. Herp. Mex. p. 50; Bocourt, l. c. p. 178, pl. xviii. fig. 8; Cope, l. c. p. 394.

*Tropidolepis horridus*, Dum. & Bibr. t. c. p. 306; Gray, Cat. p. 209.

*Sceloporus clarkii*, Baird & Gir. Proc. Ac. Philad. 1852, p. 127, and U.S. Mex. Bound. Surv., Rept. p. 5; Yarrow, Wheeler's Rep. Explor. W. 100th Mer. v. p. 575, pl. xxiii. fig. 1 (1875); Stejneger, N. Amer. Faun. no. 3, 1890, p. 110, and no. 7, 1893, p. 178, pl. i. fig. 1.

*Sceloporus magister*, Hallow. Proc. Ac. Philad. 1854, p. 93, and Rep. U.S. Explor. Surv. R. R. x. pt. iv. p. 5 (1859); Stejneger, N. Am. Faun. no. 7, 1893, p. 178, pl. i. fig. 2.

*Sceloporus floridanus*, Baird, Proc. Ac. Philad. 1858, p. 254; Stejneger, l. c. p. 181, pl. i. fig. 6.

*Sceloporus oligoporus*, Cope, Proc. Ac. Philad. 1864, p. 177.

*Sceloporus thayerii* (non B. & G.), Bocourt, l. c. p. 175, pl. xviii. fig. 5.

*Sceloporus spinosus*, part., Günth. Biol. C.-Am., Rept. p. 63 (1890).

*Sceloporus boulengeri*, Stejneger, l. c. p. 180, pl. i. fig. 5.

Head-shields smooth; frontal transversely divided (exceptionally single), usually in contact with the interparietal, sometimes separated from it by the frontoparietals or by a small azygous shield; interparietal as long as broad, a little longer than broad, or a little broader than long, nearly as broad as or broader than the parietals; a series of three to five large, transverse supraoculars, which are rarely broken up into two series as in *S. torquatus* v. *poinsetti*<sup>1</sup>; a complete or incomplete series of scales on the inner side of the enlarged supraoculars, the last or last two of which are sometimes in contact with the frontoparietals or frontoparietals and parietals; one or two series of small scales between the large supraoculars and the supraciliaries; two canthal scales (exceptionally one); three to six pointed scales on the anterior border of the ear, in some specimens not larger than those in front of them, in others larger and sometimes much longer than broad.

Dorsal scales much larger than ventrals, as long as broad, strongly keeled, mucronate, and usually denticulate, the keels forming parallel series or, rarely, slightly converging towards the median line; 25 to 32 scales between the interparietal shield and the base of the tail; 5 to 7 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales graduating into dorsals and ventrals, strongly keeled, directed obliquely upwards and backwards. Ventral scales small, smooth, bi- or tricuspid. 34 to 40 scales round the middle of the body.

<sup>1</sup> This is particularly marked in a specimen from Puebla.



	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Fort Lowell, Arizona. Gilbert...	103	20	23	22	26	30	6	40	12-12
♀. " " " ...	86	17	19	18	22	32	7	40	11-11
♂. Mexico .....	99	18	21	20	24	30	6	38	12-13
♀. California (?) .....	74	14	16	16	20	30	6	38	13-12



D. Femoral pores 11-17; auricular scales usually much longer than broad.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Waco, Texas .....	86	18	20	19	24	27	6	38	14-16
♂. " .....	79	16	18	18	23	27	6	36	14-12
♂. " .....	83	16	18	18	24	29	5	36	16-15
♂. San Antonio, Texas .....	78	16	18	19	26	30	6	36	16-17
♂. Duval Co., Texas. Taylor .....	83	16	18	19	27	28	5	36	13-12
♂. " " " .....	80	16	17	18	25	28	6	38	13-14
♂. " " " .....	73	15	16	17	23	28	6	36	13-11
♂. " " " .....	113	22	24	24	29	30	5	38	14-11
♂. " " " .....	102	20	22	24	29	28	5	38	14-14
♂. " " " .....	102	20	22	24	30	31	5½	36	13-13
♂. " " " .....	77	16	17	18	22	30	6	40	11-11
♂. Fort Lowell, Arizona. Gilbert...	108	21	25	26	29	29	7	40	14-12
♂. " " " .....	93	19	21	22	27	26	6	38	14-15
♂. " " " .....	62	14	15	16	19	25	6	36	12-11
♂. Colorado Bottom. Smiths. Inst.	113	20	23	25	29	30	6	36	13-12
♂. Tampico, Jalisco. Richardson...	96	18	20	21	28	29	5	34	12-13
♂. " " " .....	67	15	16	17	23	28	6	38	13-13

Brown, greyish, or olive above, usually with a more or less distinct light stripe along each side of the back; more or less regular dark brown or blackish bands may be present across the back; these bands may be broken up into spots or so extend as to obscure the ground-colour. Dark bars are usually present across the digits, but may be absent, irrespective of the structural characters or the localities. The type of *S. clarkii*, from Arizona, is described as uniform yellowish green above, and we possess a uniform greenish specimen from Fort Lowell, recently received from the Stanford University through Prof. Gilbert as *S. clarkii*, with which it agrees in its ear-scales; whilst a second specimen from the same locality, received under the same name, and agreeing in the ear-scales, has the dorsal cross-bars of *S. spinosus* and barred toes. *S. magister* is described by Hallowell (from Fort Yuma and Tucson, Arizona) as "straw-colour above, without spots or blotches." Our specimens from Arizona, answering to the definition of *S. magister* given by Stejneger, vary much in coloration and cannot be distinguished in this respect from specimens from Mexico, referred to the typical *S. spinosus*, and Texas, the latter being considered by Stejneger as a distinct species, *S. floridanus*, Baird. This is described by Baird as "greenish yellow, with two broad yellow stripes, five scales apart; back with distinct transverse blackish bars." A black blotch is usually present in front of the arm, and may ascend up the sides to form an incomplete nuchal collar. This is best marked in some specimens from Arizona, Colorado, and Presidio near Mazatlan.

I am unable to reconcile the differences in the coloration of the upper parts with any structural characters. The same may be said of the coloration of the lower parts.



Males are usually distinguished from females by the presence of blue on the throat and on the sides of the belly; but this character should not be exclusively relied upon for distinguishing the sexes, since a female from Presidio has the throat as blue as some males collected at the same time in the same locality; whilst, on the other hand, an adult male specimen of the var. *horridus* from Puertillo de Acatan entirely agrees with normal females in the coloration of the lower surfaces. The intensity of the blue varies much, probably according to seasons. The male of the typical *S. spinosus* is described as with a blue throat striped with darker, the sides of the belly blue, the breast and the middle line of the belly white; a large black blotch in front of the arm: such specimens we possess from Guanajuato, Puebla, and Presidio (*f. typica*) and from Ixtlan (var. *horridus*). In *S. horridus* the blue of the belly may extend on the anterior face of the thigh, as in our specimen from N. of Rio de Santiago, and in one from Mexico referred by me to the var. *clarkii*. The type of *S. clarkii* is described as with "a bluish abdomen, indistinctly black along the middle region; the lower surface of the head is blue, on the middle region surrounded with black." This description might have been penned from one of our specimens from Presidio, near Mazatlan, and agrees well with the male from Fort Lowell which I regard as a typical *S. clarkii*. Hallowell's *S. magister* has "two large bluish-green blotches upon the abdomen, one on each side, and one upon the neck; the rest of the under surface light straw-yellow." Specimens answering to this description I have only seen from Mexico (*f. typica*). Specimens from Arizona, referred to *S. magister*, have the throat blue posteriorly, with a black cross-band, and the sides of the belly of a deep blue edged with black within; groin black. Specimens (not full-grown) from Texas and Tampico have the sides of the belly greenish blue and a small spot of the same colour on each side of the throat.

The systematic treatment of the *Scelopori* here grouped under *S. spinosus* is a subject on which recent authors have shown great divergence of opinion.

In his Synopsis of 1885, Cope attaches undue importance to the number of femoral pores, a character which he regards as "not subject to such variations as to be embarrassing;" and he forthwith makes a bold primary division into species with 2-6 pores and with 10 and more. The *S. horridus* (with 2-6 pores) is therefore placed quite apart from *S. spinosus* (believed to have 10 or more). This shows that the author cannot have counted the pores in a very large number of specimens, for the series in the British Museum alone, which I daresay is far less important in numbers than that to which he had access, contains not only specimens with 7, 8, or 9 pores, which therefore would not fit in either division of the synopsis, but there is even a specimen, from Guanajuato, with 7 pores on one side and 10 on the other. *S. clarkii*, usually accepted as a distinct species, or subspecies, by Cope and other American authors, is not even mentioned in this synopsis.



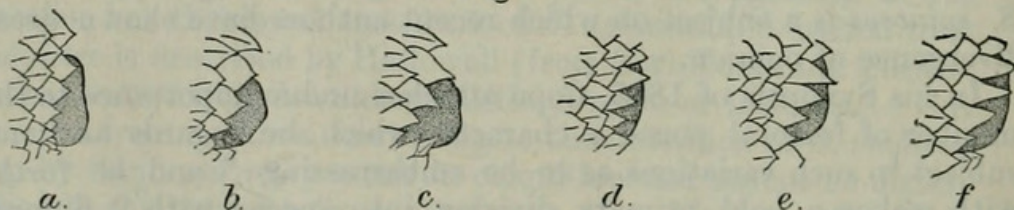
In the same year, I had to deal with the genus *Sceloporus* in the second volume of the 'Catalogue of Lizards,' and, notwithstanding the small material at my command, felt justified in uniting under one species *S. spinosus*, *horridus*, and *clarkii*, which seemed to agree in all respects save the number of femoral pores, viz., 7 to 10 in the first, 2 to 5 in the second, and 12 to 15 in the third; and this character served me in dividing the species into three forms or varieties.

Günther, in 1890, went even further, and refused to accept the varieties on the ground of a "want of agreement between the number of pores and the distribution of the species." This is partly due to his having mixed up two species under his *S. spinosus* (see *S. acanthinus*, p. 497). As a matter of fact, Günther never examined a Mexican specimen of *S. spinosus* with more than 13 pores, and the only two that possess more than 10 come from a locality (Tampico) which is not physically separable from Arizona and Sonora, the home of *S. magister*, to which form they undoubtedly belong.

In 1893, Stejneger discovered differences in the scales in front of the ear by which he proceeded to divide the *S. spinosus* with 7 or more pores into as many as five species, viz., *S. spinosus*, *S. boulengeri*, *S. clarkii*, *S. floridanus*, and *S. magister*. I will now examine the value of these supposed species.

1. *S. boulengeri* is based on specimens from Presidio, near Mazatlan, believed to be distinguished by small, comparatively short and broad auricular scales, and a very broad interparietal. As the British Museum possesses 7 specimens from the same locality and collector, I am in a position to dispose at once of this supposed species by figuring (fig. 2) the ears of two specimens, one of which (*a*) agrees with Stejneger's figure, the other (*b*) approaching the type of *S. spinosus* as figured by Bocourt (*c*), and

Fig. 2.



Auricular scales of *Sceloporus spinosus*.

by giving the following measurements of the interparietal in four specimens each of *S. spinosus*, *S. boulengeri*, and *S. clarkii*; the first figure indicates the length, the second the width:—

<i>S. spinosus</i> . . . . .	5	:	4,	5 : 5,	4 : 4½,	4 : 4.
<i>S. boulengeri</i> . . . .	5	:	5,	5 : 5,	4 : 5,	4½ : 5.
<i>S. clarkii</i> . . . . .	4½	:	4½,	4 : 4½,	4 : 4,	4 : 4.

There is no difference whatever, in structure or coloration, by which *S. boulengeri* may be distinguished from *S. spinosus*.



2. *S. clarkii* differs from *S. spinosus* in having a greater number of femoral pores (11 to 13 instead of 7 to 10). But as this is the only difference I can perceive, and as I have no doubt an examination of a larger material would reveal greater variation than that with which we are at present acquainted, resulting in an overlapping of the two numbers, I consider this species merely as a form of *S. spinosus*, which "seems confined to South-eastern Arizona, whence it is found southward into Mexico for an unknown distance, probably confined to the western slope of the Sierra Madre."

3. *S. magister* and *S. floridanus* ("or *S. spinosus floridanus* if the number of femoral pores should be found to intergrade") are both distinguished by longer ear-scales, as may be seen from the figures annexed to Stejneger's paper, and the pores number 11 to 16. The character of the auricular scales is, however, much more variable than one would infer on the authority of Stejneger. On comparing his figures with mine (p. 494, *d, e, f*) and with Bocourt's (pl. xviii. fig. 5), it will be seen that such a character is too inconstant for specific distinction<sup>1</sup>, in the absence of any others, which I am unable to find and which Stejneger has, so far, not given. I have carefully compared specimens from Texas (*S. floridanus*) with some from Arizona (*S. magister*), and I am quite unable to separate them. There is absolute identity between specimens from Waco and from Tampico. I believe geographical considerations have influenced Stejneger in separating the western from the eastern form,—*S. magister* being found, according to him, in S.W. Utah, the Grand Cañon of Colorado, S. Nevada, the desert region of California, and Arizona<sup>2</sup>; *S. floridanus* from Pensacola to Southern Texas. But I would not allow such considerations to weigh in the distinction of species or even varieties, as they must vitiate any ultimate deductions in the study of geographical distribution. We know that gaps may occur in the distribution of a species. To mention one example taken from the European fauna, the Reptiles of which are certainly better known than those of any part of America, I will allude to the common Adder, *Vipera berus*, which disappears from the plains of France south of the Loire, where it becomes replaced, as well as in the Pyrenees, by *V. aspis*, and reappears again in the hilly districts of North-western Spain and North Portugal.

On the whole, however, the ear-scales of *S. floridanus* (fig. 2, *e*) and *S. magister* (fig. 2, *f*), which I unite as one form, are more elongate than in *S. clarkii* and *S. spinosus*, though they intergrade in Texan specimens (fig. 2, *d*), and I therefore believe it best to separate *S. magister* as a variety.

The arrangement proposed is the following:—

1. Var. *horridus*, Wieg. Femoral pores 2–6 on each side; auricular scales usually not or but slightly longer than broad.

<sup>1</sup> In *S. undulatus* we meet with a similar amount of variation, and I am unable to avail myself of the character for defining varieties, in spite of repeated efforts to do so.

<sup>2</sup> Has since been recorded from New Mexico.



2. *Forma typica*. Femoral pores 7-10; auricular scales usually not or but slightly longer than broad.

3. Var. *clarkii*, B. & G. Femoral pores 11-13; auricular scales not longer than broad.

4. Var. *magister*, Hallow. Femoral pores 11-17; auricular scales usually much longer than broad.

*Hab.* Mexico west of the Isthmus of Tehuantepec; northwards to Nevada, Utah, Colorado, Texas, and Western Florida.

#### 11. SCELOPORUS ACANTHINUS.

*Sceloporus acanthinus*, Bocourt, Miss. Sc. Mex., Rept. p. 180, pl. xviii. fig. 10, & pl. xix. fig. 4 (1874); Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 396; Bouleng. Cat. Liz. ii. p. 221 (1885); Günth. Biol. C.-Am., Rept. p. 65 (1890).

*Sceloporus spinosus*, part., Günth. l. c. p. 63.

*Sceloporus viviparus* (non Cope), Günth. l. c. p. 64.

Head-shields smooth; frontal transversely divided, rarely single, in contact with the interparietal; latter as long as broad or a little longer than broad, broader than the parietals; a series of four or five large transverse supraoculars, bordered inwards by a complete or incomplete series of scales, the last two plates rarely in contact with the frontoparietals and parietals; one or two series of scales between the large supraoculars and the supraciliaries; two canthal scales; four or five pointed scales, not or but little larger than those before them, form a denticulation in front of the ear.

Dorsal scales much larger than ventrals, as long as broad or longer than broad, strongly keeled and mucronate, denticulate, the keels forming parallel or slightly oblique series; 26-32 scales between the interparietal shield and the base of the tail; 6 or 7 scales, taken in the middle of the back, correspond to the length of the shielded part of the head (8 in some young, owing to the proportionally larger head). Lateral scales graduating into dorsals and ventrals, strongly keeled, directed obliquely upwards and backwards. Ventral scales small, smooth, bi- or tricuspid; 35-40 scales round the middle of the body.

The adpressed hind limb reaches the collar-fold or the ear; tibia as long as or slightly longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth exceeds the distance between the end of the snout and the posterior border of the ear. 14-16 (exceptionally 13 or 17) femoral pores on each side.

Caudal scales as large as or a little smaller than dorsals, strongly keeled, mucronate, and denticulate like the dorsals. Males with enlarged postanal scales.

I have examined a good number of specimens, which show the following variations in the proportions, the lepidosis, and the number of femoral pores:—



		1.	2.	3.	4.	5.	6.	7.	8.	9.
♂.	Omiteme, Guerrero. Smith (1)	82	17	19	18	22	27	7	36	15-15
♂.	" " " ...	72	15	17	16	21	29	7	40	15-15
♂.	" " " ...	66	14	15	14	19	32	7	36	16-16
♂.	" " " ...	61	13	15	14	17	29	7	35	14-15
♂.	" " " ...	58	13	15	14	18	31	8	36	15-16
♂.	" " " ...	56	12	14	13	17	30	8	36	14-14
♂.	" " " ...	72	14	16	15	19	30	7	36	16-16
♂.	" " " ...	63	13	14	14	18	29	7	38	16-15
♂.	Amula, Guerrero. Smith (2) ...	64	13	15	14	18	30	7	38	14-15
♂.	Jalapa. Hoege .....	71	14	16	14	19	28	6	36	14-15
♂.	S. Mexico. Godman (3) .....	59	13	14	13	18	27	7	38	14-14
♂.	" " " .....	83	17	20	19	23	26	6	36	16-17
♂.	Hac. Rosa de Jericho, Nicaragua. Rothsuh.	73	15	17	16	21	29	6	36	14-14
♂.	Bebedero, Costa Rica. Underwood.	68	14	16	14	20	29	7	36	14-13

(1) The specimens from Omiteme have been referred by Günther to *S. viviparus*.

(2) This specimen has been referred by Günther to *S. spinosus*.

(3) The specimens from S. Mexico have been referred by Günther to *S. torquatus*.

Males green or dark olive above, the dorsal scales often black at the sides; head dark olive above, uniform or with pale green spots; a black collar, continuous or broadly interrupted between the shoulders, and extending across the throat. Lower surface of head and body dark blue, uniform or with the breast and the middle line of the belly yellowish white or pale bluish green; the light ventral stripe edged with black. In some of the specimens from Omiteme the throat is bluish white with oblique blue stripes converging backwards. Females olive or olive-brown above, spotted with black, or with more or less regular black wavy cross-bands; black collar ill-defined or reduced to a bar in front of the shoulder, not extending across the throat. Lower parts yellowish white, throat bluish green.

This species is very closely allied to *S. spinosus*, from which it differs in the stronger mucronation and denticulation of the dorsal scales.

The type specimens came from St. Agustin, W. slope of Atitlan, Guatemala, 2000 ft. The specimens which I refer to the same species are from Jalapa, Omiteme, and Amula, South Mexico, Hacienda Rosa de Jericho in Nicaragua, 3250 ft., and Bebedero in Costa Rica.

## 12. SCELOPORUS ASPER, sp. n. (Plate XXXIII.)

Head-shields smooth; frontal transversely divided, the anterior moiety often longitudinally bisected, in contact with the interparietal or narrowly separated from the latter by the frontoparietals; interparietal as long as broad or a little broader than long, much larger than the parietals; a series of four transversely



enlarged supraoculars, bordered inwards by one series of very small scales and separated from the supraciliaries by two series of small scales; two canthal scales; three or four pointed scales, smaller than those in front of them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad, strongly keeled and mucronate, scarcely denticulate, the keels converging more or less distinctly towards the median line; 28 to 32 scales between the interparietal shield and the base of the tail; 7 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales keeled, graduating into the dorsals and ventrals, directed obliquely upwards and backwards. Ventral scales small, smooth, bicuspid. 38 to 44 scales round the middle of the body.

The adpressed hind limb reaches the ear; tibia nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the collar-fold. 17 to 21 femoral pores on each side.

Caudal scales as large as dorsals, very strongly keeled and mucronate, the keels forming continuous longitudinal ridges. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. La Cumbre de los Arrastrados. Buller.	85	18	21	18	24	30	7	42	21-19
♂. " " "	85	19	22	18	24	30	7	40	18-19
♀. " " "	70	15	16	14	20	28	7	38	17-17
♀. " " "	72	15	17	14	21	32	7	42	17-17
♀. " " "	69	14	15	14	20	30	7	44	18-18

Males olive or green above, uniform blue-green beneath; no collar, but a rather indistinct blackish blotch in front of the shoulder. Females brown above, with ill-defined darker spots or chevron-shaped cross-bars; whitish beneath, uniform or throat bluish.

*Hab.* A few specimens, of which the measurements and other particulars are recorded above, were obtained by Dr. A. C. Buller at La Cumbre de los Arrastrados, State of Jalisco, at an altitude of 8500 feet.

### 13. SCELOPORUS ZOSTEROMUS.

*Sceloporus zosteromus*, Cope, Proc. Ac. Philad. 1863, p. 105, and Proc. Amer. Philos. Soc. xxii. 1885, p. 395; Bouleng. Cat. Liz. ii. p. 225 (1885); Stejneger, N. Amer. Faun. no. 7, 1893, p. 181, pl. i. fig. 3; Van Denburgh, Proc. Calif. Acad. (2) v. 1895, p. 108.

*Sceloporus clarkii zosteromus*, Cope, Check-List N. Am. Rept. p. 49 (1875).



*Sceloporus rufidorsum*, Yarrow, Proc. U.S. Nat. Mus. v. 1882, p. 442.

Head-shields smooth; frontal transversely divided and in contact with the interparietal; latter shield as long as broad or a little broader than long, much larger than the parietals<sup>1</sup>; a series of four or five large, transverse supraoculars, bordered inwards by an incomplete series of scales, the last two or three shields being in contact with the frontoparietals and parietals, and separated from the supraciliaries by one or two series of scales; two canthal scales; three to five long pointed scales on the anterior border of the ear, much larger than those in front of them.

Dorsal scales much larger than ventrals, at least as long as broad, keeled, mucronate, entire or slightly denticulate, forming parallel longitudinal series; 28 to 30 scales between the interparietal shield and the base of the tail; 5 or 6 scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales keeled, graduating into the dorsals and ventrals, directed obliquely upwards and backwards. Ventral scales small, smooth, bicuspid. 32-36 scales round the middle of the body.

The adpressed hind limb reaches the ear or a little beyond; tibia longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the cervical pit. 17 to 22 femoral pores on each side.

Caudal scales as large as dorsals, strongly mucronate. Males with enlarged postanal scales.

			1.	2.	3.	4.	5.	6.	7.	8.	9.
♂.	S. José del Cabo.	Eisen ...	83	17	19	21	23	29	6	34	19-17
♂.	"	"	82	17	19	21	24	28	5½	36	20-20
♂.	"	"	75	14	15	17	20	29	5	32	18-18
♂.	"	"	62	13	14	16	20	29	6	32	17-18
♂.	Miraflores.	Eisen .....	70	14	15	18	21	28	6	36	18-18

Olive above, with a more or less distinct yellowish or reddish stripe along each side of the back; more or less distinct dark bars may be present across the back. Yellowish white beneath; males with a bluish-black band along each side of the middle line of the belly, and extending on the anterior face of the thigh; a blue-black vertical bar in front of the arm, sometimes connected with the ventral band; posterior part of the throat blue-black. Females uniform yellowish white beneath.

*Hab.* Lower California and neighbouring islands (Ceros, Santa Margarita, and Magdalena).

<sup>1</sup> Cope says: "Parietal scales wider than the interparietal." This is no doubt a lapsus, as may be seen by comparing Stejneger's figure, drawn from the type specimen.



14. *SCELOPORUS LICKI*.

*Sceloporus licki*, Van Denburgh, Proc. Cal. Ac. (2) v. 1895, p. 110, pl. x.

Head-shields smooth; frontal transversely divided, in contact with the interparietal; latter as long as broad or a little broader than long, broader than the parietals; a series of four large transverse supraoculars bordered inwards by an incomplete series of scales, the last two supraoculars being in contact with the interparietal and parietal; one or two series of scales between the large supraoculars and the supraciliaries; one or two canthal scales; four or five pointed scales, much longer than broad, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad, strongly keeled, very strongly mucronate and denticulate, the keels forming parallel longitudinal lines; 32-38 scales between the interparietal shield and the base of the tail; 7-9 (exceptionally 6 or 10) scales correspond to the length of the shielded part of the head. Lateral scales graduating into dorsals and ventrals, strongly keeled, pointing upwards and backwards. Ventral scales small, smooth, bi- or tricuspid. 36-38 scales round the middle of the body.

The adpressed hind limb reaches the ear, or between the ear and the eye; tibia longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the collar-fold. 14-16 femoral pores on each side.

Caudal scales as large as dorsals, strongly keeled and mucronate. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. S. San Lazaro. Eisen & Vaslit...	71	14	16	18	20	35	8	38	15-16
♂. " " " ...	69	14	15	16	19	35	7	36	14-14
♂. " " " ...	65	13	15	16	19	33	7	36	15-14
♂. Miraflores. Eisen & Vaslit .....	70	13	15	16	18	36	7	36	14-14

The following description of the colours is taken from fresh specimens by Mr. Van Denburgh:—

“Back and sides olive-brown, many of the scales having central markings of deep blue or green; a narrow line of verdigris-green runs along each side from the eye to the base of the tail; below this, a narrower similarly-coloured line runs from the ear to a point a short distance above and behind the axilla. A patch in front of the shoulder, the central part of the belly, and the anterior and lower surfaces of the thigh black, which colour gradually fades into the cyanine blue of the sides of the belly; throat olive-grey, with greenish-white lines, which converge to a point midway between the neck-patches. Tail brown, suffused with campanula-blue and beryl-green towards its base. One male has a single large blue patch on the throat, through which the ordinarily whitish lines show as lines of paler blue.”



*Hab.* Lower California. Numerous specimens were obtained at San José del Cabo, Miraflores, and in the Sierra San Lazaro and Sierra El Taste.

### 15. SCELOPORUS FORMOSUS.

*Sceloporus formosus*, Wiegman. Herp. Mex. p. 50, pl. vii. fig. 2 (1834); Bocourt, Miss. Sc. Mex., Rept. p. 182, pl. xviii. fig. 3 (1874); Boulenger. Cat. Liz. ii. p. 222 (1885).

*Tropidolepis formosus*, Dum. & Bibr. Erp. Gén. iv. p. 303 (1837).

*Sceloporus malachiticus*, Cope, Proc. Ac. Philad. 1864, p. 178, and Proc. Amer. Philos. Soc. xxii. 1885, p. 394.

*Sceloporus lunæi*, Bocourt, l. c. p. 184, pl. viii. bis, fig. 5; Cope, l. c. p. 395; Günther. Biol. C.-Am., Rept. p. 67 (1890).

*Sceloporus smaragdinus*, Bocourt, l. c. p. 186, pl. xviii. fig. 6 and pl. xix. fig. 1; Günther. l. c. p. 68.

*Sceloporus viviparus*, Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 398.

*Sceloporus tæniocnemis*, Cope, l. c. p. 399.

*Sceloporus torquatus formosus*, Cope, l. c. p. 402.

*Sceloporus irazuensis*, Günther. l. c. p. 67.

*Sceloporus salvini*, Günther. l. c. p. 68.

Head-shields smooth; frontal transversely divided, usually in contact with the interparietal; latter as long as broad or a little broader than long, much larger than the parietals, which may be divided; a series of three to five more or less enlarged, transverse supraoculars, bordered inwards by a complete or incomplete series of scales; one, two, or three series of scales between the large supraoculars and the supraciliaries; one or two canthal scales; three or four pointed scales, not or but a little larger than those before them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad or a little broader than long, strongly keeled, moderately or shortly mucronate, entire or tri- or quinque-cuspid, the keels forming parallel lines or obliquely converging towards the middle line on the posterior part of the back; 35-45 scales between the interparietal shield and the base of the tail; 8 or 9 scales (exceptionally 10), taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales graduating into dorsals and ventrals, strongly keeled, pointing upwards and backwards. Ventral scales small, smooth, bi- or tricuspid. 38-52 scales round the middle of the body.

The adpressed hind limb reaches the shoulder, the collar-fold, or the ear; tibia as long as or slightly longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals or slightly exceeds the distance between the end of the snout and the collar-fold. 11-16 femoral pores on each side.

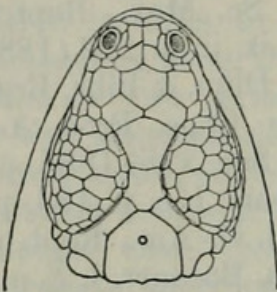
Caudal scales as large as or a little larger than dorsals, strongly keeled and mucronate. Males with enlarged postanal scales.

As Bocourt, Cope, and Günther all agree to consider the



number, one or two, of canthal scales as a specific character, I have divided accordingly the specimens in the following table. One, which is here figured, defies the system in being referable to the first category on the right side, to the second on the left.

Fig. 3.



Head of *Sceloporus formosus* from Costa Rica.

I have placed it last in the first division. It will be seen that the character is not constantly correlated with any other, and for that reason I must refuse to attach any special importance to it. Of *S. irazuensis*, Günther says:—"Two canthal scales, but owing to the shortness of the snout the anterior is not always fully developed." I cannot account for such a statement; there is no correlation between the number of canthals and the length of the snout, as may be seen from the specimen figured above, one of the types of *S. irazuensis*. Günther himself does not seem to have had great faith in the value of the character, as he has in several instances associated in the same species individuals with one canthal and others with two, although those exceptions are not alluded to in his descriptions. Curiously, Günther's *S. smaragdinus* is described as with one canthal scale (p. 69), and yet *S. taniocnemis*, Cope, is referred to it as a synonym in spite of Cope attributing to it two canthals.

A. One canthal shield.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
a. ♂. S. Mexico. Godman (1) .....	84	16	18	17	?	35	8	40	14-14
b. ♂. Coban, Guatemala. Salvin (2)	74	15	17	15	21	35	8	40	15-15
c. ♂. Dueñas, Guatemala. Salvin (3)	85	18	20	19	23	41	9	50	14-13
d. ♂. " " " ...	85	17	19	18	24	42	9	52	16-15
e. ♂. " " " ...	75	15	17	16	22	44	8	50	16-15
f. ♂. " " " ...	66	14	15	15	20	38	9	48	15-16
g. ♂. " " " ...	66	14	15	15	19	41	10	48	13-14
h. ♀. " " " ...	85	16	18	16	22	40	8	48	16-15
i. ♀. " " " ...	66	13	14	13	18	39	8	48	16-16
k. ♀. " " " ...	64	13	14	14	19	40	9	50	16-16
l. ♂. Ysabal, Guatemala. Salvin (3)...	84	16	17	17	24	40	8	44	15-16
m. ♂. Irazu, Costa Rica (1).....	63	13	15	13	19	34	8	40	14-14
n. ♀. " " ".....	57	13	14	13	17	35	8	38	13-12

(1) Referred by Günther to *S. irazuensis*.  
(2) Referred by Günther to *S. lunæi*.  
(3) Referred by Günther to *S. smaragdinus*.



## B. Two canthal shields.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
<i>o.</i> ♂. Jalapa. Hoege (1) .....	85	17	19	18	24	38	8	42	12-12
<i>p.</i> ♂. S. Mexico. Godman (1) .....	97	19	21	20	27	45	9	44	12-11
<i>q.</i> ♂. " " (2) .....	65	14	15	14	18	35	8	42	15-16
<i>r.</i> ♀. " " (1) .....	96	18	20	18	25	45	9	46	14-13
<i>s.</i> ♀. " " (1) .....	89	17	19	17	25	43	8	45	12-13
<i>t.</i> ♂. Guatemala. Salvin (1) .....	89	18	20	18	25	37	8	44	11-13
<i>u.</i> ♂. " " (1) .....	80	16	18	16	24	37	8	42	13-14
<i>v.</i> ♀. " " (1) .....	76	15	17	15	23	39	8	44	14-16
<i>w.</i> ♂. Irazu, Costa Rica (2) .....	68	14	16	14	18	33	8	42	16-16
<i>x.</i> ♀. " " (2) .....	68	13	15	14	20	35	8	38	15-13
<i>y.</i> ♀. " " (2) .....	62	13	15	14	19	33	8	40	14-13

(1) Referred by Günther to *S. salvini*.(2) Referred by Günther to *S. irazuensis*.

Green or olive above, dorsal scales often with a lighter central spot; series of blackish spots sometimes present on the back. Males with a black collar, which may be confined to the throat and sides (specs. *a-n*, *q*, *w-y*), or extend, continuous (specs. *o*, *r*) or interrupted (specs. *p*, *s-v*), across the nape; throat dark blue; breast blue or whitish, sometimes black; belly entirely dark blue or divided by a median yellowish-white, black-edged stripe. Females with a black bar in front of the shoulder, which may extend across the nape but not across the throat; lower parts yellowish white, throat often bluish green.

*Hab.* Mexico, Guatemala, and Costa Rica. Recorded by Bocourt from Tehuantepec and Colima in Mexico, Solola, Totonicapam, Quezaltenango, and the Alta Vera Paz in Guatemala.

## 16. SCELOPORUS UNDULATUS.

*Agama undulata* (Bosc), Daudin, Hist. Rept. iii. p. 384 (1802); Harlan, Med. Phys. Res. p. 140 (1835).

*Lacerta hyacinthina*, Green, Journ. Ac. Philad. i. 1818, p. 349.

*Lacerta fasciata*, Green, l. c.

*Uromastix undulatus*, Merrem, Tent. p. 57 (1820).

*Tropidolepis undulatus*, Gray, Griff. A. K. ix. Syn. p. 43 (1831); Dum. & Bibr. Erp. Gén. iv. p. 298 (1837); Holbr. N. Am. Herp. ii. p. 73, pl. ix. (1842); Gray, Cat. Liz. p. 208 (1845).

*Sceloporus undulatus*, Fitzing. Syst. Rept. p. 75 (1843); Girard, U.S. Explor. Exped., Herp. p. 379, pl. xix. figs. 15-21 (1858); Bocourt, Miss. Sc. Mex., Rept. p. 195, pl. xviii. bis, fig. 11 (1874); Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 395; Bouleng. Cat. Liz. ii. p. 227 (1885); Günth. Biol. C.-Am., Rept. p. 67 (1890); H. Garm. Bull. Illin. Lab. iii. 1892, p. 250; Hay, Batr. Rept. Indiana, p. 132 (1893).

*Sceloporus thayerii*, Baird & Gir. Proc. Ac. Philad. 1852, p. 127.



*Sceloporus occidentalis*, Baird & Gir. l. c. p. 175; Girard, l. c. p. 383, pl. xix. figs. 8-14; Stejneger, N. Am. Faun. no. 7, 1893, p. 186.

*Sceloporus frontalis*, Baird & Gir. l. c.; Gir. l. c. p. 384, pl. xix. figs. 8-14.

*Sceloporus longipes*, Baird, Proc. Ac. Philad. 1858, p. 254.

*Sceloporus biserialis*, Hallow. Rep. U.S. Explor. Surv. R. R. x. pt. iv. p. 6, pl. vi. fig. 2 & pl. viii. (1859); Bocourt, l. c. p. 197, pl. xviii. bis, fig. 10; Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 395; Stejneger, l. c. p. 184.

*Sceloporus smaragdinus* (non Bocourt), Cope, in Wheeler's Rep. Explor. W. 100th Mer. v. p. 572, pl. xxiv. fig. 2 (1875).

*Sceloporus undulatus*, var. *bocourti*, Bouleng. l. c. p. 229.

Some or all of the head-shields more or less rugose, rarely smooth, the scales between the enlarged supraoculars and the supraciliaries nearly constantly keeled or tuberculate; frontal transversely divided, usually in contact with the interparietal; latter as long as broad, a little longer than broad, or a little broader than long, much larger than the parietals, which may be divided; a series of four or five more or less enlarged, transverse supraoculars, bordered inwards by a complete (rarely incomplete) series of scales and separated from the supraciliaries by one or two series; two canthal scales (rarely one); four or five pointed scales, as large as or larger than those before them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, as long as broad or a little broader than long, strongly keeled, rather strongly mucronate, entire or feebly denticulate, the keels forming parallel lines or obliquely converging towards the middle line on the posterior part of the back; 32-43 scales between the interparietal shield and the base of the tail; 7-9 (exceptionally 10) scales, taken in the middle of the back, correspond to the length of the shielded part of the head. Lateral scales graduating into dorsals and ventrals, keeled, pointing upwards and backwards. Ventral scales small, smooth, bicuspid. 36-48 scales round the middle of the body.

The adpressed hind limb reaches the shoulder, the collar-fold, or the ear; tibia as long as or a little longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals or slightly exceeds the distance between the end of the snout and the collar-fold. 13-19 femoral pores on each side.

Caudal scales as large as or a little larger than dorsals, strongly keeled and mucronate. Males with enlarged postanal scales.

The typical form, inhabiting the Eastern and Central United States and the border of the Gulf of Mexico, is grey, brown, or copper-colour above, with a dorso-lateral series of whitish or bluish spots or lateral bands crossed by transverse dark brown or black angular spots, or undulous or zigzag cross-bars, which may extend across the back. In males, the sides of the belly are blue or blue-green, edged with black along a whitish stripe which



	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Raleigh, N. Car. Brimley .....	65	14	15	14	18	38	9	44	14-15
♂. " " " .....	61	13	15	14	17	39	9	44	15-14
♂. Bloomington, Ind. Bollman ...	63	13	15	14	18	37	8	44	13-13
♂. " " " .....	66	13	15	14	18	33	8	42	13-13
♂. Hot Springs, Arkansas. Brimley.	61	13	14	14	18	40	9	46	14-13
♂. " " " .....	55	11	12	12	16	42	9	46	16-14
♂. E. United States. " Russell .....	59	13	14	14	18	37	9	38	14-15
♂. " " " Green .....	70	14	16	15	19	35	7	36	15-15
♂. " " " .....	60	13	14	14	18	37	8	40	15-15
♂. New Orleans .....	65	13	14	14	17	32	7	39	14-14
♂. Duval Co., Texas. Taylor .....	60	13	14	14	17	37	8	40	17-18
♂. " " " .....	50	11	12	12	15	37	8	40	14-14
♂. " " " .....	48	10	11	11	14	38	8	42	17-16
♂. " " " .....	59	12	13	13	16	38	9	40	19-19
♂. " " " .....	54	11	12	12	15	38	7	40	14-16
♂. Salt Lake City .....	51	10	11	12	16	40	10	44	14-13
♂. Arizona. Wright .....	81	15	17	19	23	36	7	44	16-16
♂. " " " .....	72	15	16	18	22	36	7	40	15-14
♂. " " " .....	67	14	15	17	21	37	8	44	15-15
♂. " " " .....	78	15	16	17	22	37	8	44	16-16
♂. Hemet Valley, S. Diego Co., Cal. Gilbert.	73	15	16	18	22	40	8	48	17-16
♂. " " " " " .....	80	16	17	19	22	37	7½	44	15-16
♂. Tia Juana, S. Diego Co. " Eigenmann.	61	13	14	14	19	37	9	44	17-17
♂. Palo Alto, Cal. ....	58	11	13	14	18	45	9	50	17-18
♂. " " " .....	53	11	12	12	17	40	9	46	16-15
♂. S. Bernardino, Cal. Forrer.....	72	14	16	17	21	40	8	42	15-15
♂. " " " .....	70	14	15	17	20	37	8	42	14-15
♂. " " " .....	53	11	12	12	16	35	8	44	15-15
♂. " " " .....	65	13	15	16	19	38	8	44	15-13
♂. " " " .....	61	13	14	15	19	36	8	42	15-17
♂. " " " .....	59	12	13	13	18	36	8	44	15-15
♂. " " " Douglas.....	67	14	15	16	22	36	8	44	17-16
♂. S. Pedro, Cal. Eigenmann .....	67	14	15	15	18	36	7	40	14-13
♂. " " " .....	64	13	14	14	19	35	7	40	13-14
♂. " " " .....	57	12	13	13	16	34	7	38	14-13
♂. Sta. Cruz, Cal. Forrer.....	60	12	14	14	16	37	8	42	17-17
♂. " " " .....	60	12	13	13	15	38	8	45	15-16
♂. Camp Taylor, Marin Co., Cal. Eigenmann.	68	14	15	16	19	35	8	44	14-15
♂. " " " " " .....	66	14	15	14	18	39	9	44	16-16
♂. Camp Taylor. " Eigenmann ....	68	13	14	15	19	39	7	45	15-16
♂. " " " .....	66	13	14	13	16	38	8	42	14-15
♂. " " " .....	56	12	13	12	17	36	8	42	14-14
♂. " " " .....	55	12	13	13	16	40	8	40	15-14
♂. " " " .....	48	11	12	11	14	40	9	42	15-15
♂. S. Jacinto, Cal. ....	78	15	16	18	23	39	8	48	14-15
♂. " " " .....	63	13	14	15	19	35	7	44	14-14
♂. Los Gatos, Cal. Gilbert .....	65	13	14	15	19	40	8	46	19-19
♂. " " " .....	50	11	12	11	15	39	9	47	16-15
♂. Mt. Whitney, Cal. Smiths. In. (1).	83	16	18	19	22	39	7	44	16-17
♂. " " " (1).	67	14	15	16	19	37	8	44	16-17
♂. Monterey, Cal. ....	62	13	14	14	16	36	7	44	15-15
♂. California. Smiths. Inst. ....	64	13	14	14	19	43	9	45	17-16
♂. " " Gruber .....	63	13	14	15	18	39	8	44	17-16
♂. " " " .....	54	12	13	13	16	39	9	44	16-16
♂. Brit. Columbia. Lord .....	67	14	15	16	19	38	8	42	15-17
♂. " " " .....	66	13	14	15	18	38	8	40	15-14
♂. " " " .....	65	13	14	15	17	37	8	44	14-14
♂. Yzabal, Guatemala. Salvin .....	74	15	17	16	20	34	8	40	14-16

(1) These specimens, numbered 8658 and 8659, were sent as *S. thayeri*. They are now referred to *S. occidentalis* by Stejneger.



extends down the middle line of the belly; there is a blue or green spot, often edged or surrounded with black, on each side of the throat, and a black bar in front of the shoulder, sometimes extending across the neck; breast whitish; the two blue spots of the throat sometimes confluent into one. In females, the lower parts are whitish, uniform or with some small brown spots; a pair of blue spots is sometimes present on the throat.

The Western form is often more olive above, sometimes greenish, and the dark dorsal markings are frequently more in the form of large blotches in two or four longitudinal series; a light dorso-lateral stripe is frequently well defined. The blue patches on the sides of the belly are usually as well developed in females and young as in males; the latter, however, not unfrequently differ in having the whole of the lower surfaces not occupied by the blue colour of a uniform black.

Although I am perfectly satisfied that the specimens here enumerated (see p. 505) cannot be divided into several species, yet it would be desirable to attempt some sort of classification into varieties. For such a purpose, however, my material is insufficient, and the desultory and often misleading descriptions of supposed species hitherto published in America are of no service. On examination of a small material one would feel tempted to divide the species into an Eastern (typical) and a Western form (var. *biseriatus*, Hallow., with which, according to Stejneger, my var. *bocourti* is identical), the latter being distinguished by a rather larger size, larger ear-lobules, and the presence of a large patch of blue on the sides of the belly in females and young. But the size of the ear-lobules varies, and some Western specimens have them no larger than in the typical form. I have carefully compared specimens from Monterey, which Stejneger refers to *S. occidentalis*, with others referred by the same authority to *S. biseriatus*, and cannot find any difference by which to separate them.

*Hab.* This species has a wide range in North America, extending from North Mexico to New Jersey on the east coast and British Columbia on the west. Its range in Mexico cannot at present be traced; but a specimen collected at Yzabal, Guatemala, by Mr. Salvin, certainly belongs to it.

#### 17. SCELOPORUS ELONGATUS.

*Sceloporus elongatus*, Stejneger, N. Am. Faun. no. 3, 1890, p. 111.

This species appears to be very closely allied to *S. graciosus*. It is described as follows:—

“Head-shields smooth; occipital [interparietal] comparatively small, but broader than parietals; two or three parietals on each side; two scales on canthus rostralis; supraoculars, one large row and three small subequal ones, two outer and one inner; five free scales in front of ear-opening; dorsal rows nearly parallel; lateral scales but little smaller, in oblique rows; scales on shoulders large,



connecting dorsals with brachials; dorsal scales keeled, pointed, with a well-pronounced notch on each side of the point, 47 to 51 scales between occipital and tail, 9 to 11 in a head length; femoral pores 16 to 18 on each side, not meeting medially; tail about eight times the length of the head; distance between base of fifth toe and extremity of fourth, including claw, less than distance from nostril to arm, and much more than from snout to posterior margin of ear; no colour bands across nape; no longitudinal colour bands; males with dark blue patches on flanks and one on each side of throat; females similarly marked, but colours less vivid and less extended."

Total length 199 millim.; head to occiput 15; snout to vent 75; fore limb 34; hind limb 52.

*Hab.* Painted Desert, Arizona.

#### 18. SCELOPORUS GRATIOSUS.

*Sceloporus graciosus*, Baird & Gir. Proc. Ac. Philad. 1852, p. 69, and in Stansb. Exped. Gr. Salt Lake, p. 346, pl. v. figs. 1-3 (1852); Cope, in Hayden's Rep. U.S. Geol. Surv. Montana, p. 468 (1872), and Proc. Am. Philos. Soc. xxii. 1885, p. 395; Bouleng. Cat. Liz. ii. p. 230 (1885); Günth. Biol. C. Am., Rept. p. 71 (1890); Stejneger, N. Am. Faun. no. 3, 1890, p. 111, and no. 7, 1893, pt. ii. p. 183.

*Sceloporus gracilis*, Baird & Gir. Proc. Ac. Philad. 1852, p. 175; Girard, U.S. Explor. Exped., Herp. p. 386, pl. xx. figs. 1-9 (1858); Bocourt, Miss. Sc. Mex., Rept. p. 190, pl. xviii. fig. 4 (1874).

*Sceloporus jalapæ*, Günth. l. c. p. 74.

*Sceloporus vandenburgianus*, Cope, Amer. Nat. 1896, p. 834.

Head-shields smooth; frontal transversely divided, in contact with the interparietal or separated from it by the frontoparietals; interparietal large, broader than long; parietals small or broken up into scales; four to six transversely enlarged supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two or three series; four or five slightly enlarged pointed scales form a denticulation on the anterior border of the ear.

Dorsal scales small, a little larger than ventrals, strongly keeled, pointed or slightly mucronate, forming parallel longitudinal lines; 52-56 scales between the interparietal shield and the base of the tail, 11-16 corresponding to the length of the shielded part of the head. Lateral scales a little smaller than dorsals, keeled, directed obliquely upwards and backwards. Ventral scales smooth, more or less distinctly bicuspid. 50-58 scales round the middle of the body.

The adpressed hind limb reaches the ear or between the shoulder and the ear; tibia as long as or slightly longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the anterior extremity, or the middle of the collar-fold. Femoral pores 14-18 on each side.



Caudal scales larger than dorsals, keeled. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Brit. Columbia. Lord .....	42	9	10	10	12	55	13	52	16-16
♂. Hemet Valley, S. Diego Co., Cal. Gilbert.	59	12	13	13	17	56	15	58	15-14
♀. " " " " ...	55	11	12	12	16	63	16	57	15-15
♀. Puebla, Mexico. Boucard.....	45	9	10	9	11	56	12	58	18-18
♀. " " " " .....	44	9	10	9	12	55	13	54	18-18
♀. Jalapa. Hoege (1)....	47	10	11	10	14	52	12	56	18-17

(1) Type of *S. jalapæ*. The series of femoral pores separated by a single scale on the præanal region, as is likewise the case in one of the two females from Puebla.

Olive above, with two more or less distinct lighter or yellowish stripes along each side, and longitudinal series of transverse blackish spots which may be confluent into stripes. Male with the sides of the belly blue and black-edged, the middle line white and narrow or more or less broad; throat blue, or whitish with a few black spots; front of arm and thigh sometimes black. Female with the lower parts uniform white.

*Hab.* *S. graciosus* has a wide distribution. It is on record from British Columbia, Oregon, California, Nevada, Utah, Arizona, Northern Lower California, Vera Cruz, and Puebla.

## 19. SCELOPORUS GRAMMICUS.

*Sceloporus grammicus*, Wiegmann. Isis, 1828, p. 370, and Herp. Mex. p. 51 (1834); Bocourt, Miss. Sc. Mex., Rept. p. 192, pl. xviii. bis, fig. 12 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 395; Boulenger, Cat. Liz. ii. p. 231 (1885); Günther, Biol. C.-Am., Rept. p. 71 (1890).

*Sceloporus pleurostictus*, Wiegman. Isis, 1828, p. 370.

*Tropidolepis grammicus*, Gray, Griff. A.K. ix. Syn. p. 43 (1831);  
Dum. & Bibr. Erp. Gén. iv. p. 308 (1837).

*Sceloporus heterurus*, Cope, Proc. Ac. Philad. 1866, p. 322.

Head-shields smooth or slightly rugose; frontal transversely divided, in contact with the interparietal, which is a little broader than long; parietals small, usually one pair on each side; a series of four or five transversely enlarged supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two or three series; two canthal scales; anterior border of ear feebly denticulated.

Dorsal scales larger than ventrals, strongly keeled, not or but slightly mucronate, forming oblique series; 45-50 scales between the interparietal shield and the base of the tail, 12-15 corresponding to the length of the shielded part of the head. Lateral scales keeled, directed obliquely upwards and backwards, gradually



merging into dorsals and ventrals. Ventral scales smooth, mostly entire. 46-50 scales round the middle of the body.

The adpressed hind limb reaches the ear; tibia as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth slightly exceeds the distance between the end of the snout and the posterior border of the ear. 13-16 femoral pores on each side.

Caudal scales much larger than dorsals, strongly keeled. Males with enlarged postanal scales.

Olive above, with transverse black spots; a narrow black scapular collar, interrupted in the middle. Male with a blue, black-edged patch on each side of the belly.

A small species, the largest specimen on record measuring 66 millim. from snout to vent. I have examined only two half-grown specimens from Guatemala.

*Hab.* The few specimens known come from Mexico (Oaxaca, Mirador, Tehuantepec) and Guatemala.

## 20. SCELOPORUS MICROLEPIDOTUS.

*Sceloporus grammicus*, var. *a*, Wiegman. Isis, 1828, p. 370.

*Sceloporus microlepidotus*, Wiegman. Herp. Mex. p. 51 (1834); Bocourt, Miss. Sc. Mex., Rept. p. 194, pl. xviii. bis, fig. 13 (1874); Cope, Proc. Amer. Philos. Soc. xxii. 1885, p. 395; Boulenger. Cat. Liz. ii. p. 232 (1885); Dugès, Naturelleza, (2) i. 1888, p. 112, pl. xi. fig. 5; Günther. Biol. C.-Am., Rept. p. 72 (1890).

*Tropidolepis microlepidotus*, Dum. & Bibron. Erp. Gén. iv. p. 308 (1837); Gray, Cat. Liz. p. 209 (1845).

*Sceloporus dispar*, Baird & Girard. Proc. Ac. Philad. 1852, p. 127.

*Sceloporus rubriventris*, Günther. l. c. pl. xxxii. fig. C.<sup>1</sup>

Head-shields smooth or slightly rugose; frontal transversely divided, in contact with the interparietal or separated from it by a small azygous shield; interparietal as long as broad or a little broader than long; parietals small or broken up into scales; one or two series of transversely enlarged supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two to four series; two canthal scales; anterior border of ear with a denticulation of slightly enlarged pointed scales.

Dorsal scales not or but slightly larger than ventrals, strongly keeled, not or but slightly mucronate, forming oblique longitudinal series converging towards the median line; 60-83 scales between the interparietal shield and the base of the tail, 12-20 corresponding to the length of the shielded part of the head. Lateral scales keeled, directed upwards and backwards. Ventral scales smooth, entire or bicuspid. 62-78 scales round the middle of the body.

The adpressed hind limb reaches the shoulder or the ear; tibia

<sup>1</sup> Founded partly on the erroneous assumption that both sexes are coloured alike. The two specimens described are females. The number of scales in a series along the middle of the back varies much more than between 62 and 68 in the specimens referred by Günther to *S. microlepidotus*.



nearly as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth exceeds the distance between the end of the snout and the posterior border of the ear. 14-22 femoral pores on each side.

Caudal scales much larger than dorsals, strongly keeled, shortly mucronate. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Mexico .....	67	13	14	14	18	71	16	78	18-18
♂. " .....	58	11	12	12	16	78	16	70	17-15
♂. " Sallé .....	64	12	14	14	17	68	15	62	16-16
♂. " " .....	54	11	12	11	15	63	15	62	16-15
♂. Ciudad, Durango. Forrer.....	57	11	12	12	15	83	16	72	15-15
♂. " " .....	55	11	12	11	14	72	16	71	17-17
♂. " " .....	51	11	12	12	14	80	18	70	16-15
♂. " " .....	51	11	12	12	14	71	16	66	15-15
♂. " " .....	49	10	11	11	14	70	16	72	14-14
♂. " " .....	49	10	11	11	14	77	17	74	16-16
♂. " " .....	50	10	11	10	13	74	16	66	14-15
♂. Ventanas, Durango. Forrer.....	46	9	10	10	12	67	18	67	15-16
♂. Guanajuato. Dugès .....	52	11	12	11	14	64	16	65	16-15
♂. " " .....	58	11	12	11	14	68	15	68	16-16
♂. Jalapa. Hoege .....	63	13	14	13	17	82	20	78	17-17
♂. Orizaba .....	48	11	12	11	15	75	20	70	16-15
♂. " .....	46	10	11	10	13	72	20	74	17-18
♂. " .....	59	12	13	12	15	73	18	74	16-16
♂. " .....	56	11	12	11	15	82	21	72	14-14
♂. Puebla. Boucard .....	70	13	15	13	17	83	16	72	18-19
♂. " " .....	62	12	13	13	15	79	16	72	17-18
♂. " " .....	43	10	11	10	13	82	20	73	18-18
♂. City of Mexico. Dugès .....	66	13	14	14	18	73	16	74	17-18
♂. " " .....	65	13	14	14	17	82	20	74	17-18
♂. " " .....	62	12	13	12	16	78	17	72	17-16
♂. Omilteme, Guerrero (1). Smith .	60	13	14	13	16	60	12	64	15-16
♂. " " (1). " .....	60	12	14	13	16	62	15	62	17-18
♂. Popocatepetl, 9000 ft. Godman .	49	11	12	10	14	72	16	62	16-16
♂. " " " .....	43	10	11	9	13	63	18	70	16-15
♂. S. Mexico. Godman .....	63	13	14	14	17	72	18	72	17-16
♂. " " .....	55	11	12	11	14	80	19	66	16-15
♂. " " .....	50	10	11	10	14	82	19	68	16-17

(1) Types of *S. rubriventris*.

Brownish, olive, or green above, the sides often marbled with black; dorsal region immaculate, or irregularly spotted with black and whitish, more often with a double series of angularly curved black markings pointing forwards; head frequently with transverse black lines; usually a large black spot in front of the shoulder, sometimes connected with its fellow across the throat. Males with the throat and the sides of the belly blue, broadly edged with black near the narrow whitish median ventral line; front of thighs sometimes black.<sup>1</sup> Females yellowish or greenish below,

<sup>1</sup> Some males, according to Dugès, have the middle of the throat, and the flanks above the blue patches, orange.



sometimes tinged with rusty or orange on the throat and the sides of the belly; throat sometimes marbled with grey.

*Hab.* This species appears to be distributed over the greater part of Mexico, in the mountains up to 9000 feet.

## 21. SCELOPORUS HETEROLEPIS.

*Sceloporus heterolepis*, Bouleng. Proc. Zool. Soc. 1894, p. 731, pl. xlviii. fig. 4.

Head-shields smooth; frontal transversely divided, in contact with the interparietal, or separated from it by a small azygous shield; interparietal as long as broad, or broader than long; parietals small, sometimes indistinct; one or two more or less irregular series of transversely enlarged supraoculars, the series surrounded by smaller scales; two canthal scales; anterior border of ear with a denticulation formed by three or four pointed scales. Dorsal scales very unequal in size, irregular, some nearly smooth, others strongly keeled; a pair of vertebral and a dorso-lateral series of large strongly-keeled scales form sorts of crests along the body; 45-75 scales along the median line between the interparietal shield and the base of the tail, 10-13 corresponding to the length of the shielded part of the head. Lateral scales imbricate, small, directed obliquely upwards and backwards. Ventral scales small, smooth, mostly bicuspid. 56-68 scales round the middle of the body.

The hind limb reaches the shoulder or the ear; tibia as long as the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth exceeds the distance between the end of the snout and the posterior border of the ear. 14 to 19 femoral pores on each side.

Caudal scales as large as largest dorsals, strongly keeled, spinose. Males with enlarged postanal scales.

		1.	2.	3.	4.	5.	6.	7.	8.	9.
♂.	La Cumbre de los Arrastrados. Buller.	64	13	14	13	17	75	13	62	17-17
♂.	" " " " ...	61	13	14	13	17	58	12	60	16-16
♂.	" " " " ...	61	13	14	13	16	73	13	58	14-14
♂.	" " " " ...	58	13	14	13	17	51	11	62	17-17
♂.	" " " " ...	58	12	13	13	17	59	13	56	16-15
♂.	" " " " ...	56	12	13	12	16	62	12	62	18-17
♂.	" " " " ...	59	12	13	12	15	59	12	58	17-19
♂.	" " " " ...	58	12	13	12	15	56	11	58	18-16
♂.	" " " " ...	58	12	13	12	15	65	11	60	16-16
♂.	" " " " ...	49	11	12	10	14	53	10	58	15-17
♂.	" " " " ...	49	11	12	11	15	59	10	62	17-16
♂.	Real Alto. Buller .....	51	11	12	11	15	61	12	66	15-17
♂.	Sierra de Bolaños. Buller .....	59	13	14	13	17	45	10	68	17-16

Coloration very much as in *S. microlepidotus*. Greyish or pale brown above, with indistinct darker and lighter blotches and symmetrical blackish markings in the form of transverse or angular



lines, the first of which crosses the frontal and supraocular regions. Male with a black bar (sometimes interrupted) across the throat, and with a large pale blue blotch on each side of the belly, broadly edged with blackish blue on the median ventral line.

*Hab.* The specimens were collected at various localities in the State of Jalisco, at altitudes varying between 7800 and 8500 feet.

## 22. *SCELOPORUS PYRRHOCEPHALUS*.

*Sceloporus pyrrhocephalus*<sup>1</sup>, Cope, Proc. Ac. Philad. 1864, p. 177, and Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 235 (1885); Günth. Biol. C.-Am., Rept. p. 70 (1890).

Head-shields smooth; frontal transversely divided, in contact with the interparietal, which is a little broader than long; parietals small, one pair on each side; one or two canthal scales; five large transverse supraoculars, bordered inwards by one series of scales, and separated from the supraciliaries by another; five scales, not larger than those before them, form a denticulation on the anterior border of the ear.

Dorsal scales much larger than ventrals, strongly keeled, mucronate and more or less distinctly denticulate, forming oblique series converging towards the median line; 40-43 scales between the interparietal shield and the base of the tail; 8 scales, taken in the middle of the back, correspond to the length of the head. Ventral scales small, smooth, bicuspid. 46-50 scales round the middle of the body.

The adpressed hind limb reaches the shoulder or the ear; tibia as long as the distance between the end of the snout and the ear; the distance between the base of the fifth toe and the extremity of the fourth exceeds the distance between the end of the snout and the posterior border of the ear. 12-15 femoral pores on each side.

Tail distinctly compressed. Caudal scales as large as dorsals, strongly keeled and mucronate. Males without enlarged postanal scales.

The two specimens in the British Museum show the following measurements and numbers of scales:—

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Colima. Lloyd .....	72	15	16	16	18	43	8	50	12-12
♂. " " .....	66	13	14	15	19	40	8	46	14-15

Bronze-coloured above, reddish towards the sides; a broad, black, light-edged stripe along each side; a black vertical bar in front of the shoulder; head reddish brown; lips with dark vertical bars; an elongate black spot with yellow centre (pineal eye) in the middle of the interparietal shield; throat with oblique bluish bands, converging posteriorly; breast and middle of belly yellowish;

<sup>1</sup> Originally misspelt "*pyrocephalus*."



sides of belly pale blue, with seven to nine blackish-blue cross-bars. The coloration of the female is still unknown.

*Hab.* This well-marked species is only known from one locality: Colima, in Western Mexico.

### 23. SCELOPORUS CHRYSOSTICTUS.

*Sceloporus chrysostictus*, Cope, Proc. Ac. Philad. 1866, p. 125, and Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 235 (1885); Günth. Biol. C.-Am., Rept. p. 70 (1890).

Head-shields keeled or striated; frontal transversely divided, the anterior portion usually longitudinally bisected; a pair of interparietals between the frontal and the interparietal; latter broader than long; parietals very small, one or two on each side; a series of four or five large transverse supraoculars, bordered inwards by a complete or incomplete series of very small scales, and separated from the supraciliaries by one or two series of scales; two canthal scales, rarely one; anterior border of ear feebly denticulated.

Dorsal scales much larger than ventrals, strongly keeled, simply pointed, forming slightly oblique longitudinal lines; 40-45 scales between the interparietal shield and the base of the tail, 8-10 corresponding to the length of the shielded part of the head. Lateral scales smaller than, but graduating into, the dorsals, keeled and directed obliquely upwards and backwards. Ventral scales small, smooth, entire. 36-40 scales round the middle of the body.

The adpressed hind limb reaches the anterior border of the orbit or the nostril; tibia longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the arm and the nostril or the tip of the snout. 13-16 femoral pores on each side.

Caudal scales as large as dorsals, keeled, pointed. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Yucatan .....	63	13	14	16	21	41	9	36	15-14
♂. " .....	52	11	12	13	20	44	10	38	15-16
♀. " .....	55	11	12	14	20	43	10	40	15-15
♀. " .....	50	11	11	14	19	43	9	38	14-?

Brownish or olive above, strongly metallic; a golden dorso-lateral band; a blackish spot at axilla; hinder side of thighs with a transverse and several vertical blackish bars. Lower surfaces yellowish white, throat sometimes brownish. Male without distinctive ventral markings.

*Hab.* *S. chrysostictus* is recorded by Cope from Yucatan and Guatemala.



24. *SCELOPORUS* *ÆNEUS*.

*Sceloporus æneus*, Wieg. Isis, 1828, p. 370, and Herp. Mex. p. 52 (1834); Bocourt, Miss. Sc. Mex., Rept. p. 205, pl. xviii. bis, fig. 4 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 233 (1885); Günth. Biol. C.-Am., Rept. p. 74 (1890).

*Tropidolepis æneus*, Gray, Griff. A. K. ix. Syn. p. 44 (1831); Dum. & Bibr. Erp. Gén. iv. p. 309 (1837).

Head-shields keeled or striated; frontal transversely divided, in contact with the interparietal, or separated from it by a small azygous shield; parietals very small, or broken up into scales; a more or less regular series of feebly enlarged transverse supra-oculars, bordered inwards by one series of scales, and separated from the supraciliaries by two or three series; one or two canthal scales; anterior border of ear very slightly denticulated.

Dorsal scales larger than ventrals, strongly keeled, sharply pointed or tricuspid, forming parallel longitudinal lines; 39-44 scales between the interparietal shield and the base of the tail, 6-10 corresponding to the length of the shielded part of the head. Lateral scales as large as or little smaller than dorsals, more or less distinctly keeled, forming straight or very slightly oblique longitudinal series. Ventral scales smooth, mostly bicuspid. 36-48 scales round the middle of the body.

The adpressed hind limb reaches hardly the axilla or the shoulder; tibia shorter than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the anterior or the posterior border of the ear. 14-19 femoral pores on each side, meeting or narrowly separated on the præanal region.

Caudal scales as large as or a little larger than dorsals, strongly keeled, sharply pointed. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Puebla. Boucard .....	60	12	13	11	13	41	8	40	17-17
♂. " " .....	50	11	12	9	13	40	9	40	19-19
♀. " " .....	56	10	11	9	12	40	6	40	17-18
♀. " " .....	54	10	11	9	13	42	8	48	16-16
♀. Orizaba .....	53	11	12	9	12	42	8	42	15-15
♂. Jalisco, N. of R. de Santiago. Smith .....	46	10	11	9	12	44	10	42	18-16
♀. " " " " .....	47	10	11	9	12	39	8	36	18-17
♂. La Cumbre de los Arrastrados, Jalisco. Buller.....	49	10	11	9	13	41	9	42	16-15
♀. " " " " .....	43	9	10	8	11	41	8	44	14-14
♀. H. Sta. Gertrudis, Jalisco. Buller .....	50	10	11	9	12	40	8	40	15-15
♀. Mexico, Boucard .....	49	10	10	9	11	40	8	44	17-16
♀. " " .....	47	9	10	8	10	41	8	42	15-15

Olive, bronzy brown, or reddish brown above, uniform, or with



light streaks and symmetrical dark markings, exactly as in *S. scalaris*. Lower parts, in the male, much spotted with black in addition to the blue ventral patches, the throat and belly sometimes nearly entirely blackish blue.

*Hab.* Mexico. Recorded from the States of Vera Cruz, Puebla, and Jalisco.

## 25. SCELOPORUS SCALARIS.

*Sceloporus scalaris*, Wiegman. Isis, 1828, p. 370, and Herp. Mex. p. 50, pl. viii. fig. 2 (1834); Bocourt, Miss. Sc. Mex., Rept. p. 202, pl. xviii. bis, fig. 9 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Boulenger, Cat. Liz. ii. p. 234 (1885); Dugès, Naturaleza, (2) i. 1887, p. 111; Günther, Biol. C.-Am., Rept. p. 73 (1890).

*Tropidolepis scalaris*, Gray, Griff. A. K. ix. Syn. p. 44 (1831), and Zool. Beechey's Voy. p. 95, pl. xxx. fig. 3 (1839); Dum. & Bibr. Erp. Gén. iv. p. 310 (1837); Gray, Cat. Liz. p. 210 (1845).

Head-shields keeled or striated; frontal transversely divided, in contact with the interparietal, which is as long as broad or longer than broad; parietals very small, or broken up into scales; a more or less regular series of feebly enlarged transverse supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two or three series; two canthal scales; anterior border of ear very slightly denticulated.

Dorsal scales larger than ventrals, strongly keeled, sharply pointed, forming parallel longitudinal lines; 33-48 scales between the interparietal shield and the base of the tail, 6-10 corresponding to the length of the shielded part of the head. Lateral scales nearly as large as dorsals, more or less distinctly keeled, forming straight or very slightly oblique longitudinal series. Ventral scales smooth, mostly bicuspid. 34-46 scales round the middle of the body.

The adpressed hind limb reaches the axilla, the shoulder, or between the shoulder and the ear; tibia as long as or slightly longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the ear or the collar-fold. 13-20 femoral pores on each side, meeting or narrowly separated on the præanal region.

Caudal scales as large as or larger than dorsals, strongly keeled. Males with enlarged postanal scales.

Yellowish brown, reddish, or olive above, with four regular series of large crescentic brown spots, the series separated by more or less well-defined light longitudinal lines or stripes; head with symmetrical dark brown markings; a black or deep blue spot, often with a light blue centre, in front of the arm. Male yellowish white beneath, the throat spotted with blackish or with oblique blackish lines converging posteriorly; an elongate deep blue patch on each side of the belly. Female uniform yellowish



	1.	2.	3.	4.	5.	6.	7.	8.	9.
♀. Jalisco, N. of R. de Santiago.									
Smith .....	57	11	12	11	14	37	7	36	16-16
♂. " " "	54	11	12	11	13	38	7	35	15-15
♂. " " "	52	11	12	11	15	36	7	38	17-16
♂. " " "	51	11	12	11	13	38	8	40	14-13
♂. " " "	50	10	11	10	13	33	6	34	15-15
♂. " " "	50	10	11	10	13	34	6	36	14-15
♂. " " "	49	10	11	10	12	36	6	38	15-15
♂. " " "	48	10	11	10	12	34	7	37	17-17
♂. Zacatecas. Buller .....	58	11	12	11	14	40	7	37	14-13
♂. " " "	50	10	11	10	13	38	7	38	13-15
♂. Guanajuato. Dugès .....	64	12	13	12	15	45	7	42	15-15
♂. Atlixco. Boucard .....	64	12	13	12	15	48	8	42	17-16
♂. " " "	63	12	13	12	16	43	8	40	17-17
♂. Hac. del Bobo, S. Mexico. Hoege	45	10	11	10	12	45	9	40	17-17
♂. S. Mexico. Godman .....	69	13	15	14	15	44	10	39	17-16
♂. " " "	67	13	14	14	17	41	9	42	18-18
♂. " " "	55	10	11	11	14	45	9	44	17-17
♂. " " "	59	11	12	12	13	45	9	44	19-18
♂. " " "	47	9	10	9	12	44	10	42	17-17
♂. Mexico. Boucard .....	62	13	15	13	17	43	9	42	17-17
♂. " " "	61	12	14	12	16	43	9	42	18-17
♂. " " "	64	12	14	13	17	43	9	42	19-20
♂. " " "	63	13	14	13	16	41	8	40	16-17
♂. " " "	61	12	14	13	17	44	9	43	19-18
♂. " " "	60	12	14	12	16	43	9	42	16-17

white beneath, uniform or with oblique blackish lines on the throat.

*Hab.* This species, which may have to be united with the preceding, inhabits the greater part of Mexico; it is said to penetrate northwards a little way into South-western Texas and Arizona, although the determination of the specimens on which the statement is made requires revision, for some of them at least prove, according to Stejneger, to belong to *S. variabilis*.

## 26. SCELOPORUS VARIABILIS.

*Sceloporus variabilis*, Wieg. Herp. Mex. p. 51 (1834); Bo-court, Miss. Sc. Mex., Rept. p. 200, pl. xviii. bis, fig. 1, & pl. xix. fig. 2 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 236 (1885); Günth. Biol. C.-Am., Rept. p. 75 (1890); Stejneger, Proc. U.S. Nat. Mus. xiv. 1891, p. 485.

*Tropidolepis variabilis*, Dum. & Bibr. Erp. Gén. iv. p. 308 (1837); Gray, Cat. Liz. p. 209 (1845).

*Sceloporus marmoratus*, Hallow. Proc. Ac. Philad. 1852, p. 178, and in Sitgreave's Exped. Zuni & Color. R. p. 110, pl. ii. (1853).

*Sceloporus delicatissimus*, Hallow. ll. cc. pp. 178, 109, pl. i.

*Lysoptychus lateralis*, Cope, Proc. U.S. Nat. Mus. xi. 1888, p. 397, pl. xxxvi. fig. 1.

Head-shields keeled or striated, rarely nearly smooth; frontal transversely dilated, sometimes also longitudinally, separated from



the interparietal by a pair of frontoparietals; interparietal usually broader than long; parietals small, often broken up into scales; a series of four to six large transverse supraoculars, bordered inwards by a complete or incomplete series of scales, and separated from the supraciliaries by one, two, or three series; two canthal scales; a feeble denticulation on the anterior border of the ear. A more or less distinct transverse gular fold often present<sup>1</sup>; lateral cervical fold forming a deep pouch.

Dorsal scales strongly keeled, pointed or shortly mucronate, not or but very feebly denticulated, forming 12 to 18 straight or slightly oblique longitudinal series; 46-65 scales between the

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Duval Co., Texas. Taylor .....	49	11	11	11	16	65	15	68	10-11
♂. " " " .....	49	11	11	11	16	64	15	64	12-11
♂. " " " .....	48	11	12	12	14	60	16	65	14-14
♂. Coahuila. Taylor .....	42	10	10	10	14	58	16	68	15-15
♂. Huamelula. Boucard .....	60	13	14	14	19	63	17	76	13-14
♂. " " " .....	47	11	11	11	16	64	17	78	14-15
♂. Jalisco, N. of R. de Santiago. Smith .....	72	14	15	16	20	55	12	62	12-11
♂. " " " .....	67	14	15	16	20	56	11	68	14-14
♂. " " " .....	57	12	13	13	17	53	12	68	13-12
♂. " " " .....	54	11	12	12	16	53	11	64	11-12
♂. " " " .....	46	10	11	12	15	52	11	62	14-14
♂. Tampico. Richardson .....	75	15	17	17	21	50	11	60	12-13
♂. " " " .....	70	14	16	17	22	56	12	66	13-14
♂. " " " .....	70	14	16	17	23	47	10	60	13-15
♂. " " " .....	70	15	16	17	22	53	12	60	15-15
♂. " " " .....	68	14	16	17	22	50	12	58	14-13
♂. " " " .....	57	12	13	14	20	49	12	58	11-12
♂. " " " .....	62	13	14	15	18	53	12	60	11-13
♂. " " " .....	58	13	14	14	18	53	11	58	12-12
♂. " " " .....	56	12	13	14	18	52	11	58	14-14
♂. " " " .....	56	12	13	14	19	52	12	60	13-14
♂. " " " .....	56	12	13	14	19	46	11	56	13-12
♂. " " " .....	53	11	12	12	18	51	12	56	11-13
♂. Orizaba. Godman .....	58	13	14	14	18	53	17	74	13-14
♂. " " " .....	57	12	13	13	17	51	12	68	13-13
♂. Jalapa .....	70	14	16	16	21	55	12	68	14-15
♂. " Godman .....	55	12	13	13	18	63	14	66	12-14
♂. Huatuzco. " .....	67	14	16	16	20	59	13	66	13-13
♂. Atoyac, Guerrero. Smith .....	66	14	16	16	20	52	12	68	13-12
♂. " " " .....	64	14	15	15	19	53	13	70	16-15
♂. " " " .....	63	13	14	14	19	51	12	60	13-11
♂. " " " .....	62	13	14	14	19	55	12	64	14-14
♂. " " " .....	58	12	14	14	19	60	13	64	13-12
♂. " " " .....	57	12	13	14	18	55	13	58	11-11
♂. " " " .....	54	12	13	13	16	57	12	66	13-13
♂. " " " .....	54	12	13	13	16	50	11	58	12-13
♂. " " " .....	52	11	12	12	14	48	11	58	12-12
♂. Hac. del Bobo, S. Mexico. Hoege .....	50	11	12	12	18	56	13	64	13-14
♂. S. Geronimo, Guatemala. Salvin .....	54	12	13	12	16	52	12	62	12-11

<sup>1</sup> The genus *Lysoptychus* was established by Cope on account of "a loose fold across the throat formed by the conjunction of the pre-humeral folds."



interparietal shield and the base of the tail, 10-17 corresponding to the length of the shielded part of the head. Lateral scales much smaller, abruptly differentiated from dorsals, keeled, imbricate, directed obliquely upwards and backwards. Ventral scales as large as laterals or a little larger, smooth, mostly bicuspid. 56-78 scales round the middle of the body.

The adpressed hind limb reaches the ear or the eye; tibia as long as or a little longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the arm and the nostril or a little less. 10-16 femoral pores on each side.

Caudal scales as large as or a little larger than dorsals, strongly keeled, shortly mucronate. Males with enlarged postanal scales.

Olive, brownish, or golden above, sides darker; a more or less distinct yellowish dorso-lateral band; a series of transverse blackish bars or spots along each side of the back; a blackish spot, light-edged in front, above axilla. Lower parts yellowish or dirty white in the female. Male with a large pink or pale blue blotch on each side of the belly, edged internally with dark blue and often very narrowly separated on the median line; throat and breast sometimes dark grey.

*Hab.* The greater part of Mexico and Guatemala, extending northwards into Southern Texas.

#### 27. *SCELOPORUS CUPREUS*.

*Sceloporus cupreus*, Bocourt, Miss. Sc. Mex., Rept. p. 210, pl. xviii. bis, fig. 2 (1874).

*Sceloporus teapensis*, Günth. Biol. C.-Am., Rept. p. 75 (1890).

Head-shields keeled or striated; frontal transversely divided, sometimes longitudinally bisected, separated from the interparietal by a pair of frontoparietals; interparietal broader than long; parietals small or broken up into scales; a series of four or five large transverse supraoculars, bordered inwards by a complete or incomplete series of small scales and separated from the supraciliaries by one or two series; two canthal scales; anterior border of ear very feebly denticulated.

Ten or eleven longitudinal series of large, strongly keeled, shortly mucronate dorsal scales, forming straight or slightly oblique longitudinal series; 39-43 scales between the interparietal shield and the base of the tail, 8 or 9 corresponding to the length of the shielded part of the head. Lateral scales much smaller, keeled, directed upwards and backwards, abruptly differentiated from the dorsals. Ventral scales small, smooth, mostly bicuspid. 40-46 scales round the middle of the body.

The adpressed hind limb reaches the ear or the eye; tibia as long as the distance between the end of the snout and the ear; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the anterior extremity or the middle of the collar-fold. 9-14 femoral pores on each side.



Caudal scales as large as or a little larger than dorsals, strongly keeled, shortly mucronate. Males with enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Sarabia, Oaxaca. Buller .....	65	14	15	15	20	39	9	46	14-13
♀. " " " " .....	56	12	13	13	16	43	9	42	14-13
♀. S. Domingo de Guzman, Oaxaca. Buller .....	58	13	14	14	17	40	9	42	11-12
♂. Teapa, Tabasco. Smith (1).....	74	15	17	17	20	40	9	40	9-11
♂. " " " " .....	66	14	16	16	20	39	9	46	10-10
♂. " " " " .....	61	13	14	15	20	39	9	44	12-13
♀. " " " " .....	62	13	14	15	19	40	8	42	10-11
♀. " " " " .....	61	13	14	14	18	40	9	44	10-11
♀. " " " " .....	57	12	13	13	18	42	9	46	13-12

(1) Types of *S. teapensis*.

This table shows such approximation to *S. variabilis* in the number of scales as to render it probable that a larger series would completely bridge over the gap now believed to exist between the two species, in which case they would have to be united.

Coloration exactly as in *S. variabilis*, the ground-colour of the upper parts varying from pale golden to dark bronzy olive, with more or less distinct lighter lateral bands; a black spot with an oblique white streak above the shoulder.

*Hab.* This species, which has been erroneously referred to the synonymy of *S. chrysostictus* by Cope, is only known from the States of Oaxaca, whence the type specimens were obtained<sup>1</sup>, and Tabasco.

## 28. SCELOPORUS SINIFERUS.

*Sceloporus siniferus*, Cope, Proc. Am. Philos. Soc. xi. 1869, p. 157; Bocourt, Journ. de Zool. v. 1876, p. 342; Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 237 (1885); Günth. Biol. C.-Am., Rept. p. 76 (1890).

*Sceloporus humeralis*, Bocourt, Miss. Sc. Mex., Rept. p. 206, pl. xviii. bis, fig. 3 (1874).

Head-shields keeled or striated, rarely nearly smooth; frontal transversely divided, the anterior or both the anterior and posterior portions longitudinally bisected, separated from the interparietal by a pair of frontoparietals; interparietal broader than long, usually followed by a band-like shield; parietals small or broken up into scales; four or five large transverse supraoculars, bordered inwards by a complete or incomplete series of scales and separated

<sup>1</sup> The agreement between our female specimens from Oaxaca and the type female, which was likewise obtained together with *S. siniferus*, is so close that I cannot entertain the least doubt as to the correctness of my identification. But it must be mentioned that Bocourt describes the male as without sexual markings, whilst our specimens have the belly coloured as in *S. variabilis*. I have, however, examined a male of the latter species (from H. del Bobo) in which the ventral markings are very indistinct.



from the supraciliaries by one or two series; two canthal scales; three or four obtusely pointed scales form a feeble denticulation on the anterior border of the ear. Lateral cervical fold forming a deep pouch.

Dorsal scales very strongly keeled, pointed or shortly mucronate, forming 8 to 10 straight or slightly oblique longitudinal series; 34-44 scales between the interparietal shield and the base of the tail, 6-9 corresponding to the length of the shielded part of the head. Lateral scales much smaller, abruptly differentiated from dorsals, keeled, imbricate, directed obliquely upwards and backwards. Ventral scales as large as laterals or a little larger, smooth, entire. 36-44 scales round the middle of the body.

The adpressed hind limb reaches the ear, the eye, or the nostril; tibia a little longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the nostril and the arm, or a little less. 3-8 femoral pores on each side.

Caudal scales as large as dorsals, strongly keeled, shortly mucronate. No enlarged postanal scales.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
♂. Acapulco, Guerrero. Godman...	52	12	13	15	21	32	7	34	8-7
♂. Omilteme, " " ...	52	11	12	14	19	33	6	40	7-7
♂. Oaxaca. Sallé .....	53	12	13	13	18	36	8	36	4-6
♂. " " " " .....	52	12	13	13	17	36	7	40	5-4
♂. S. Domingo de Guzman, Oaxaca.									
♂. Buller .....	55	13	14	14	19	34	7	36	4-5
♂. " " " " .....	53	13	14	14	20	35	8	42	5-5
♂. " " " " .....	51	12	13	13	17	37	8	40	6-5
♂. Tehuantepec City. Buller .....	53	12	13	14	19	40	9	44	5-5
♂. " " " " .....	51	11	12	12	16	35	8	38	5-5
♂. " " " " .....	44	10	11	11	16	37	9	44	4-6
♂. " " " " .....	41	10	10	10	14	35	8	42	5-5
♂. Tehuantepec .....	53	12	13	13	18	33	8	40	5-5

Olive-brown above, with coppery gloss; sides darker, sometimes blackish; a yellowish dorso-lateral streak frequently separates the dorsal from the lateral surfaces; a series of oblique blackish cross-lines along each side of the back. Lower surfaces uniform yellowish in both sexes, or finely speckled with blackish in the males.

*Hab.* Isthmus of Tehuantepec.

## 29. SCELOPORUS FULVUS.

*Sceloporus fulvus*, Bocourt, Miss. Sc. Mex., Rept. p. 214, pl. xviii. bis, fig. 8 (1874); Bouleng. Cat. Liz. ii. p. 238 (1885).

Head-shields feebly keeled or striated, sometimes nearly smooth; frontal divided into four small shields separated from the interparietal by a pair of frontoparietals; interparietal as long as broad; parietals small, two on each side; a series of four or five large transverse supraoculars, bordered inwards by one series of small scales and separated from the supraciliaries by one or two series;



a single canthal scale; anterior border of ear very slightly denticulated. Lateral cervical fold forming a deep pouch.

Dorsal scales much larger than ventrals, strongly keeled, sharply pointed, forming eight or nine parallel longitudinal series; 30-33 scales between the interparietal shield and the base of the tail, 7 or 8 corresponding to the length of the shielded part of the head. Lateral scales smaller, slightly larger than ventrals, keeled, obliquely directed upwards and backwards, sharply differentiated from the dorsals. Ventral scales obtusely keeled, pointed, entire. 38-40 scales round the middle of the body.

The adpressed hind limb reaches the eye; tibia longer than the shielded part of the head; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the cervical pouch. 3-5 femoral pores on each side.

Caudal scales nearly as large as dorsals, strongly keeled. No enlarged postanal scales.

Fulvous above, sides dark brown; a yellow dorso-lateral band separating the dorsal from the lateral surfaces; a more or less distinct series of oblique dark-brown spots along each side of the back. Lower parts uniform yellowish in both sexes.

*Hab.* Salvador, Nicaragua.

The two specimens examined by me form part of M. Lataste's collection.

### 30. SCELOPORUS SQUAMOSUS.

*Sceloporus squamosus*, Bocourt, Miss. Sc. Mex., Rept. p. 212, pl. xviii. bis, fig. 7, and xix. fig. 3 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 238 (1885).

Differs from *S. siniferus* and *fulvus* by the presence, in the male, of enlarged postanal scales: from the former, by the presence of a single canthal scale; from the latter by the absence of keels on the ventral scales. Lower surfaces, in both sexes, yellowish, dotted all over with grey.

*Hab.* Guatemala to Costa Rica.

This species is a desideratum in the British Museum.

### 31. SCELOPORUS UTIFORMIS.

*Sceloporus utiformis*, Cope, Proc. Ac. Philad. 1864, p. 177; Bocourt, Miss. Sc. Mex., Rept. p. 208, pl. xviii. bis, fig. 6 (1874); Cope, Proc. Am. Philos. Soc. xxii. 1885, p. 394; Bouleng. Cat. Liz. ii. p. 238 (1885).

Head-shields keeled or striated; frontal transversely divided; interparietal as long as broad; parietals very small; a series of five or six large transverse supraoculars, bordered inwards by a series of small scales, and separated from the supraciliaries by two or three series; two canthal scales; anterior border of ear very slightly denticulated. Sides of neck strongly plicate, minutely granular.

Ten longitudinal rows of large, highly keeled, shortly mucronate dorsal scales, separated by many lateral series of minute flat scales



from the smaller entire-edged ventrals; 40 scales between the interparietal shield and the base of the tail; 10 dorsal scales correspond to the length of the head.

Tibia longer than the shielded part of the head. 13 or 14 femoral pores on each side.

General colour blackish above, with numerous indistinct lighter cross-bars; or light brown with a double longitudinal series of transverse black spots and a yellow dorso-lateral band; yellowish or greenish inferiorly.

From snout to vent 68 millim.

*Hab.* Colima, Mexico.

I have not seen examples of this species.

### 32. SCELOPORUS COUCHII.

*Sceloporus couchii*, Baird, Proc. Ac. Philad. 1858, p. 254; Bouleng. Cat. Liz. ii. p. 231 (1885).

Head-shields smooth; frontal transversely divided; interparietal large, as long as broad, separated from the frontal by a pair of small shields; parietals small, two on each side; two canthal scales; five transversely enlarged supraoculars, bordered inwards by one series of scales and separated from the supraciliaries by two or three series; four slightly enlarged, pointed scales form a denticulation on the anterior border of the ear.

Dorsal scales small, not larger than ventrals, keeled, truncate or rounded behind, forming parallel longitudinal lines; 82 scales between the interparietal shield and the base of the tail; 20 scales, taken in the middle of the back, correspond to the length of the shielded part of the head; lateral scales minute, granular, much smaller than dorsals and ventrals. Ventral scales smooth, entire. 108 scales round the middle of the body.

The adpressed hind limb reaches the posterior border of the orbit; tibia as long as the distance between the end of the snout and the ear; the distance between the base of the fifth toe and the extremity of the fourth equals the distance between the end of the snout and the middle of the collar-fold. Femoral pores 17-18 (25 in the type).

Caudal scales much larger than dorsals, strongly keeled and shortly mucronate. Males with enlarged postanal scales.

Dark olive above, with an interrupted bluish-white lateral stripe; sides spotted with bluish white; a black white-edged ocellus with blue centre in front of the shoulder; lips white with black vertical bars. Throat white with dark blue oblique streaks converging posteriorly; breast and middle of belly white; sides of belly blue, with blackish inner edge.

*Hab.* The type is from Santa Catharina, Nuevo Leon. The single specimen I have examined, a male measuring 57 millim. from snout to vent, was obtained in Duval Co., Texas, by Mr. W. Taylor.

### EXPLANATION OF PLATE XXXIII.

*Sceloporus asper*, male, upper and under views.









Boulenger, George Albert. 1897. "A revision of the lizards of the genus *Sceloporus*." *Proceedings of the Zoological Society of London* 1897, 474–522.

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