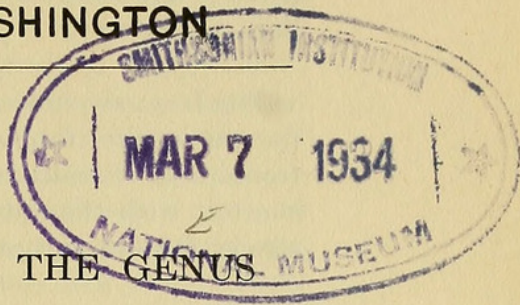


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



TWO NEW MEXICAN SKINKS OF THE GENUS
EUMECES.

BY EDWARD H. TAYLOR.

Among the spoils of a collecting trip made in the summer of 1932 by Hobart Smith and myself in Mexico are two forms of the genus *Eumeces* which appear to be unnamed. These are from the southern part of Mexico; one, the smaller, from the central part of the State of Guerrero; the other, a larger form, from the State of Mexico.

The smaller form seems to show relationship with the *brevirostris* group, which is largely Mexican in distribution. The second form has been known since 1885 when Cope¹ published a short description of the form under the name of "*Eumeces brevirostris* Gthr. Var."

Despite the fact that Cope associated the species with *E. brevirostris*, I am of the opinion that the relation is not with this group. I suspect that its nearest relationship is with *Eumeces anthracinus* or *Eumeces septentrionalis*, although not closely related with either.

Eumeces ochoteranae, sp. nov.

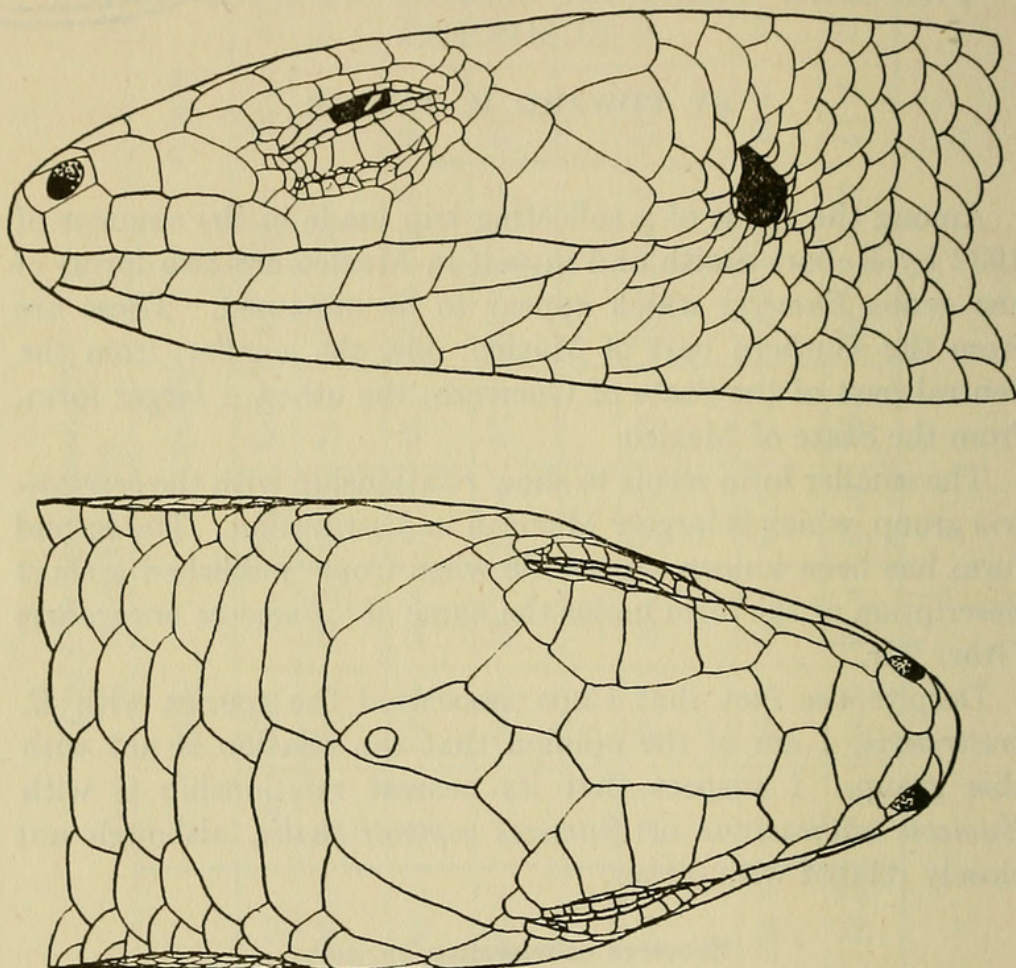
Type.—No. 1015. Taylor-Smith Collection; collected June 26, 1932, Mazatlan (4 miles north of Chilpanzingo), Guerrero, Mexico, by Edward H. Taylor and Hobart Smith.

Diagnosis.—A small slender species, with limbs small, widely separated when adpressed; four supraoculars; interparietal not enclosed; two pairs of nuchals; seven upper labials; postmental single; no postnasal; primary temporal sometimes in contact with lower secondary temporal, separating seventh labial from the upper secondary temporal; scale bordering the inner side of the elongate postgenial, wider than long; subcaudals widened; 22 (24) scale rows. Blackish or brownish with broad dorsolateral light

¹Proc. Amer. Phil. Soc., Vol. XXII, 1885, p. 387.

stripes on the back running to tail; a lateral line on labials to forearm; a black or black-brown lateral stripe; no trace of a median light line or forking lines on the head.

Description of the type.—Rostral much wider than high, the portion visible from above less than half the area of the frontonasal; internasals normal in size, forming a median suture, touching the anterior loreals; frontonasal six-sided, forming its longest sutures with the prefrontals, its shortest with the anterior loreal; prefrontals wider than long, forming a strong median suture and subequal sutures with the first supraocular,



Eumeces ochoterenae, sp. nov.

Taylor-Smith Coll. no. 1015 Type.

Head, lateral and dorsal views. Actual head length 7.4 mm.

first superciliary and the two loreals; frontal longer than its distance from the tip of the snout bordered by the three anterior supraoculars; first supraocular equally as large as fourth, second largest; frontoparietals small, square, forming a median suture; interparietal narrow, elongate, not enclosed behind by the parietals; latter diagonal, twice as long as their greatest width, narrowly separated posteriorly; two pairs of broad nuchals of about equal size; nasal small, the anterior part triangular, nearly as

large as remainder of scale including the nostril; no postnasal; anterior loreal nearly as long as high, distinctly higher than second loreal, which is about once and one half as long as high; seven-eight superciliaries; two presuboculars, the lower largest; three postsuboculars; seven upper labials, the first higher than the four succeeding scales; seventh labial somewhat larger than sixth; separated from the upper secondary temporal; the primary temporal, small quadrangular touching lower secondary, which is fan shaped; upper secondary elongate, once and two-thirds as long as its greatest width; tertiary temporal narrow and elongate, not entering the ear; seventh labial separated from the ear by two subequal pairs of postlabial scales; ear opening small with one or two very black auricular lobules. Upper medial palpebral scales not separated from the superciliaries; lower eyelid with three enlarged opaque scales, separated from the subocular by two or three rows of small granular scales; six lower labials, last longest; mental moderate having a labial border very slightly longer than the rostral; a single azygous postmental; three pairs of chinshields, the second pair largest; the third pair followed by an elongate postgenial bordered internally by a scale broader than long.

Body scales in 22 rows about the middle, the dorsal scales slightly larger than laterals or ventrals; scales on neck behind ear in 30 rows; narrow part of the neck, 23 rows; about base of tail 15 rows; the subcaudal scales two and one-half to three times as wide as long, and 94 scales from anus to tip of tail; from occiput to above anus 54; lateral scale rows generally parallel; marginal pits on scales numerous about insertion of arm and leg, but elsewhere dim or wanting; two enlarged preanals with two smaller scales on each side, border the anus; the outer scales overlapping inner; lateral postanal scale slightly differentiated.

Palm with several enlarged tubercles with many smaller ones; the wrist tubercle prominent; lamella formula, 4 : 8 : 10 : 10 : 6; the sole with one or two differentiated scales; the heel bordered by four flat scales or tubercles; lamella formula of foot, 5 : 8 : 10 : 12 : 8; the terminal lamellae not tightly bound about base of claws.

Color.—Above blackish to gray-brown with irregular minute darker flecking; a broad dorsolateral light gray-white line originating on the rostrals, passes back over head and along side and on to the proximal third of the tail; this line occupies the outer two-thirds of the second scale row, and the inner half of the third; this color is not clear, but is dirty looking due to flecking with darker color; a lateral line begins on the rostral and passes back to the near insertion of foreleg; only the lower edge of the auricular opening is involved; the color becomes much intensified below the eye and from there on is a silvery white; lower labials, chin, and throat light; abdomen, sides, and under limbs grayish or bluish gray flecked with minute darker areas; tail brownish at base, but distal two-thirds is of a very deep purplish blue color, less pronounced below.

TABLE OF MEASUREMENTS AND SCALE COUNTS OF THE TYPE SERIES.

Number.....	type 1015	1481	1483	1480	1012	1013	1482	1014	1484	1016	1017
Sex.....	♂	♂	♀	♂	♂	♂	♂	♂	yg.	yg.	yg.
Snout to vent.....	56	53	51.5	51.2	51	50.5	50	49.6	26	25.5	23
Tail.....	91	—	—	—	—	—	—	—	30	—	—
Snout to fore limb.....	17.2	16	16	16.5	16	15.7	16	16	10.2	8.9	9
Snout to ear.....	9	9.4	8.9	9	8.7	—	8.5	8.5	5.5	5.3	5.2
Axilla to groin.....	33	30.5	30	29	30	29	33	29	12	12.5	12.2
Width of head.....	6	7	7	7	7	7	6.7	6.3	—	—	—
Length of head.....	7.4	8	7.5	7.5	7.3	7.7	7.5	7.2	5	5	5.1
Width of body.....	8	8.7	8	9	8	7.8	7	8	4	4	3.8
Foreleg.....	8.9	10.2	9.8	10.7	9	9.2	9.2	9.2	5.2	4.4	4
Hindleg.....	14.1	14	13	14.3	13	13	13	13	8	7	5.8
Scales rows.....	22	23	22	24	22	22	23	23	22	23	22
Interparietal in- closed.....	no	no	no	no	no	no	no	no	no	no	no
Scales occiput to anus.....	55	54	54	55	56	53	55	54	54	57	55
Upper labials.....	7	7	7	7	7	7	7	7	7	7	7
Supraoculars.....	4	4	4	4	4	4	4	4	4	4	4
Nuchals, pairs.....	2	2	2	2	2	2	2	2	2	2	2
Postmentals.....	1	1	1	1	1	1	1	1	1	1	1
Postnasals.....	0	0	0	0	0	0	0	0	0	0	0
Largest labial.....	7	7	7	7	7	7	7	7	7	7	7
Frontonasal touches frontal.....	no	no	no	no	no	no	no	yes	no	no	no
Supraoculars touch frontal.....	3	3	3	3	3	3	3	3	3	3	3
Seventh labial touches upper secondary tem- porals.....	no	no	no	yes	no	no	no	yes	yes	yes	yes

Variation.—The chief variations are listed in the table. The scales preceding the ear between ear and seventh labial are usually as described, but may be replaced by two elongate ones, or three, the two upper uniting. The character of the temporals (the relation of the seventh labial to the upper secondary temporal) is variable, and they are separated in about half of the specimens and form a common suture in the other half. The number of subcaudal scales varies from 84 to 90.

Relationship.—This form is apparently related to *Eumeces brevirostris*, but differs in having a lower average count of scale rows; smaller and shorter limbs; the much broader dorsolateral line (separated by two whole and two half dark colored scales); the absence of a lateral light line along the sides of abdomen; the retention of blue color in the tails of adults and a smaller average of scales from parietals to anus (usually 6 to 8 less).

Habitat.—This form was first encountered at Mazatlan, near Chilpanzingo, Guerrero, Mexico, June 26, 1932. The specimens were routed from under stone and leaves and the rotting masses of agave plants. A few days later, July 1, 1932, several specimens were taken high in the

mountains in pine forest between the villages of Rincon and Cajones, south of Chilpanzingo. These specimens were found usually in rock ledges and under leaves at the base of large boulders.

A total of eleven specimens were taken. No other species of the genus was found in our collecting in the State of Guerrero.

The species is named for Dr. Isaac Ochoterena, Director of the Instituto de Biologia, Chapultepec, Mexico, D. F. Mexico, a noted Mexican histologist and botanist, as an expression of appreciation for innumerable courtesies extended to Mr. Smith and myself while sojourning in Mexico.

***Eumeces copei*, sp. nov.**

Type.—No. 3859, Taylor-Smith Collection; collected 10 miles southeast of Asuncion, in the western part of the State of Mexico, Mexico, August 4, 1932, by Edward H. Taylor and Hobart Smith.

Diagnosis.—A moderately large form, having well defined lateral and dorsolateral white lines, but lacking any trace of a median white line or forking light lines on the head; the limbs small, widely separated in adults when adpressed on sides of body; four supraoculars, three touching the frontal; two pairs of nuchals; seven labials, last largest or equal to sixth; a single postmental; no postnasal; large primary temporal in contact with lower secondary temporal and equal or larger in size; a broad scale bordering the post-genial internally; scales in 22 or 24 rows about the middle of body.

Description of the type.—Adult female. Rostral moderately high, the part visible above one-third or less, than the area of the frontonasal, in contact with the frontal and forming sutures with nasals, prefrontals, and the anterior loreal; prefrontals quadrangular, the longest side forms the frontonasal suture; the sutures with the frontal next in size; that with the second loreal larger than the sutures with anterior loreal, superciliary, or anterior supraocular; frontal large, broad anteriorly, the anterior end a very obtuse angle, as is the posterior; in contact with three supraoculars; two irregularly rectangular frontoparietals forming a median suture one-third their length; interparietal large, broad, not enclosed by the parietal; parietals large, irregularly hexagonal; two pairs of nuchals, the anterior pair largest; nasal relatively small, the part in front of nostril much smaller than the posterior part including nostril; no postnasal; anterior loreal much higher than wide, distinctly higher than posterior loreal, which is longer than high; two presuboculars, the anterior largest; three postsuboculars, the upper largest; primary temporal large equal in area and broadly in contact with the lower secondary temporal, separating the seventh labial from the upper secondary temporal; tertiary temporal small elongate, widened medially; a pair of postlabials border anterior edge of the ear, the lower elongate; seven upper labials, four preceding the subocular, of which the first is the largest; sixth and seventh very large, of about same area; eye with four enlarged scales on lower lid separated from the subocular by three rows of minute tubercles; six superciliaries, the anterior large, the second less than half its size; mental large, having a longer labial border than the rostral; a single large azygous postmental; six lower labials, the

last elongate; three pairs of chinshields, the first in contact medially; the postgenial elongate, bordered on anterior inner edge by a scale broader than long.

Scales on the body large, in 22 (or 24) rows, larger dorsally than ventrally, the rows parallel on the sides; about the neck posterior to the ear 28 rows; about narrow part of neck 26 rows; behind arm 29 rows and 15 about base of the tail; scales from occiput to above the anus 61; scales above and behind insertion of limbs with numerous pits on posterior borders; scales under tail widened about $2\frac{1}{2}$ times as wide as long; anus bordered by two median preanal scales and two smaller scales on each side, the outer scales overlapping the inner; a very small area of small tubercular scales in axilla; lateral postanal scale enlarged but not strongly differentiated.

Limbs small, weak, widely separated when adpressed; palm with several enlarged rounded scales mixed with smaller; the wrist tubercle on outer edge of under side of wrist not especially enlarged; lamella formula for fingers: 5 : 8 : 11 : 10 : 6; foot with (normally) four enlarged tubercles bordering the heel; usually one enlarged tubercle on the sole with other smaller tubercles; lamella formula: 4 : 7 : 10 : 12 : 9; fourth toe with intercalated lateral scales only at base of the proximal phalanx.

Color, from life.—Above the general color is a brownish olive to light chocolate; a very distinct, very narrow creamy white dorsolateral line begins on the rostral, passes back along the sides of the head and along the side of body to some distance on the base of the tail, occupying the median third of the third scale row. A cream white lateral line begins on rostral, passes along the lower part of the first four labials, then rises somewhat, passing across the upper part of the succeeding labials, reaching middle and upper edge of ear; behind ear it begins on lower half of the ear edge, then bends down slightly, continuing back above arm along the side and to some distance on the tail. A deep black or black-brown stripe begins on the side of the head, runs along the side, occupying the area between the light lines and bordering the inner edge of the lateral; on the median part of the back there are five brown lines; the three median, which follow the edges of the scale rows, are quite distinct, but are much lighter in color and narrower than the deep black-brown lines bordering the light dorso-lateral lines; head with a few black-brown spots; below the lateral light line, sides black-brown, each scale with a lighter grayish area forming more or less distinct lighter lines; lower labials, chin, abdomen, underside of limbs, and tail dirty grayish to bluish gray, the preanals showing some brownish color; scales of arm and leg showing irregular light dots, the fingers with cream dots on each scale, the toes only partly so; soles and palms bluish black.

MEASUREMENTS AND SCALE CHARACTERS OF *Eumeces copei* sp. nov.

Number.....	type 3859	3870	3871	3884	3860	3864	3886	3888	3896	3895	3898
Sex.....	♀	♀	♂	♀	♀	♂	♂	♂	♀	yg.	yg.
Snout to vent.....	76	76	67	65	63	60	55	50	45	34	29
Tail.....	—	—	95	—	—	—	—	71	—	49	—
Snout to forelimb..	23	22.2	20.5	18.6	19	20.3	18	16	13	12	11
Snout to ear.....	12	12.3	12	11	10.8	10.5	10	9.4	8	7	6
Axilla to groin.....	47.5	45.5	38	40	37.5	34	30	28	28	19	15
Width of head.....	10	9.5	9.5	9	8.2	9	8.6	7	7	6	5
Length of head.....	11	10.3	10.2	9.8	9.3	9.5	9.2	8.7	7.7	6.8	6
Width of body.....	11.5	12	10.5	10	10	9	9.2	8	8.2	7	6.5
Foreleg.....	13.8	14	15	13.5	14	12.6	13	11	10.2	8.5	7.5
Hindleg.....	18.2	19.4	20	18	18.2	18	17	16	14	11.2	9.2
Scale rows.....	22	24	23	23	24	22	24	22	22	24	24
Interparietal in- closed.....	no	no	no	no	no	no	no	no	no	no	no
Scales occiput to anus.....	60	64	63	63	60	60	62	62	64	63	63
Upper labials.....	7	7	7	7	7	7	7	7	7	7	7
Supraoculars.....	4	4	4	4	4	4	4	4	4	4	4
Nuchals, pairs.....	2	2	2½	2	2	2	2	2½	2	2	2
Post mentals.....	1	1	1	1	1	1	1	1	1	1	1
Post nasals.....	0	0	0	0	0	0	0	0	0	0	0
Largest labial.....	7	7	7=6	7	7	7=6	7=6	7=6	7=6	7=6	7=6
Frontonasal touches frontal.....	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes
Supraoculars touch frontal.....	3	3	3	3	3	3	3	3	3	3	3
Seventh labial touches upper secondary tem- poral.....	no	no	no	no	no	no	no	no	no	no	no

Variation.—In the series available for study, there are 36 specimens.² All show a rather decided tenacity to the color pattern described, and moreover it seems to be retained in both sexes to old age with very little change save that the bluish color of the tail is lost early. There is some variation in the shades of brown forming the ground color and in a few specimens the three chocolate lines bordering the edges of the three median scale rows are dim or rarely missing; occasionally, the dark spots on the dorsal part of the head are wanting.

The scale characters show some variation. The frontal occasionally is separated from the frontonasal (8 times in 36). The parietals fail invariably to enclose the interparietal; the sixth and seventh upper labials are of about equal area, the seventh occasionally the largest; there are invariably four supraoculars, three of which touch the frontal (one exception); seven upper labials (one exception with six); the scales about the ear vary be-

²I have just examined another specimen of this species which Dr. G. K. Noble has forwarded from the American Museum of Natural History (No. 19293 Santa Lucia, Distrito Federal, Mexico). It is a young specimen lacking the three median brown lines.

tween 15 and 17; invariably one postmental and no postnasal; superciliaries vary between six and seven (five in two specimens). Usually one auricular lobule (rarely two, or none, enlarged). The frontonasal invariably touches the first loreal. The lamellae under the fourth toe vary between 12 and 14, 13 being the most frequent number (two specimens have 16 on one side); postsuboculars usually three (three exceptions with four). In the greater part of the specimens the primary temporal is larger than the lower secondary (which is unusual in the genus) and is invariably in contact with it, thereby separating the seventh labial from the upper secondary temporal. The limbs when adpressed fail to touch save in the smallest specimens (29–34 mm.) where they may overlap one or two millimeters.

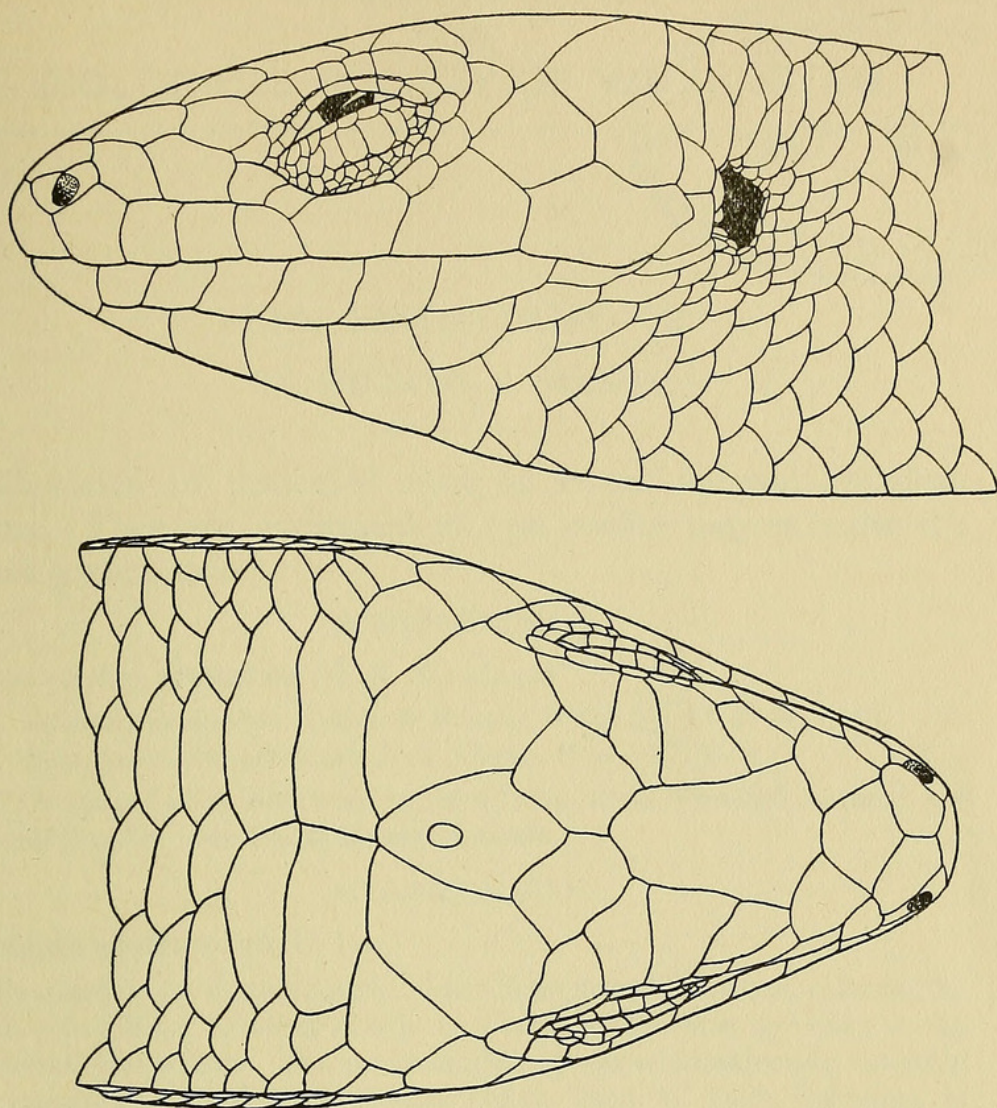
Habitat.—The specimens were found for the most part under rocks or logs. A single specimen was obtained by Hobart Smith in the lava field along the highway between Mexico City and Cuernavaca about 60 kilometers from the type locality. The others of the type series were found in the western part of the State of Mexico, Mexico, between Toluca and Asuncion at elevations between 6000 and 9000 feet.

There are two specimens belonging to this species in the United States National Museum, but both are from indefinite localities. One is a discolored specimen with the color pattern practically obliterated (no. 7037 from "Mexico"); the other is the specimen mentioned by Cope *loc. cit.* This specimen shows the color pattern. It is from "Either the valley of Mexico, or the adjacent one of Toluca."

In the Museo Nacional de Mexico there is a specimen presumably from the mountains between Mexico City and Toluca which is labelled *Eumeces "herrerae."* A search through available Mexican publications, and inquiries made, fail to show that this name was published.

Remarks.—The type series numbers 32 specimens of various age and sex. An examination of the sex organs fail to disclose whether the form is ovoviviparous or not. All the females lack developing eggs, save the United States National Museum specimen, which shows five developing eggs in the ovaries. The stomachs contain a variety of insects belonging to several families, chiefly coleoptera and blattids. No ants were observed.

The species is named for Edward Dinker Cope, who first noted the form, but failed to give it a name.



Eumeces copei, sp. nov.

Taylor-Smith Coll. no. 1827—near Tres Marias, Morelos, Mexico.
Head, lateral and dorsal views. Actual head length 10.2 mm.



Taylor, Edward Harrison. 1933. "Two new Mexican skinks of the genus Eumeces." *Proceedings of the Biological Society of Washington* 46, 129–138.

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