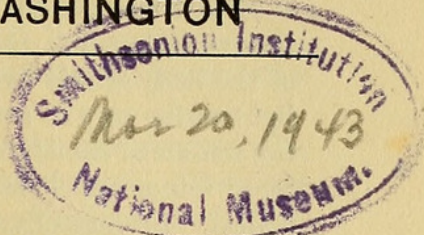


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTONDESCRIPTIONS OF NEW SPECIES AND SUBSPECIES
OF MEXICAN SNAKES OF THE GENUS RHADINAEA.BY HOBART M. SMITH.¹

The recent review of Mexican *Rhadinaea* by Bailey² has greatly simplified the study of this interesting group of snakes. Collections recently acquired for the U. S. National Museum and the E. H. Taylor-H. M. Smith collection have notably augmented the meager series previously available of most species. The present study is based upon these collections and, as predicted by Bailey, has revealed a number of forms as yet unnamed.

I am indebted to Dr. E. H. Taylor for his very generous loan of specimens, for advice with the various problems that have arisen, and for the photographs here reproduced. The drawings were executed by my wife. The study was completed, and a portion of the material was collected, during tenure of the Walter Rathbone Bacon Traveling Scholarship.

Rhadinaea hesperia hesperia Bailey.

Diagnosis.—Ventrals 155 to 166 (in specimens I have seen; Bailey gives a range of 151 to 179 in whole species); caudals 109 to 136; temporal and dorsolateral light stripes separate; latter anteriorly on sixth and adjacent halves of fifth and seventh rows; usually a secondary dark stripe on seventh scale row (pigment abruptly terminating at that point, if stripe is absent), occasionally a similar stripe on eighth row; evidence of light border to vertebral dark stripe present; light stripes (dorsolateral) present on tail; sides below lateral dark stripe usually evenly pigmented; dorsolateral light stripes curving laterally at nape, not angular; temporal stripe not reaching lower secondary temporal.

Material examined.—Five specimens: U.S.N.M. 15429, "Guanajuato"; U.S.N.M. 20166, Cuernavaca, Morelos; EHT-HMS 5441-2, Hda. El Sabino, near Uruapan, Michoacán; EHT-HMS 23547, five miles north of Chilpancingo, Guerrero.

¹ Published by permission of the Secretary of the Smithsonian Institution.

² The Mexican snakes of the Genus *Rhadinaea*. Occ. Papers Mus. Zool. Univ. Mich., no. 412, 1940, pp. 1-19, pls. 1-2.

Remarks.—The material available fortunately represents most of the extremes of distribution so far as known. The El Sabino specimens show a trend toward *hesperioides*, in possessing secondary stripes on the lateral scale rows. All others are more or less uniform, having the sides of the body nearly evenly pigmented, the inner border of the dorsolateral light stripe on the seventh scale row, lateral dark stripe passing through the middle of the fifth scale row, distinct light stripes on the tail, and other more minor peculiarities which differentiate them from *hesperioides* and *baileyi*. Ecologically, the area represented by these specimens is more or less a unit, with the exception of the Chilpancingo area. Specimens from this area may eventually prove distinct from others of the subspecies.

***Rhadinaea hesperia hesperioides*, subsp. nov.**

(Fig. 1.)

Holotype.—U. S. National Museum 67373, male, from Magdalena, Jalisco, collected by C. C. Elliott, June 23, 1924. *Paratypes.*—U. S. N. M. 46456, Plomosas, Sinaloa; U. S. N. M. 15430, labelled "Guanajuato," but in all probability from the vicinity of Guadalajara (from Dugès).

Diagnosis.—Like *hesperia*, except lateral stripe on fourth and fifth scale rows; inner border of dorsolateral light stripe anteriorly on sixth scale row; a light stripe on adjacent halves of second and third scale rows, most distinct anteriorly; a dark line, extending the full length of body, on second scale row.

Description of holotype.—Rostral much broader than high, portion visible from above about half length of internasals; latter three-fifths length of prefrontals; frontal much longer (3.7 mm.) than its distance from tip of snout (2.4 mm.), subequal to length of parietals on median line; nasal completely divided; a ridge bordering naris below; prefrontals extending onto sides of head; a large loreal; a large preocular and a small subpreocular; two large postoculars; temporals 1+2; supralabials eight, fourth and fifth entering eye, seventh somewhat the largest; ten infralabials, five in contact with anterior chinshields, which are separated from mental; chinshields subequal in size.

Dorsals in 17 rows throughout, smooth; ventrals 154; caudals 131; analdivided.

Lateral dark stripe on lower portion of fifth scale row; upper (inner) portion of fourth scale row also dark, the two stripes partially fused and appearing much as one to the naked eye; a dim, dotted dark stripe along inner portion of third scale row; a light stripe, most distinct anteriorly, on adjacent halves of second and third scale rows; a distinct, continuous dark stripe on second scale row; a less distinct dark stripe on first scale row; ends of ventrals stippled.

Inner edge of dorsolateral light stripe well defined anteriorly, on inner portion of sixth scale row; dim secondary dark lines on seventh and eighth rows; a fairly distinct light band adjoining vertebral stripe, occupying adjacent edges of vertebral and paravertebral scale rows; a continuous dark stripe, the most distinct on body, following vertebral scale row; tail with fairly well-defined dorsolateral light bands,

Light temporal stripe separated by two scale lengths from dorsolateral light stripes; temporal stripe reaching to naris; a dark line through upper portion of supralabials; a longitudinal series of black dots crossing somewhat below middle of supralabials; a few dark flecks on mental and anterior infralabials.

Variation.—In the Plomosas and Guadalajara specimens, respectively, the ventrals are 158 and 150, caudals 110 (♀) and tail broken. There are nine supralabials in the latter, and no subpreocular on one side in the former. The pattern is almost identically that of the type, except that the stripes on rows one, three, seven and eight are not or scarcely evident.

Remarks.—This subspecies has apparently the same scutellation as *hesperia*, from which it differs only in pattern. The present subspecies can easily be recognized, however, by the confinement anteriorly of the dorsolateral stripes to the fifth and sixth rows (involves all of sixth as well as half of each adjacent row in *hesperia*), and by the presence of a distinct light stripe (most distinct anteriorly) on adjacent halves of the second and third rows, bordered below by a distinct, continuous dark stripe.

The present form is considered a subspecies because of a development of secondary lines on the lateral scale rows in specimens of *hesperia* from El Sabino, which is geographically near *hesperioides*.

***Rhadinaea hesperia baileyi*, subsp. nov.**

(Fig. 2.)

Holotype.—EHT-HMS 5444 male, El Treinte, Guerrero, collected by E. H. Taylor.

Diagnosis.—Like *hesperia*, except lateral stripe on lower edge of fifth scale row; inner border of dorsolateral light stripe anteriorly on sixth scale row. No lateral light or dark stripes, even anteriorly, on first to fourth scale rows; a nearly transverse light bar at nape, connected with dorsolateral stripes at an angle; light temporal stripe extending diagonally backward, terminating on lower secondary temporal; no distinct light stripes on tail.

Description of holotype.—Rostral much broader than high, portion visible from above about half length of median internasal suture; internasals two-thirds length of prefrontals; length of frontal (3.2 mm.) somewhat less than its distance from tip of snout (2.9 mm.), shorter than parietals on median line (3.5 mm.); nasal very large, posterior section larger than anterior, completely divided, a ridge below naris; a large, square loreal; a large preocular and a small presubocular; two postoculars; temporals 1+1, 1+2; eight supralabials, fourth and fifth entering eye, sixth and seventh subequal in size; ten infralabials, five in contact with anterior chinshields, which are separated from mental; posterior chinshields somewhat longer than anterior.

Dorsals in 17 rows throughout, smooth; ventrals 153; anal divided; caudals 120.

A narrow lateral black stripe on lower part of fifth scale row; outer scale rows and ends of ventrals rather evenly pigmented; pigment on upper

part of fifth row forming coarse reticulae, but not uniting with the black lateral stripe, which skips the inner edges of the scales of the fourth row which interlace with the outer edges of the scales of the fifth row; no evidence anteriorly of light or dark stripes on rows one to four; inner edge of dorsolateral light stripe well defined anteriorly, placed on inner edge of sixth scale row; inner edge of dorsolateral light line indeterminate posterior to neck, no light lines evident or indicated on tail; a diagonally placed light bar on nape, extending from a point one scale length behind angle of mouth to anterior edge of dorsolateral light lines, with which the bar scarcely connects, at a sharp angle; a continuous black streak on middle of vertebral scale row; adjacent rows evenly pigmented, gradually merging with dorsolateral light stripes; temporal stripes not extending directly posterior, but diagonally to the lower secondary temporal, where they terminate; anterior to orbit temporal stripe extends to nasal plate; a dark line through upper edges of supralabials, posteriorly passing through lower part of eighth supralabial; labial border unmarked; a few, very small scattered flecks on chin.

Remarks.—This peculiar specimen holds in common some characters of *hesperioides*, others of *hesperia*, and certain peculiarities of its own. Due to the fact that the specimen comes from an area distinct ecologically from those occupied by either *hesperia* or *hesperioides*, I believe its peculiar characters are not anomalous nor variations of those of the other two forms.

From *hesperia* the present form is easily distinguished by restriction anteriorly of the dorsolateral stripes to the fifth and sixth scale rows; it also is notable in lacking secondary stripes, present in *hesperia* at least on the seventh scale row; there are no light stripes on the tail; the lateral dark stripe is placed on the lower part of the fifth scale row, and is interrupted by scales of the fourth (passes through middle of fifth in *hesperia*). From *hesperioides* it differs in absence of a dark stripe along the second scale row, absence of a light stripe along adjacent halves of the second and third scale rows, restriction of lateral stripe to fifth row, and in the peculiar character of the transverse light bar on the nape.

***Rhadinaea forbesi*, sp. nov.**

(Fig. 3.)

Holotype.—U. S. National Museum No. 110365, male, collected at Tequeyutepec, seven miles west of Jalapa, Veracruz, March 23, 1940.

Paratypes.—U. S. N. M. No. 110364, topotype; U. S. N. M. 29124, without locality; and EHT-HMS (HMS field No. 13211), topotype.

Diagnosis.—Temporal stripe diagonal, extending to corner of mouth, or to upper edge of last supralabial; sides of body dark, including tips of ventrals; a black stripe on fourth scale row, involving edges of adjacent rows erratically; a broken white line (dotted) on fifth row; a dark stripe on median row, narrow or involving edges of adjacent rows; usually two preoculars (a presubocular); ventrals 140 to 150; caudals 63 to 64 (males).

Description of holotype.—Eight supralabials, fourth and fifth entering orbit on one side, third also on other; on the latter side, one preocular

(lower fused with third labial), two on other side; two postoculars, upper much the larger; temporals 1+2+3, anterior in contact with both postoculars; nine infralabials, the first in contact with its mate; six labials in contact with chinshields, five with anterior, two with the posterior.

Scales in 17 rows; ventrals 143; caudals 64; supra-anal ridges distinct.

Outer edges of ventrals to inner edge of third row black, the dorsal scales with numerous tiny lighter flecks; a dark line following fourth row, encroaching on third and fifth; bases and median area of scales in fifth row white, forming a dotted line; median and edges of adjacent rows black; median black stripe replaced by a white stripe on three scales posterior to parietals; area between fifth and median rows dark, becoming darker medially. Tips of subcaudals and ventrals black; a small black spot in the center of each anterior upper and lower labial, also on mental.

A dark-edged white line from upper edge of orbit to edge of eighth supralabial, confluent with white of ventral surface; top of head brown; labials, except upper edges, black; lateral black stripes passing through eyes and confluent with each other around end of snout, a narrow black stripe passing through rostral.

Hemipenis³ extending to seventh caudal (not everted); sulcus divided at fifth; distal third calyces; about eighteen medium-sized hooks; no large spines or hooks; tip capitate.

Maxilla with 17 subequal teeth, followed by a short diastema and three enlarged teeth.

Variation.—All three paratypes have two preoculars (presuboculars). The infralabials are 10–10 in one. The coloration is essentially similar in all. The two most notable variations in color pattern are in width of the median dark stripe, and in the posterior extension of the temporal stripe. In two specimens (the paratypic topotypes) the median stripe is very narrow and runs along the middle of the median row, while in the type and other paratype it occupies the edges of the paravertebral as well as the median row. In one of the latter (No. 29124) it is lighter in the middle of the vertebral row. In one paratype the light temporal stripe extends to the ventral color, while in the other two it terminates at the posterior edge of the eighth labial. In both of the latter it practically fuses with the dorsolateral light stripe.

In No. 13211, the ventrals are 140, caudals 63, male; in 110364, ventrals 150, caudals 57+, female; in 29124, ventrals 143, caudals 60+, male.

Remarks.—The three Tequeyutepec specimens were found under stones and logs after a heavy rain during the dry season.

This species differs from any other known from Mexico in the diagonal position of the temporal stripe, and in features of the color pattern. Its ventral counts are the lowest of Mexican species, except *decorata*.

The species is named for Mr. Dyfrig McH. Forbes, who aided in the discovery of these three specimens, and who was responsible for a great share of our success in collecting in Veracruz and adjacent states.

³ Descriptions of hemipenis and maxilla from No. 29124.

Rhadinaea crassa, sp. nov.

(Figs. 4, 5.)

Holotype.—EHT-HMS 5526, male, collected at Durango, Hidalgo, by E. H. Taylor. *Paratypes*. EHT-HMS 5443, La Placita, south of Jacala, Hidalgo; U. S. Nat. Mus. 110366, Barranca de los Horcones, ten kilometers south of Durango, Hidalgo (badly crushed road specimen); EHT-HMS 23548, Ciudad del Maiz, San Luis Potosí.

Diagnosis.—Ventrals 166 to 173; caudals 98 to 106; eight supralabials; temporal stripe fused with dorsolateral; a narrow dark stripe along middle of fourth, edges of fourth and fifth, or on lower half of fourth scale row; sides below lateral stripe uniformly pigmented; a small dark spot at ends of each ventral; a dark, secondary streak along inner edge of sixth scale row; a continuous dark line on middle of vertebral scale row; a light area, indistinct posteriorly, anteriorly bounded by a dark streak along outer edge of eighth scale row, bordering vertebral stripe on each side; a light middorsal streak on nape, black bordered.

Description of holotype.—Rostral much broader than high, portion visible from above a little less than half length of internasals; latter a little more than half length of prefrontals, which extend somewhat onto sides of head; length of frontal (3 mm.) greater than its distance from tip of snout (2.7 mm.), subequal to length of median parietal suture; a large nasal completely divided; a square loreal; one preocular; no presubocular; eight supralabials, eighth slightly the largest, fourth and fifth entering eye, third separated from eye by contact of preocular and fourth supralabial; temporals 1+2; infralabials ten, five in contact with anterior chinshields, which are separated from mental; posterior chinshields subequal to anterior in length.

Dorsals in 17 rows throughout, smooth; ventrals 168; anal divided; caudals 106.

Maxillary teeth 17+2 (in paratypes 5443 and 23548).

Lateral dark stripe narrow, involving adjacent edges of fourth and fifth scale rows; sides below this and ends of subcaudals uniformly stippled; a dark spot at ends of ventrals; a light stripe on adjacent portions of fifth and sixth scale rows, occupying most of these rows, its inner border fairly well defined throughout length of body, very distinct anteriorly; a continuous dark stripe on middle of vertebral scale row, bordered on either side by a light streak, which is distinct anteriorly, less distinct posteriorly, and which involves most of the paravertebral scale row; remainder of dorsal area light brown. Dorsolateral light lines continuous with temporal stripes, which diverge somewhat in temporal region and extend through upper part of rostral, where one connects with the other; upper edges of supralabials dark, remainder white, save a few irregular dark spots arranged more or less in a line passing through the middle of the labials; a light median nuchal stripe, dark-edged; a few irregular, dark flecks and spots on mental and infralabials.

Tail with ends of caudals dark; a narrow lateral stripe; area between ends of caudals and lateral dark stripe light brown; a dorsolateral light

stripe, inner edge moderately well defined, but not sharp; dorsal area light brown, edges slightly darker; a middorsal black line, somewhat reticulate.

Variation.—The ventrals and caudals of Nos. 5443, 23548 and 110366 are, respectively: 173, 98 (♀); 166, 93 (♀); 173, ? (♀). A presubocular which separates the third infralabial from orbit occurs in two (indeterminate in 110366).

In No. 5443, the lateral stripe involves the lower half of the fourth, and the upper edge of the third scale rows; inner edge of dorsolateral stripe, and disposition of other dorsal stripes, same as in type; ends of ventrals dark, as in type.

In No. 23548 the stripes are disposed exactly as in the type; the ends of the ventrals are spotted; the tail, however, lacks a middorsal black stripe on distal portion.

In No. 110366, the dorsolateral dark stripes pass through the middle of the fourth scale row; the dorsal stripes appear to be the same as in the type; the ends of the ventrals are spotted.

Remarks.—This species bears a resemblance to *gaigeae*, to which it is closely related. It differs from *gaigeae* in presence of dark spots at the tips of the ventrals, light lines bordering vertebral dark stripe, and perhaps in number of maxillary teeth (17+2 in two *crassa*; 14+2 in two *gaigeae* *fide* Bailey).

The specimens available of *crassa* may represent the extremes in variation of that species. The specimen from La Placita resembles *quinquelineata* in position of the lateral dark stripe (but differs in numerous other details of pattern), while the specimen from Barranca de los Horcones agrees with *gaigeae* in position of the lateral stripe. Both *crassa* and *quinquelineata* have a short, white middorsal nuchal stripe; *gaigeae* may have.

EXPLANATION OF FIGURES ON PLATE III.

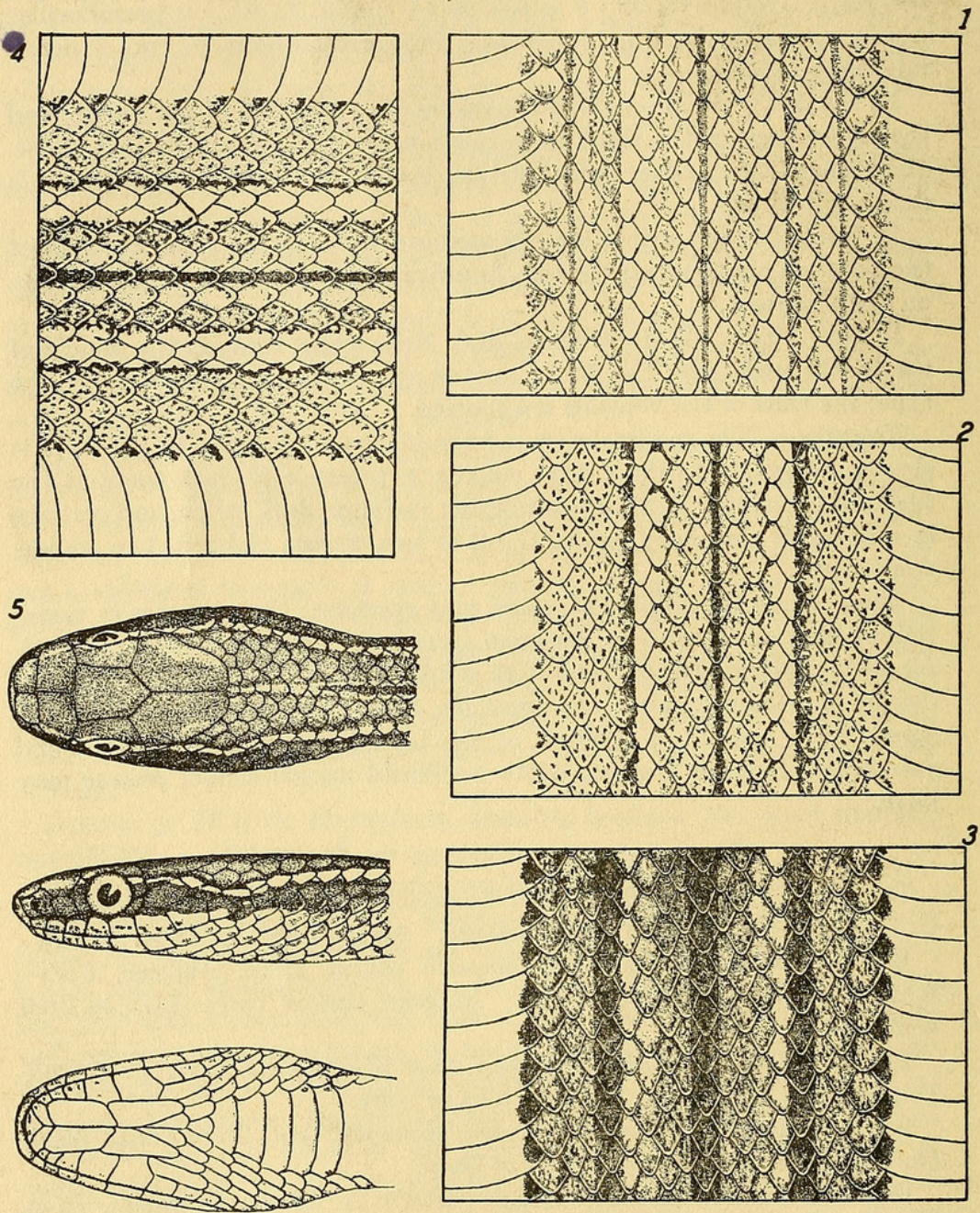
Fig. 1. Pattern of *Rhadinaea hesperia hesperioides*, from holotype, U. S. N. M. 67373, Magdalena, Jalisco. Anterior part of body.

Fig. 2. Pattern of *Rhadinaea hesperia baileyi*, from holotype, EHT-HMS 5444, El Treinte, Guerrero. Anterior part of body (15th to 24th ventrals).

Fig. 3. Pattern of *Rhadinaea forbesi*, from holotype, U. S. N. M. 110365, Tequytepec, Veracruz. Anterior part of body.

Fig. 4. Pattern of *Rhadinaea crassa*, from holotype, EHT-HMS 5526, Durango, Hidalgo. Anterior part of body.

Fig. 5. Cephalic scutellation and pattern of *Rhadinaea crassa*, from holotype.





Smith, Hobart M. 1942. "Descriptions of new species and subspecies of Mexican snakes of the genus *Rhadinaea*." *Proceedings of the Biological Society of Washington* 55, 185–192.

View This Item Online: <https://www.biodiversitylibrary.org/item/107702>

Permalink: <https://www.biodiversitylibrary.org/partpdf/46103>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Biological Society of Washington

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.