

**AMBLYOMMA ANTILLORUM KOHLS, 1969 (ACARI: IXODIDAE):  
DESCRIPTION OF THE IMMATURE STAGES FROM THE  
ROCK IGUANA, *IGUANA PINGUIS* (SAURIA: IGUANIDAE)  
IN THE BRITISH VIRGIN ISLANDS**

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*Abstract.* — The nymph and larva of *Amblyomma antillorum* are described and illustrated for the first time from specimens collected on the endangered rock- or Anegada iguana, *Iguana pinguis* on Anegada Island, British Virgin Islands.

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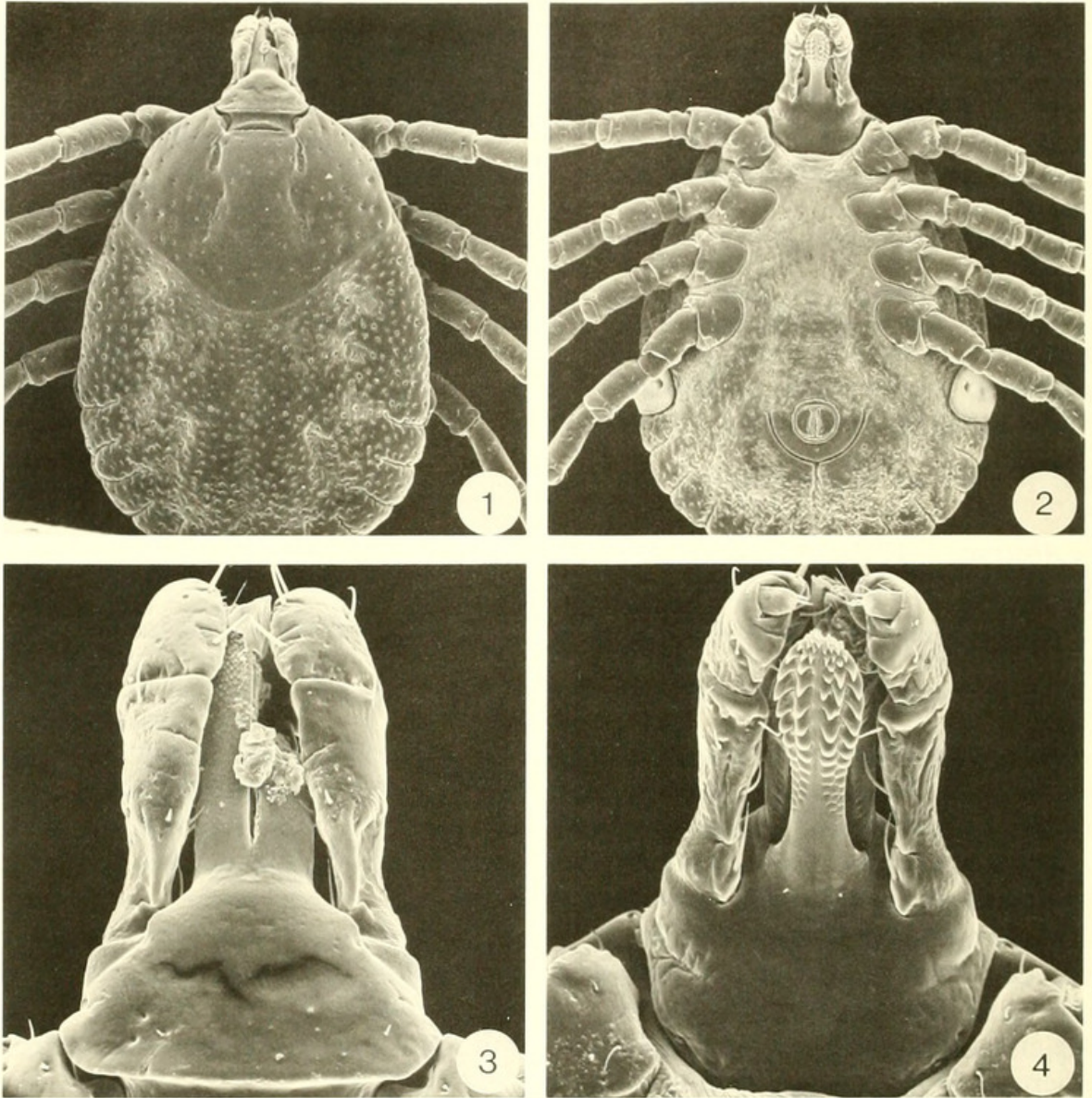
On Caribbean islands, iguana-feeding ticks of the genus *Amblyomma* comprise a small, relatively compact group of four species: *Amblyomma albopictum* Neumann, *A. antillorum* Kohls, *A. cruciferum* Neumann, and *A. torrei* Vigeuras. *Amblyomma dissimile* Koch is only found occasionally on iguanas. It is primarily a parasite of snakes and also parasitizes Amphibia.

Herein are described the immature stages of *Amblyomma antillorum* Kohls, a parasite of the rock iguana, *Iguana pinguis* (Barbour). The descriptions are based on 2 nymphs and 3 larvae, the only specimens available. Measurements (mm) are given for all specimens. Preparation of immature stages for scanning electron microscopy follows the method of Corwin et al. (1979).

***Amblyomma antillorum* Kohls**

Nymph (Figs. 1-8). — *Body* (Figs. 1, 2). Length from scapular apices to posterior body margin 1.13, 1.64; width 0.86, 1.12, widest at level of spiracular plates. *Capitulum* (Figs. 3, 4). Length from posterior margin of cheliceral sheaths to posterior capitular margin 0.12, 0.11; width at level of scapulae 0.21, 0.20. *Basis capituli* dorsally (Fig. 3) ca. 2× as wide as long, triangular, cornua absent. [The specimen illustrated in Fig. 3 shows the basis capituli with two surface indentations centrally. The other nymphal specimen does not show this artifact.] *Basis capituli* ventrally (Fig. 4) with posterior margin convex. *Palpi* (Figs. 3, 4) 0.25, 0.23 long, segment 2 ca 2× as long as segment 3; segments decreasing in size in the order 2, 3, 1, 4; setae as illustrated. *Hypostome* bluntly rounded and bulbous anteriorly; dental formula 2/2 throughout with several minute denticles forming an apical corona; ca. 6 teeth in each file diminishing to crenulations basally. *Scutum* (Fig. 1, 5). Length 0.32, 0.33; width 0.41, 0.45; outline as illustrated; evenly distributed; *cervical grooves* short, deep, directed posteriorly; *eyes* at lateral scutal angle, not bulging or encircled by coloration. *Spiracular plate* (Fig. 6) subcircular with slight



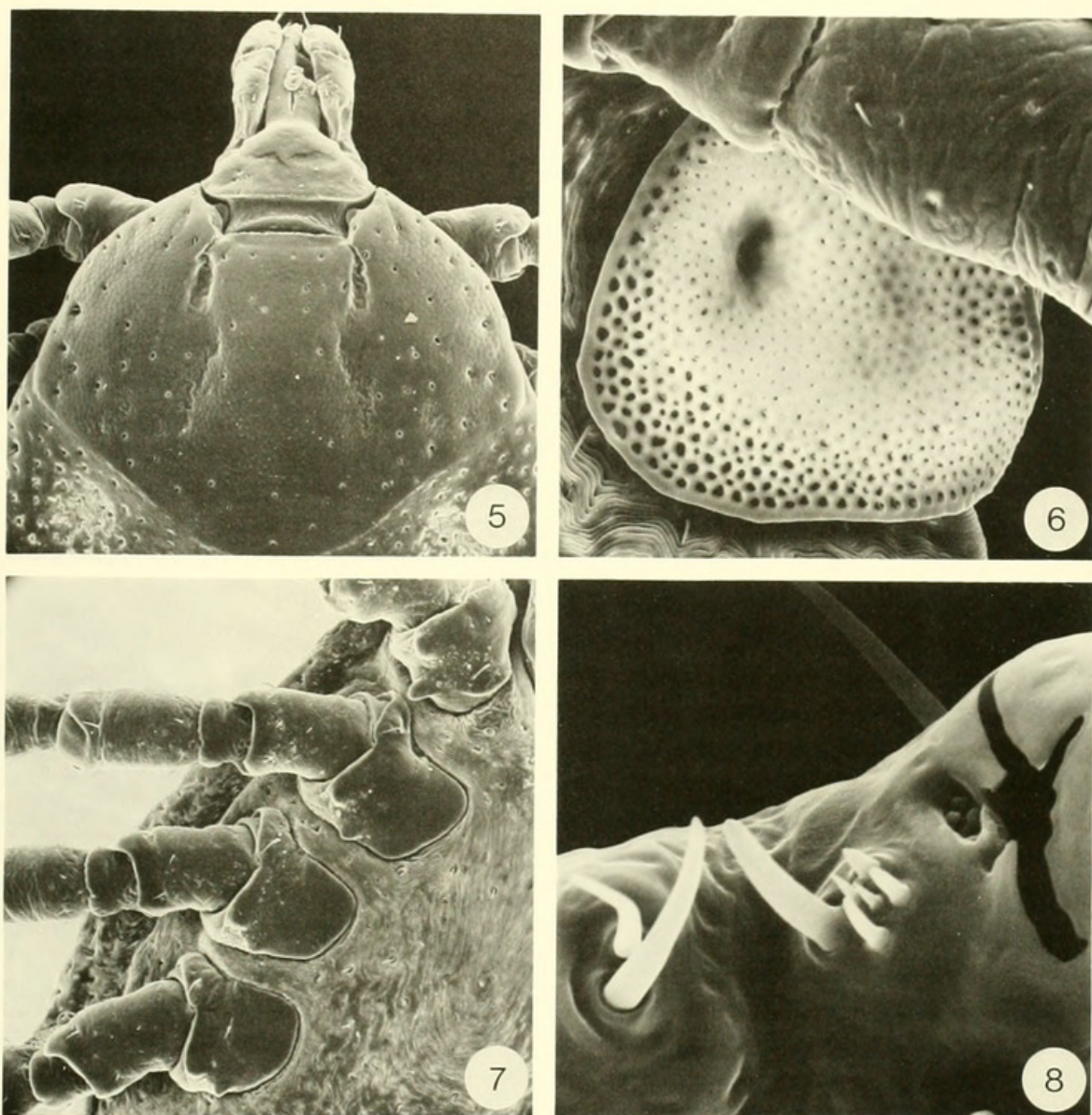


Figs. 1-4. *Amblyomma antillorum* nymph (RML117481). 1, Dorsal view (64 $\times$ ). 2, Ventral view (64 $\times$ ). 3, Capitulum, dorsal view (318 $\times$ ). 4, Capitulum, ventral view (212 $\times$ ).

dorsal prolongation. *Legs* (Figs. 7, 8). Coxa I-IV each with two spurs, the externals slightly bulbous, the internals more pointed and decreasing in size from I-IV. Trochanters lack spurs. Tarsus I 0.26, 0.24 long; 0.07, 0.07 wide. Haller's organ (Fig. 8) with roof bifurcate; anterior pit setae number 6.

*Larva* (Figs. 9-14). — *Body* (Fig. 9) partially engorged; length from anterior scutal margin to posterior body margin 0.82, 0.92, 1.05; width 0.55, 0.59, 0.67 widest at level of coxae IV. Dorsal body setae number 10 pairs; 2 pairs central dorsals, 8 pairs marginal dorsals. Ventral setae 12 pairs and 1 pair on anal valves; 3 pairs sternals; 2 pairs preanals; 2 pairs premarginals and 5 pairs marginal ventrals. *Capitulum* (Figs. 10, 11). Length from posterior margin of cheliceral sheaths to posterior margin of basis capituli 0.65, 0.85, 0.81; width 0.12, 0.15, 0.14. *Basis capituli* dorsally (Fig. 10) with posterior margin straight medially then angling anterolaterally, cornua absent. Ventrally (Fig. 11) with posterior margin broadly



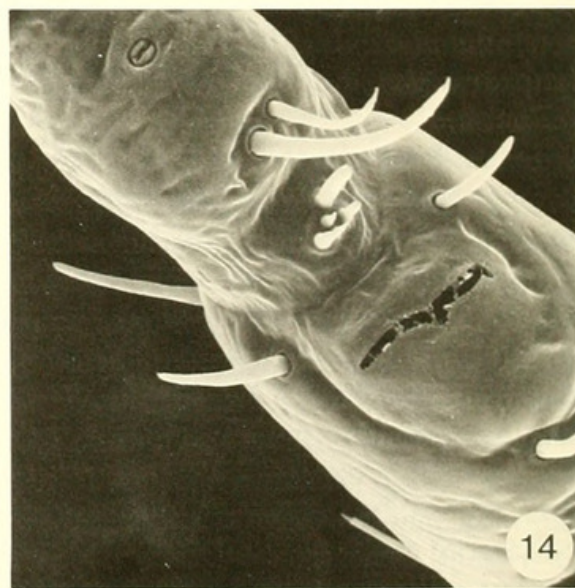
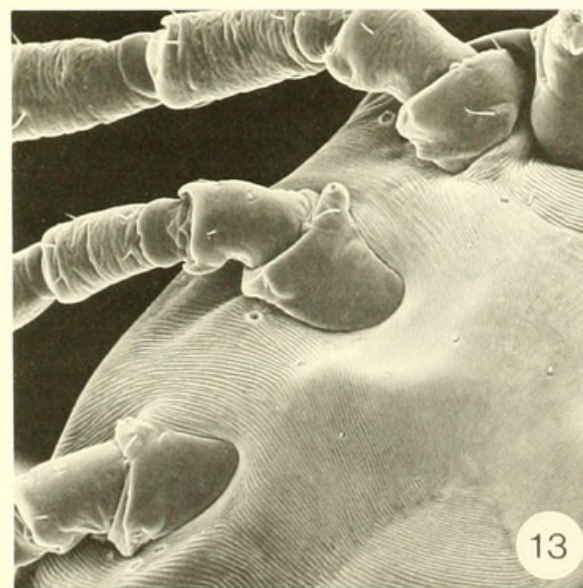
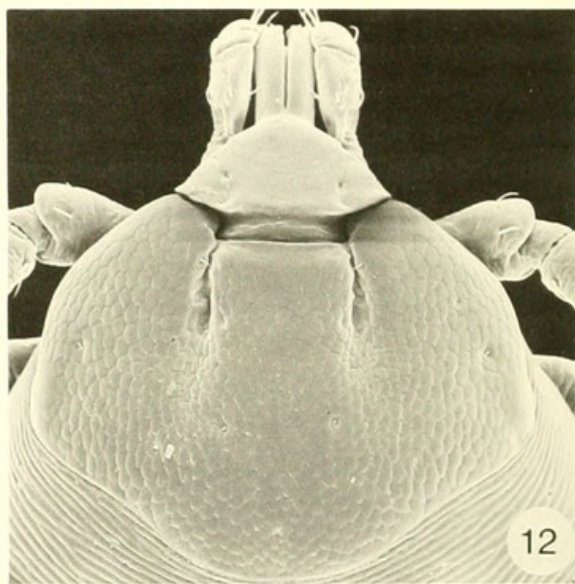
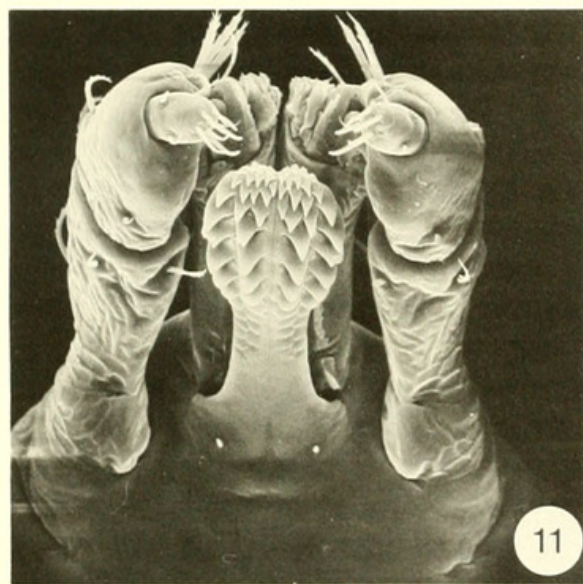
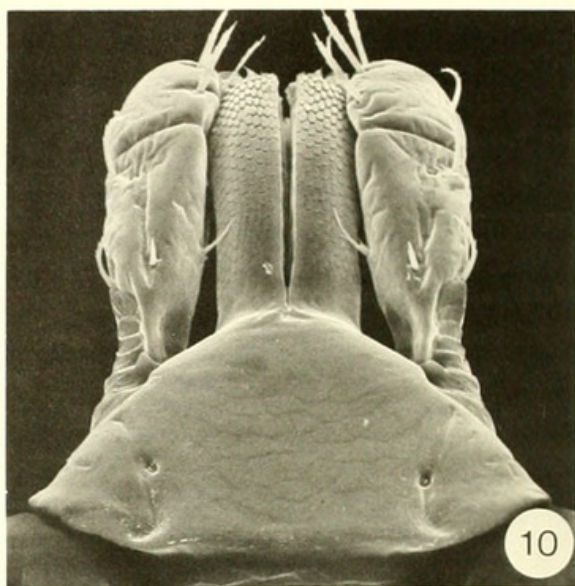
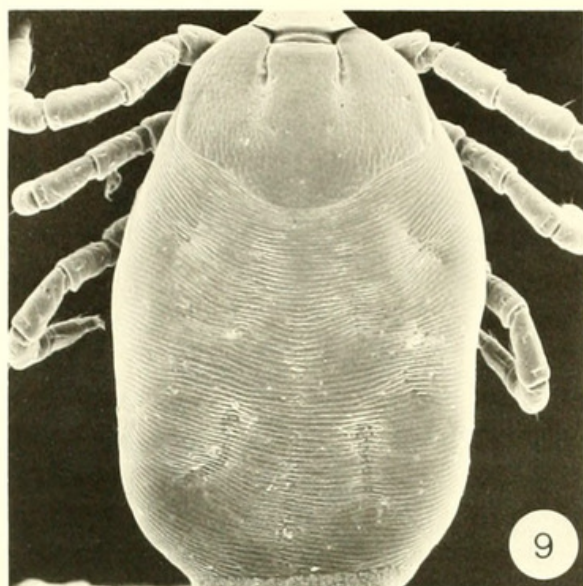


Figs. 5–8. *Amblyomma antillorum* nymph (RML117481). 5, Scutum (106 $\times$ ). 6, Spiracular plate (530 $\times$ ). 7, Coxae I–IV (212 $\times$ ). 8, Haller's organ (2120 $\times$ ).

rounded. Posthypostomal setae 1 minute pair. *Palpi* 0.12, 0.15, 0.14 long, suture between segments 2 and 3 distinct; setae 0 on segment 1, 4 dorsally and 2 ventrally on 2, 5 dorsally and 3 ventrally on 3, ca 9 on segment 4. *Hypostome* (Fig. 11) bluntly rounded anteriorly with a corona of fine denticles; dentition 2/2 throughout length with crenulations extending posteriorly. *Scutum* (Figs. 9, 12) 0.30, 0.29, 0.30 long; 0.41, 0.40, 0.41 wide; setae 3 pairs. *Cervical grooves* short deep parallel troughs. *Legs* (Figs. 13, 14) Coxae I–III each with a single, small, truncate spur bearing a small to minute seta posteriorly [the seta is broken off on spur of coxa I in Fig. 13]. Coxal setae, 3 on I, 2 on II and III. Tarsus I 0.15, 0.16, 0.17 long; 0.05, 0.05, 0.06 wide. Haller's organ (Fig. 14) with 5 anterior pit setae.

**Material examined.**—26 ♂, 1 ♀, 2N, 3L *Amblyomma antillorum* (RML117481) ex *Iguana pinguis* (♀) collected from dewlap, cloaca and hind axillary areas, Anegada Island (18°45'N, 64°20'W), British Virgin Islands, 30 Jul. 1984, James D. Lazell, Jr.





Figs. 9-14. *Amblyomma antillorum* larva (RML117481). 9, Dorsal view (85 $\times$ ). 10, Capitulum, dorsal view (424 $\times$ ). 11, Capitulum, ventral view (530 $\times$ ). 12, Scutum (212 $\times$ ). 13, Coxae I-III (212 $\times$ ). 14, Haller's organ (1272 $\times$ ).



In addition to Anegada Island, *A. antillorum* is also found on *Iguana delicatissima* on the island of Dominica (Kohls, 1969). We have recently found a collection of 11 ♂ *A. antillorum* (RML115734) in the F. C. Bishopp tick collection (Bishopp 15182) from an iguana, East Caicos Island, Bahama Islands, 28 July 1930.

#### SPECIES RELATIONSHIPS

Little is known about the immatures of Caribbean reptile-feeding *Amblyomma* species. The immature stages of *A. albopictum* are unknown and larvae of both *A. cruciferum* and *A. torrei* are undescribed. Thus, only the larva of *A. antillorum* is known for this group. The nymph of *A. antillorum* is inornate, which separates it from the ornate nymphs of *A. cruciferum* and *A. torrei*.

#### REMARKS

The host of *Amblyomma antillorum*, *Iguana pinguis*, is found only on Anegada of the 46 named islands forming the artificial political entity of the British Virgin Islands. This saurian is a highly endangered species, a victim of competition with goats and other feral livestock, predation by dogs and cats, and habitat destruction and hunting by man. Because these iguanas receive no protection, a program was begun in July, 1984, to relocate them from Anegada to Guana Island, a privately owned wildlife sanctuary. *Iguana pinguis* was previously resident on Guana Island but was eradicated by agriculture prior to 1900 (Lazell, pers. comm.).

The host of *Amblyomma antillorum* on East Caicos Island is surely *Iguana carinata carinata*. This iguana was listed in the genus *Cyclura* by Schwartz and Thomas (1975) as occurring on Big Iguana Cay off East Caicos Island.

*Iguana pinguis* is more commonly known as *Cyclura pinguis*, but I have followed Lazell (1983) who considered both the genera *Cyclura* and *Brachylophus* to be synonyms of *Iguana*.

#### ACKNOWLEDGMENTS

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#### LITERATURE CITED

- Corwin, D., C. M. Clifford, and J. E. Keirans. 1979. An improved method for cleaning and preparing ticks for examination with the scanning electron microscope. *J. Med. Entomol.* 16: 352-53.
- Kohls, G. M. 1969. A new species of *Amblyomma* from iguanas in the Caribbean (Acarina: Ixodidae). *J. Med. Entomol.* 6: 439-42.
- Lazell, J. D., Jr. 1983. Biogeography of the herpetofauna of the British Virgin Islands, with description of a new *Anole* (Sauria: Iguanidae), pp. 99-117. In A. G. J. Rhodin and K. Miyata, eds., *Advances in Herpetology and Evolutionary Biology: Essays in Honor of Ernest E. Williams*. Museum of Comparative Zoology, Cambridge, xix + 725 pp.
- Schwartz, A. and R. Thomas. 1975. Check-list of West Indian amphibians and reptiles. *Carnegie Mus. Nat. Hist. Spec. Publ.* (1): 216 pp.



Keirans, James E. 1985. "Amblyomma antillorum Kohls, 1969 (Acari: Ixodidae): description of the immature stages from the Rock Iguana, *Iguana pinguis* (Sauria: Iguanidae) in the British Virgin Islands." *Proceedings of the Entomological Society of Washington* 87, 821–825.

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