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VOLUME 99, NUMBER 12

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PRESIDENTIAL CRUISE
OF 1938

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CITY OF WASHINGTON
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The mites which are to be discussed in this paper were collected by Dr. Waldo L. Schmitt in the debris from some boobies' (*Sula leucogaster nesiotus* Heller and Snodgrass) nests on Clipperton Island, July 21, 1938. As might be expected from such an environment, there were parasitic as well as free-living species present in the collection. The writer wishes to thank Dr. Schmitt for the opportunity to study these interesting specimens, J. F. Mangrum, Lincoln Memorial University, for mounting a good number of the specimens, and Dr. H. E. Ewing for critically inspecting the material with the author.

Small animals, such as mites, which have very limited powers of locomotion, present an interesting problem when found on oceanic islands. This problem is their origin. It is probable that the parasitic species found were transported to the nesting sites of the birds by the boobies themselves. As for the free-living species, the above-mentioned explanation or other means such as man, wind, or floating logs are equally probable.

The species found were: *Eulaelaps roosevelti*, n. sp. (named in honor of President Franklin D. Roosevelt who made the expedition possible), *Atricholaelaps clippertonensis*, n. sp., *Asca quinquesetosa*, n. sp., two to four unidentified species of the genus *Uropoda*, *Scheloribates indica* Oudemans, 1917, and *Scheloribates fimbriatus calcaratus* Jacot, 1934.

Species of the genus *Eulaelaps* are usually parasitic upon small mammals and are often found in their nests. However, Pearse (1930) found one parasitic on a crab in Japan. Recently, Fonseca (1935) reported a new species of the genus, *Eulaelaps vitzthumi*, from Brazil. *Eulaelaps* is also known from Europe, and hence it may be considered as having a world-wide distribution, as do a great number of acarid genera. Concerning the geographic origin of *E. roosevelti*, nothing can be said; as for its mode of transportation to Clipperton, it has most likely come with its host, which is probably the booby *Sula leucogaster nesiotus* Heller and Snodgrass, with which it was found associated.

Many species of the genus *Atricholaclaps* are found as parasites of rodents in North and South America. It is probable that *A. clipper-tonensis* is derived from the American continent. Its method of transportation to the islands is probably the same as that employed by *E. roosevelti*.

The Uropodids and *Asca quinquesetosa* are not parasitic nor can any statement be made as to their probable origin. The other two non-parasitic species, *Scheloribates indica* and *Scheloribates fimbriatus calcaratus*, were found by Jacot (1934) on the Hawaiian Islands. Since both these mites originally came from Asia, it is probable that those on Clipperton were derived from Hawaii.

DESCRIPTION OF NEW SPECIES

Family ASCAIDAE

ASCA QUINQUESETOSA, n. sp.

Female (fig. 1).—Length from posterior margin to tip of hypostome, 0.44 mm. Width, maximum, 0.25 mm. Chelicerae chelate with a single hair on immovable finger opposite tooth, movable and immovable finger each with a single tooth and toothlike hooked ends, hand 0.22 mm. long. Palps, of usual form, 0.11 mm. long from base of trochanter to tip, longest segment palp trochanter, single bristle on ventral side of immovable palp coxa. Epistome two-pronged, one-half length of hypostome. Hypostome 0.07 mm. long with three pairs of setae, extends to anterior level of palp trochanter. Tritosternum, barbed, 0.05 mm. long. Legs stout, none longer than body, each with caroncle and claws, leg II stoutest, legs I and IV longest and subequal, leg III shortest, setae on legs fine below, larger above. Sternal plate extends from behind coxae I to middle of coxae III, 0.11 mm. long, 0.07 mm. maximum width; first pair of sternal hairs in anterior lateral region of plate, first sternal pores concave posteriorly just below first pair of sternal hairs; second pair of sternal hairs opposite middle of coxae II, second pair of sternal pores lateral between coxae II and III; last pair of sternal hairs opposite middle of coxae III, last sternal pores at posterior lateral margin of sternal plate. Metasternal plates lightly chitinized but clearly defined, triangular, base 0.03 mm., altitude 0.01 mm., metasternal hair in center of each plate. Genital opening, transverse slit between metasternal plates, concave posteriorly, 0.04 mm. wide. Genital plate, a regular trapezoid with anterior and posterior margins parallel, anterior margin 0.04 mm. behind the sternal plate and 0.04 mm. wide, posterior margin

0.06 mm. wide, 0.04 mm. long; genital hairs lateral, 0.01 mm. anterior to posterior margin of genital plate. Ventral and anal plates fused, sculptured, irregularly oval, truncate posteriorly, less than

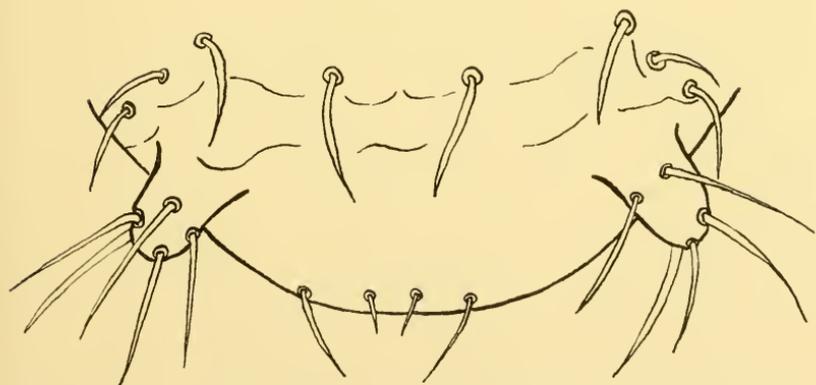
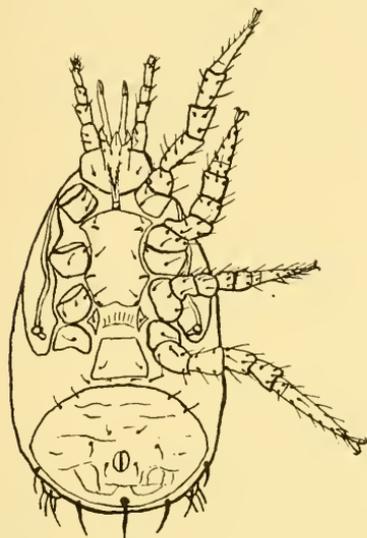


FIG. 1.—*Asca quinquescetosa*, n. sp. ♀. Ventral view. Chelicera.
Posterior dorsum.

0.01 mm. behind genital plate, 0.14 mm. long, 0.20 mm. wide; two pairs of hairs on anterior lateral margin, three pairs of hairs anterior and lateral to the anal opening, one stout hair at the median posterior margin; anal opening 0.04 mm. from posterior margin of ventro-

anal plate, 0.20 mm. long, 0.15 mm. wide. Two pairs of hairs on the body in a straight line between the genital and ventro-anal plates. Metapodal plates absent. Parapodal plates distinct. Stigma opposite middle of coxae IV; peritremata extend anteriorly beyond coxae I, sinuate. Dorsal plate divided in two, joint between coxae III and IV; sculptured; sparsely clothed with setae three times as long as those on venter; dorsal plate more heavily chitinized than ventral plate, pair of tubercles, each 0.12 mm. long, on posterior lateral region of dorsum, each tubercle with five setae.

Male.—Unknown.

Type specimens.—U.S.N.M. No. 1374.

Type locality.—Clipperton Island.

Diagnosis.—*A. quinquesetosa* can be recognized by the five setae on the posterior tubercles.

Family LAELAPTIDAE

EULAEAPS ROOSEVELTI, n. sp.

Female (fig. 2).—Length from posterior margin to tip of hypostome 0.75 mm. Width, maximum, 0.40 mm. Chelicerae with a single hair on fixed finger, fixed finger with two teeth and recurved end, movable finger with two teeth and hooked end shorter than fixed finger, a corona of five chitinous spines at base of movable digit, hand 0.07 mm. long. Palps of usual form, 0.18 mm. from base of trochanter to tip, longest segment palp trochanter, single bristle on ventral side of immovable palp coxa. Epistome short, each lateral anterior margin forms a small sharp prong. Hypostome 0.16 mm. long, with three pairs of setae, extends to level of middle of palp femur. Tritosternum, barbed, 0.11 mm. long. Legs stout, none longer than body, leg I longest, leg IV next, leg III next, leg II shortest and stoutest with a well-developed subapical accessory claw, all legs with caroncle and claws, and numerous setae. Sternal plate extends from between coxae I to between the middle of coxae IV, sculptured anterior to middle of coxae III, lateral length of 0.21 mm., median length 0.18 mm., maximum width 0.19 mm.; first pair of sternal setae at the anterior margin 0.05 mm. apart, first sternal pores concave anteriorly just below first hairs; second sternal hairs just behind the middle level of coxae II, second pair of sternal pores not visible; last pair of sternal hairs opposite middle of coxae III, last pair of sternal pores oval, between coxae III and IV. Metasternal plates discrete, triangular base 0.3 mm., altitude 0.2 mm., between coxae III and IV, meta-

sternal hair in center of metasternal plate. Genital and ventral plates fused, 0.22 mm. long and 0.22 mm. wide at its maximum width, convex anteriorly, concave posteriorly, one pair of hairs just behind coxae IV, a second lateral pair 0.06 mm. anterior to the posterior margin of the plate, anterior rim of plate crenate. Genital opening a transverse slit

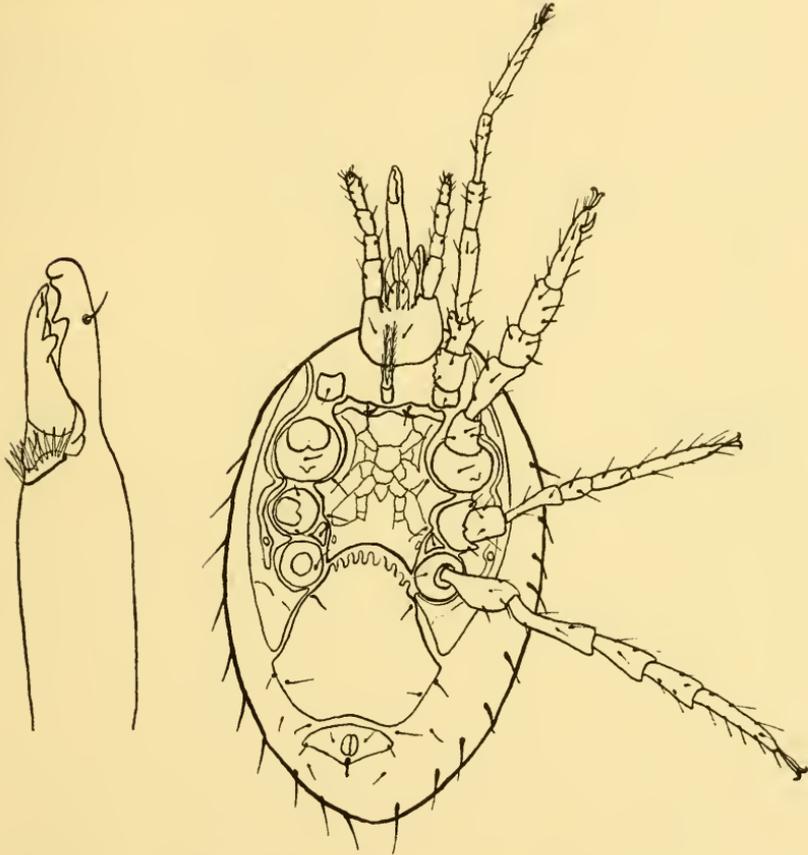


FIG. 2.—*Eulaelaps roosevelti*, n. sp. ♀. Ventral view. Chelicera.

separating sternal and genito-ventral plates. Anal plate triangular, broader than long, width 0.11 mm., length 0.5 mm.; one pair of setae in the lateral margins, one pair lateral to the anal opening, and one median hair posterior to anal opening, anus oval, 0.03 mm. long and 0.02 mm. wide. Metapodal plates large, triangular, fused to parapodal plates. Parapodal plates distinct, well chitinized. Stigmata circular, between coxae III and IV. Peritremata sinuous, extend 0.03 mm.

behind stigmata and anteriorly in front of coxae I. Dorsal shield not as heavily chitinized as ventral shields, with long, thin, sparse setae. Four pairs of hairs on venter behind coxae IV not on shields, ten pairs of marginal setae not on shields.

Male.—Unknown.

Type specimens.—U.S.N.M. No. 1375.

Type locality.—Clipperton Island.

Diagnosis.—*E. roosevelti* can be readily distinguished from the other members of the genus *Eulaelaps* because the metapodal and parapodal plates are fused in *E. roosevelti* and not in the others. Perhaps this character might be used as the basis for a new genus, but this fusion is anticipated by the close proximity of the metapodal and parapodal plates in *E. stabularis*.

ATRICHOLAEELAPS CLIPPERTONENSIS, n. sp.

Female (fig. 3).—Length from posterior margin to tip of hypostome 0.73 mm. Maximum width 0.36 mm. Chelicerae with a corona of delicate chitinous spines at the base of the movable digit, movable digit with three teeth and hooked end, fixed finger with six teeth and hooked end longer than movable finger, a single seta at the tip of the fixed digit, hand 0.07 mm. long. Palps of usual form, longest segment femur, palp 0.15 mm. from base of trochanter to tip. Epistome small, straight. Hypostome 0.10 mm. long, with four pairs of setae. Tritosternum 0.11 mm. long, barbed. Legs I and IV subequal and just shorter than body, leg III shortest, leg II stoutest, all with numerous setae, caroncles and claws at tip of each tarsus. Sternal plate begins between coxae I, ends between coxae III, length 0.17 mm., maximum width 0.12 mm., anterior margin indented to fit about base of tritosternum, posterior margin faint, fused at side with metasternal shields; first sternal hairs in middle of anterior lateral margin, first sternal pores just below first hairs; second pair of sternal setae opposite middle of coxae II, second pair of sternal pores just posterior to second pair of hairs; third pair of hairs opposite coxae III, third pair of pores not seen. Metasternal plates fused to sternal 0.05 mm. long and 0.02 mm. wide, between coxae III and IV; metasternal hairs present. Genital and ventral shields fused to form a narrow genito-ventral shield, 0.14 mm. long, 0.08 mm. wide, rounded at posterior margin; genital pair of setae on anterior corners of shield, no other setae present. Genital opening a transverse slit between sternal and

genito-ventral shields. Anal shield triangular with rounded corners, length 0.09 mm., width 0.07 mm., paired setae lateral to anal opening, median hair at posterior margin; anal opening oval, length 0.03 mm., width 0.02 mm. Six pairs of setae on venter behind coxae IV, marginal setae like those on dorsal plate spaced about 0.04 mm. apart.

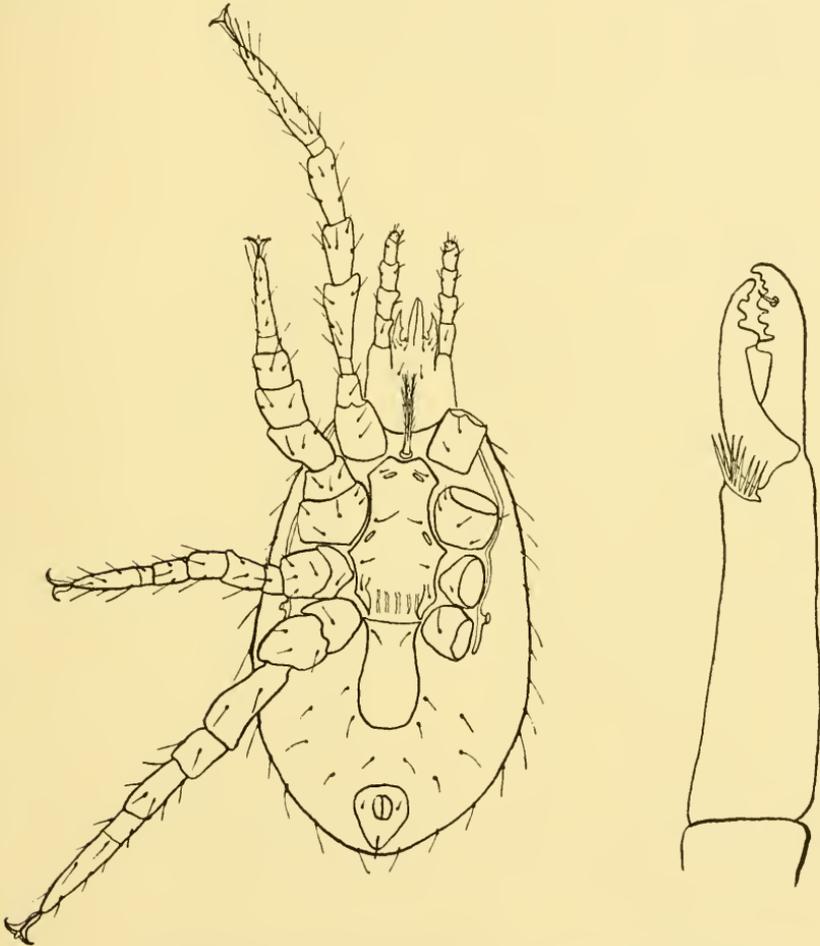


FIG. 3.—*Atricholaclaps clippertonensis*, n. sp. ♀. Ventral view. Chelicera.

Dorsal plate clothed entirely by several large lance-shaped setae. Metapodal plates absent. Parapodal plates absent. Stigmata between coxae III and IV. Peritremata extend posteriorly for 0.05 mm. and anteriorly in front of coxae I.

Male (fig. 4).—Length 0.47 mm., width 0.24 mm. Chelicerae with long ribbonlike spermatophore bearers, arising from movable digit,

hand 0.06 mm. long, ribbon 0.13 mm. long. Leg I stoutest. Ventral plates fused, genital opening on anterior margin, circular, 0.02 mm. in diameter. Hairs on dorsum same as in female.

Type specimens.—U.S.N.M. No. 1376.

Type locality.—Clipperton Island.

Diagnosis.—The crown of delicate spines at the base of the movable digit of the chelicerae of the female will distinguish *A. clippertonensis* from other species of the genus *Atricholaelaps*.

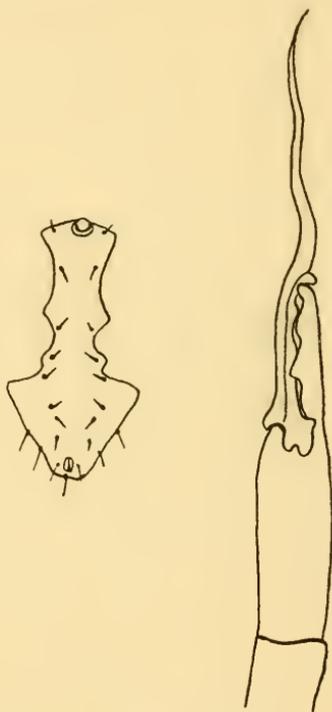


FIG. 4.—*Atricholaelaps clippertonensis*, n. sp. ♂. Ventral plates. Chelicera.

REFERENCES

- EWING, H. E.
1929. A manual of external parasites. xiv 225 pp. Baltimore.
- DA FONSECA, F.
1935. Notas de Acareologia *Eulaclaps vitzthumi* sp. n. Mem. Inst. Butantan S. Paulo, vol. 9, pp. 59-64.
- JACOT, A. P.
1934. Some Hawaiian Oribatoidea (Acarina). Bull. Bishop Mus. Honolulu, vol. 121, pp. 1-99.
- PEARSE, A. S.
1930. Parasites of Japanese Crustacea. Annot. Zool. Jap., vol. 13, pp. 1-8.