

HALARACHNE MIROUNGAE FERRIS REDESCRIBED

(Acarina: Laelaptidae)

By Robert Domrow¹

I am most grateful to Dr. J. L. Gressitt and Miss Setsuko Nakata, of Bishop Museum, Honolulu, for a fine series of all stages of this interesting halarachnine from Antarctica. The opportunity is therefore taken to supplement existing descriptions, and to note new synonymies.

Halarachne miroungae Ferris

Halarachne miroungae Ferris, 1925, Parasitology 17: 166; From nasal passages of elephant seal (or sea-elephant), *Mirounga angustirostris* (Gill), California.

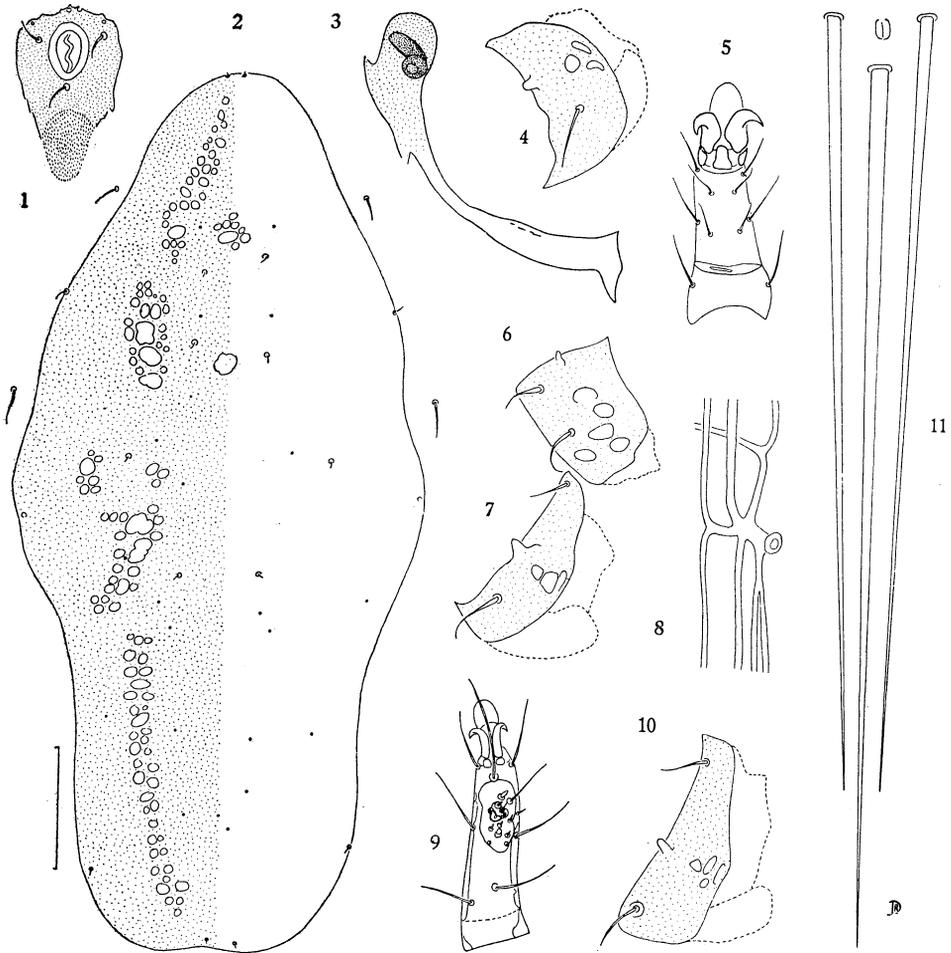
Halarachne taita Eichler, 1958, Zool. Gart., Leipzig 24: 54; From *Mirounga leonina* (Linnaeus) originating from South Georgia. **New Synonymy.**

Halarachne erratica Fain & Mortelmans, 1959, Soc. Roy. Zool. Anvers, Bull. 12: 22; A single specimen from larynx of gentoo penguin, *Pygoscelis papua* Forster, kept in same enclosure as *Mirounga leonina* originating from Kerguelen I. **New Synonymy.**

Female: Idiosoma 1700-1850 μ long in stained and somewhat deformed material. One specimen mounted directly from spirit is larger, 1980 μ long. Opisthosoma saccate; cuticle unsclerotized, with several pairs of small setae and pores both dorsally and ventrally. Dorsal shield almost entirely restricted to podosomal region, 690-700 μ long in most specimens, but occasionally as long as 740 μ . Surface closely punctate, but not as heavily so as sternal shield. The punctations surround a regular pattern of muscle attachments, comprising 10 zones as follows: 2 minute zones in mid-line towards front, and 4 much more extensive zones along each side, 3rd pair being less discrete than the others, and 4th pair by far the longest. Disc of shield carries 4 pairs of minute setae, and shows numerous refractile spots, which are considerably smaller than setal alveoli. Marginally, the shield bears a pair of minute setae at extreme front and rear, and 1 pair of larger antero- and posterolateral setae. Indications of a 3rd pair of midlateral setae also present. A few longer setae set in lateral cuticle beside shield.

Sternal shield irregularly shaped, only 1/2 as wide posteriorly as anteriorly. Surface heavily punctate, and apparently without lyriform pores. With antero- and midlateral cornua extremely heavily sclerotized, and produced into weaker processes which extend out between coxae I & II and II & III (as Oudemans, 1925, succinctly says, the cornua

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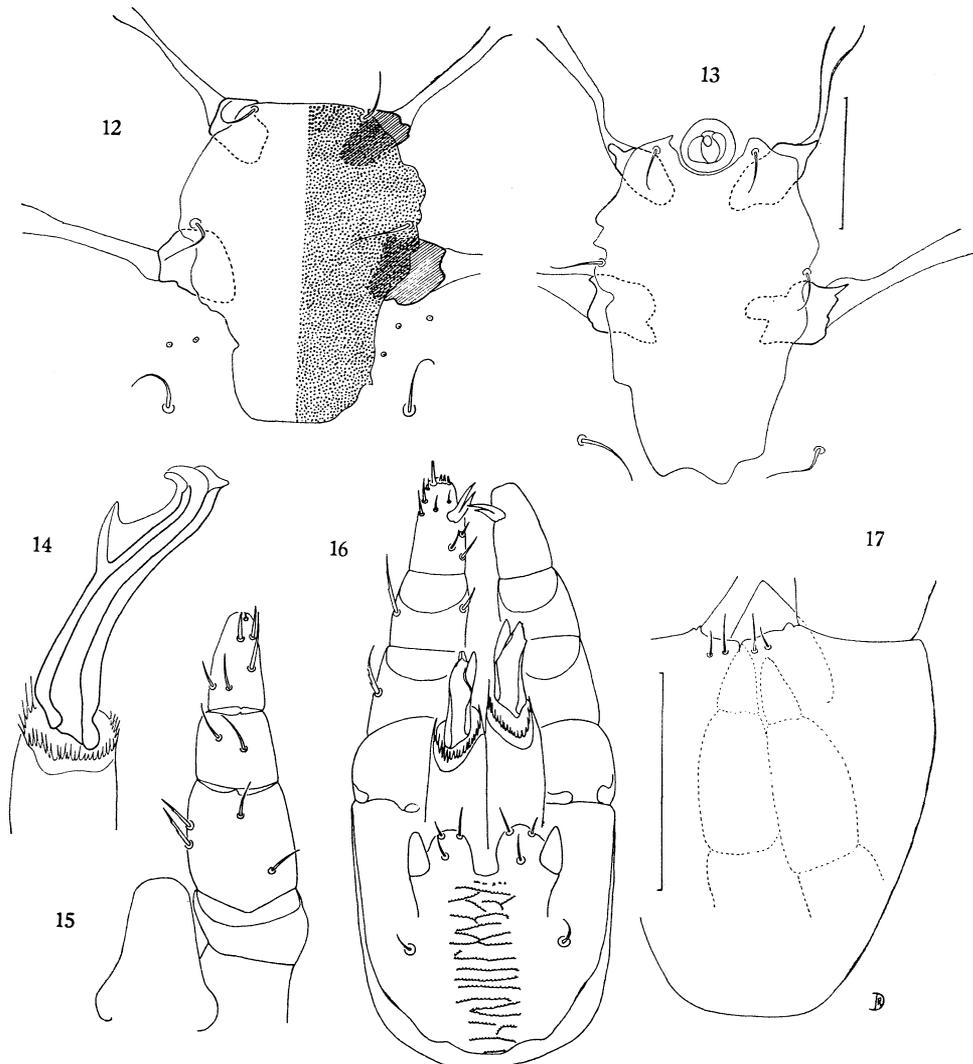
Figs. 1-11. *Halarachne miroungae* Ferris. 1, anal plate ♀; 2, dorsal plate ♀; 3, peritremal complex ♀; 4, coxa IV ♀; 5, venter of tarsus II ♀; 6, coxa I ♀; 7, coxa II ♀; 8, main arms of tracheae ♀; 9, dorsum of tarsus I ♀; 10, coxa III ♀; 11, anus and anal setae, larva. (The scale represents 100 μ .)

fallen sofort ins Auge). Two pairs of setae present on plate, one immediately between the anterolateral cornua, and one immediately in front of the midlaterals. The 3rd pair of sternal setae lie free in cuticle at level of posterior margin of shield. Two or three pores are found in cuticle in front of this pair of setae. Metasternal complex absent.

Genital shield and setae completely lacking. Genital aperture a gaping transverse slit between coxae IV.

Anal shield dorsoterminal, pear-shaped, slightly irregular in outline. Anus near anterior margin, and adanal setae set level with anterior 1/2 of anus. Postanal seta subequal to adanals, set immediately behind anus. Surface of shield with weak punctations, which merge into zone of barbules posteriorly.

Stigmata and abbreviated peritremes situated between coxae III and IV, on weak peritremal shield, which runs back around coxae IV to fuse with a heavy longitudinal apodeme, which is absent in ♂. Tracheae large and striking, extending throughout body and into all appendages. Stretched lengths of tracheae clearly show the spiral structure figured by Newell (1947) for *Orthohalarachne attenuata* (Banks). Five main arms lead from the atrium. Arm 1 sends one branch forward, and another inward to anastomose with its opposite partner to form a link from side to side; arm 2 runs forward; 3 sends one branch forward, and one backward; 4 runs backwards; and 5 sends 2 branches backwards.



Figs. 12-17. *Halarachne miroungae* Ferris. 12, sternal plate ♀; 13, sternal plate ♂; 14, chelicera ♂; 15, tectum and dorsum of palp ♀; 16, venter of gnathosoma ♀; 17, gnathobase, larva. (Both scales represent 100 μ .)

Legs all short and thick. Coxae with setal pattern 2.2.2.1, and strong apodemes for muscle attachment. Most segments of legs with finely punctate cuticle showing a few clear patches. Tarsus I with sensillary area dorsally, comprising numerous short spinose and rod-like setae arranged as figured. All tarsi with sessile ambulacra comprising pulvillus and 2 claws, those on legs II and III being particularly strong.

Gnathosoma: Tritosternum absent. Deutosternal groove not developed, but area with about 16 rows of minute denticles. Three pairs of hypostomal and 1 pair of gnathosomal setae present. Hypostomal lobes and labial cornicles not well formed, but quite strongly sclerotized. Palpi with 4 movable segments, tibiae and tarsi being fused. Trochanter without setae. Femur with 5 setae. Genu with 4 setae. Tibiotarsus with about 18 setae including 1 longer and about 4 shorter terminal rod-like setae. Claw 2-tined. Tectum distinct, tongue-like, with flap much more weakly sclerotized than basal portion. Chelicerae with fixed digit obsolescent. A distinct corona present around insertion of movable digit, which is strongly sclerotized, with a pointed hyaline lobe dorsally.

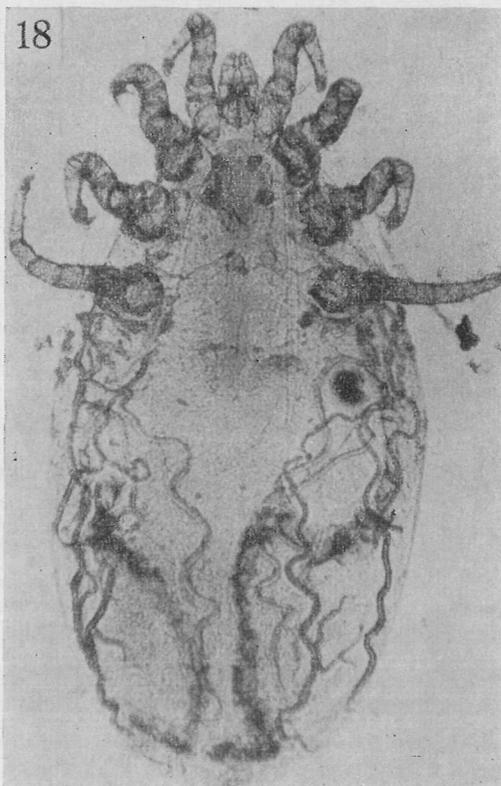


Fig. 18. *Halarachne miroungae* Ferris. ♀. Please note (i) heavily sclerotized sternal cornua; (ii) "endosternite" of Oudemans (1925); (iii) restriction of dorsal shield to podosomal region; (iv) extensive bilateral tracheal system with transverse anastomosis; (v) sack-like opisthosoma, with dorsoterminal anal plate. (Idiosomal length 1980 μ .)

Male: Idiosoma 1720–1840 μ long. Essentially as in ♀. Genital aperture subcircular, set directly between 1st pair of sternal setae. Chelicerae much larger and more elaborate distally, but of similar basic formation.

Larva: Idiosoma 890–1040 μ long. Without any shields whatever. Intercoxal area with 3 pairs of relatively long setae. Ventral area with a pair of similar setae, and about 3 pairs of shorter posterolateral setae. Podosoma with area of future dorsal shield delineated by 5 pairs of longer "marginal" setae enclosing 2 pairs of minute discal setae. Vertical setae present, minute. Hysterosoma with about 4 pairs of setae, posterior pair being strongest. Anus flanked laterally and posteriorly by 3 immense setae, which appear to be hollow in basal portion. Coxal formula 2.2.2. Ambulacra on legs I stalked, but those on II and III sessile. Palpi essentially as in adult. Gnathosomal setae absent. Hypostomal setae represented only by 2 pairs. Each chelicera apparently with simple conical digit. Tectum weaker and more angulate than in adult.

MATERIAL EXAMINED: 18 ♀♀, 2 ♂♂ and 12 larvae from nasal membranes of elephant seal, *Mirounga leonina* (L.), Base Gonzales Videla, Danco Coast, Palmer Peninsula, Antarctica, 64° 49' S, 62° 51' W, 16. II. 1961, R. E. & T. S. Leech. Also 2 ♀♀ and 2 larvae, same data, but 3. III. 1961.

Notes: Newell (1947) recognized 2 genera of nasal mites parasitic in pinnipedes. *Halarachne* Allman is confined to the true earless seals (Phocidae), while *Orthohalarachne* Newell is found in the eared seals or sea-lions (Otariidae) and walruses (Odobenidae). This ecological division is supported by constant morphological differences. The 3 described species of *Halarachne* may be keyed as follows.

KEY TO FEMALES OF GENUS HALARACHNE ALLMAN

1. Third pair of sternal setae set on sternal shield. Dorsal shield 990 μ long (calculated from Oudemans, 1925). From *Halichoerus grypus*, Ireland to Baltic Sea..... **halichoeri** Allman
 Third pair of sternal setae not set on sternal shield. Dorsal shield considerably larger or smaller than 990 μ 2
2. Dorsal shield large, 1360–1430 μ long. Sclerotized sternal cornua absent. Sternal plate angulate posteriorly. From *Monachus tropicalis*, Carribean..... **americana** Banks
 Dorsal shield small, 690–740 μ long. Sclerotized sternal cornua present. Sternal plate truncate posteriorly. From *Mirounga angustirostris*, California, and *M. leonina*, Antarctica..... **miroungae** Ferris

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