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HYADESIA MAXIMA sp. n.
(Acari, Hyadesiidae)
FROM SOUTH GEORGIA*

by A. FAIN**, L. SØMME*** and W. BLOCK****

The new species of *Hyadesia*, *H. maxima* sp. n., that we describe here occurs abundantly in the inter-tidal zone of South Georgia, in the sub-Antarctic. Mites of the family Hyadesiidae (Astigmata) have not previously been recorded from South Georgia. These mites, however, are well represented in several other islands of the sub-Antarctic region. Five species, all belonging to the genus *Hyadesia*, have been described from three of these islands. Among them three species (*H. kerguelenensis* (LOHMANN), *H. subantarctica* FAIN and *H. balophila* FAIN) are known from Iles Kerguelen ; one (*H. paulensis* FAIN) from St. Paul Is. and one (*H. travei* FAIN) from St. Paul Is. and Nouvelle-Amsterdam.

It is to be noted that Hughes (1970) described a new species of mite from South Georgia (*Neocalvolia claggi*) belonging also to the Astigmata but to the family Saprogllyphidae.

HYADESIIDAE

Hyadesia MEGNIN, 1891

Hyadesia maxima sp. n.

FEMALE (fig. 1-5) : Holotype 870 μ long (idiosoma) and 620 μ maximum width (non gravid). Measurements in four non gravid

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paratypes : 810 × 600 μ; 840 × 580 μ; 900 × 600 μ; 990 × 690 μ; in five larvigerous paratypes 915 × 630 μ (containing 1 larva); 960 × 690 (containing 2 larvae); 978 × 690 μ (with 2 larvae); 1110 × 840 μ (with 7 larvae); 1164 × 750 μ (with 2 larvae). *Dorsum* : Cuticle soft except in anterior part of

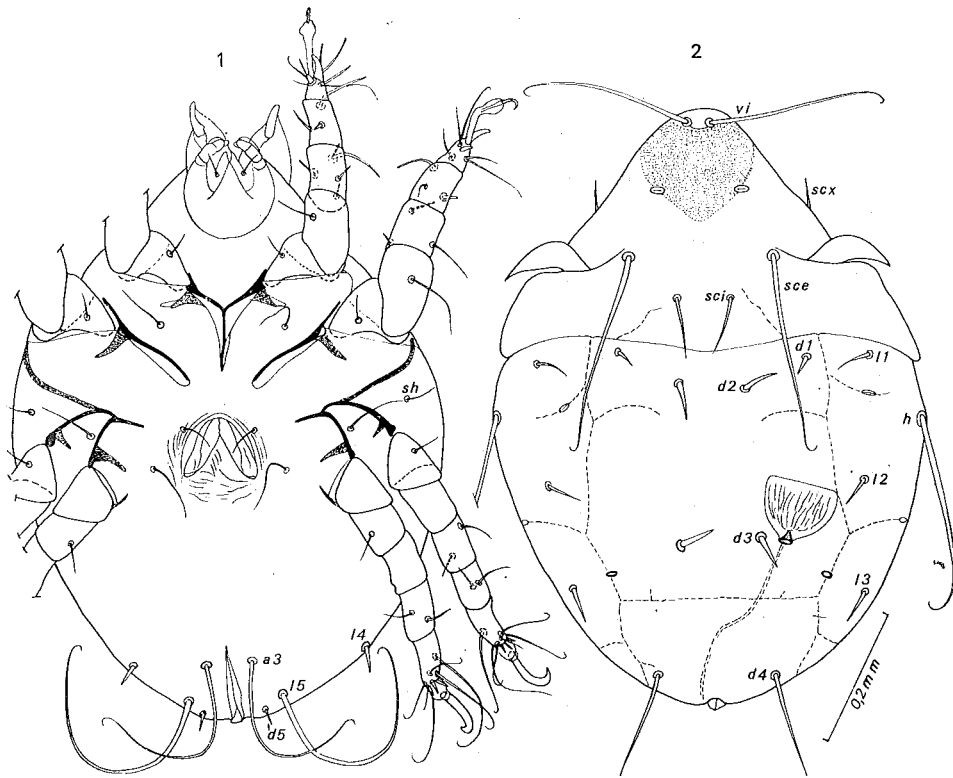


FIG. 1-2. — *Hyadesia maxima* sp. n. Holotype female in ventral (1) and dorsal (2) view.

propodosoma bearing a punctate shield slightly wider (165 μ) than long (124 μ). In two paratypes the measurements (length × width) of this shield are : 105 μ × 135 μ; 120 μ × 150 μ. Copulatory pore situated not far from the posterior extremity (in a paratype at 60 μ). *Venter* : Sternum 90 μ long. Epimeres II free. Epimeres III-IV fused. Anus vtro-terminal. *Legs* : Tarsi I-IV 53 μ - 61 μ - 89 μ - 100 μ long (pretarsi and spines not included). Claws I-II

25 μ, pretarsi 90 μ; claws III-IV 75 μ, pretarsi 39 μ. Gnathosoma 158 μ long, 130 μ maximum width (palps included). Grandjean's organ curved, relatively short with bifid apex.

Chaetotaxy : Setae *vi* 255 μ, *sc x* thin, 45-55 μ; *sc i* relatively thin and attenuated apically, incomplete in holotype, in paratypes 90 μ;

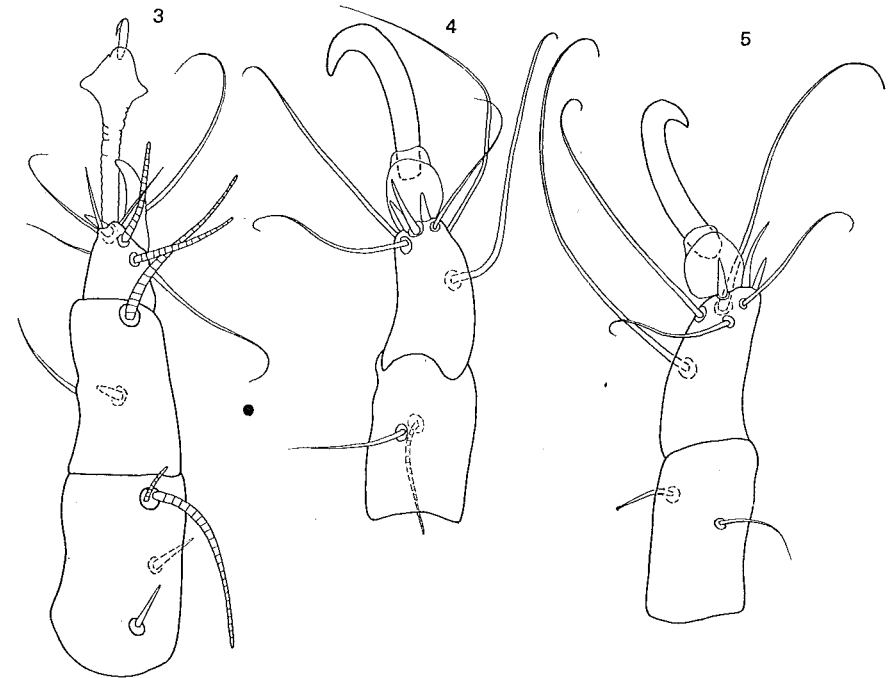


FIG. 3-5. — *Hyadesia maxima* sp. n. Holotype and paratype female : Tarsus, tibia and genu I dorsally (3); tarsus and tibia III (4) and IV (5).

sc e 300 μ; *d 1* a thin spine, 30 μ; *d 2* and *d 3* spinous, 45 μ; *d 4* strongly attenuated at apex, 130 - 160 μ; *d 5* is a thin spine, 30 μ; *l 1*, *l 2*, *l 3* and *l 4* spinous and 45-60 μ long; *l 5* 420 μ; *a 3* 330-350 μ; *b* 280 μ; *sh* 27 μ. There are two pairs of thin genital setae (40 μ and 66 μ). The setae *vi*, *sc e*, *b*, *l 5* and *a 3* end in a hook.

Leg chaetotaxy : Tarsi I-II with a strong apical and a small subapicoventral spine, 5 thin setae. Tarsi III-IV with 3 subapico-ventral spines and 5 thin setae. Ventral seta of tibiae III-IV, thin and flexible. *Solenidiotaxy* : Tarsus I : $\omega 1$ 53 μ, $\omega 3$ 46 μ. Genu I with two solenidia (21 μ and 90 μ long respectively).

MALE (fig. 6-7) : A paratype is 920 μ long (idiosoma) and 625 μ wide. In two other paratypes : 840 \times 600 μ and 978 \times 660 μ . Dorsum as in female. Propodonotal shield 120 μ long and 150 μ wide. *Venter* : Sternum fused with epimeres II. Genital organ

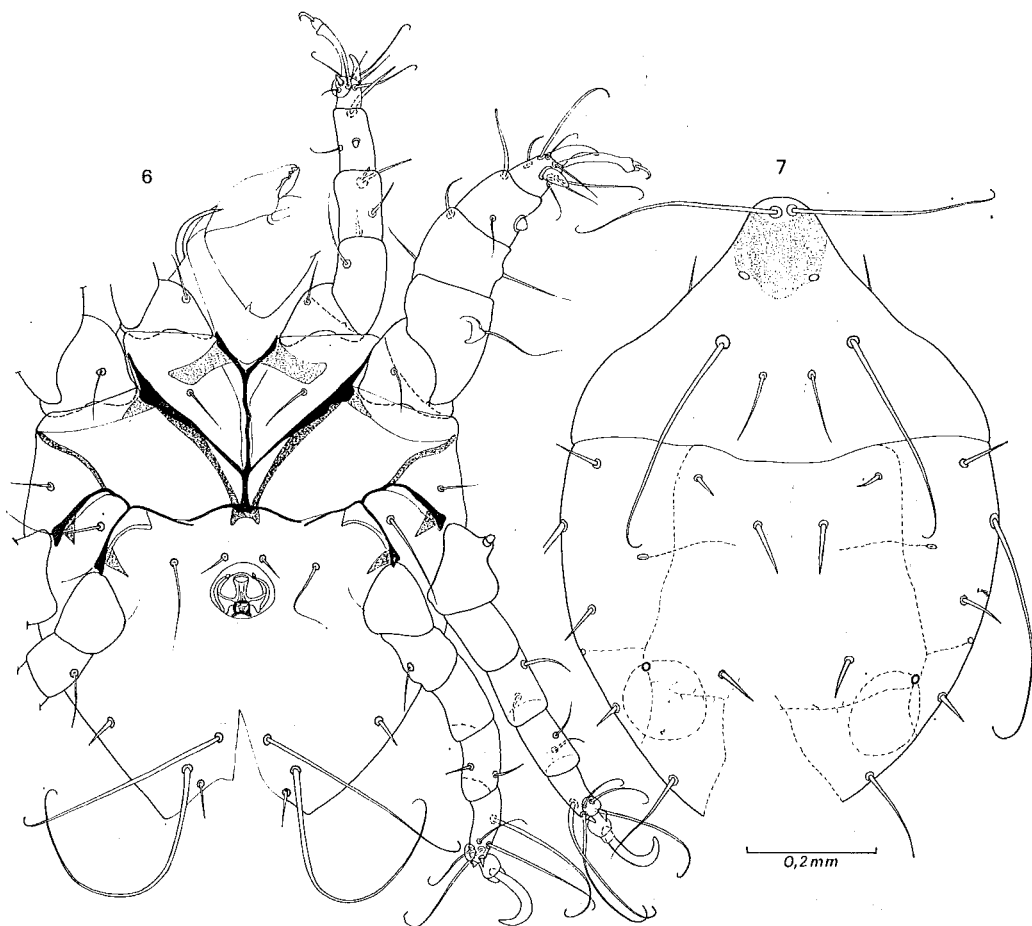


FIG. 6-7. — *Hyadesia maxima* sp. n. Male in ventral (6) and dorsal (7) view.

strongly rounded laterally, 90 μ wide. Genital setae thin, 35 μ and 120 μ respectively. *Legs* : The legs II are very strongly inflated and slightly modified : the tibia bears a short and a thick rounded spine, femur with a ventral rounded process bearing a thin seta.

Tarsi I-IV 66 μ - 84 μ 117 μ - 120 μ long (pretarsi and spines not included). The trochanter III is produced ventrally where it bears a short thick rounded seta. Tarsi I-III and IV with a ventro-apical sucker (copulatory suckers). Gnatosoma as in the female.

TRITONYMPH : 595 μ long and 420 μ wide. General characters as in female. Vulva lacking. Dorsal and ventral setae shorter than in female.

REMARK :

H. maxima is the largest species of the family Hyadesiidae. It is closest to *Hyadesia travei* Fain, 1975, described from St. Paul Is. and New-Amsterdam Is. It is however distinguished from that species by the following characters (in both sexes) :

1. Much larger size of the body.
2. Propodonotal shield shorter and narrower. The shield is always distinctly wider than long. In *H. travei* this shield is always longer than wide (in both sexes).
3. Grandjean's organ distinctly longer.
4. Setae *sci* thinner and longer (90 μ). In *H. travei* this seta is a spine 40 μ long.
5. Setae *d4* is much longer (130 to 160 μ) and progressively attenuated apically. In *H. travei* this seta is a short spine 45 μ long.
6. Setae *a3* and *l5* longer.
7. Posterior claws more curved.
8. Male : leg II more inflated and with the ventral spine of tibia modified (very short and rounded). In *H. travei* this leg is much less inflated and the ventral spine of tibia II is normal.

LOCATION :

Holotype and 25 paratypes female, 15 paratypes males and 30 paratypes nymph all from the Sub-Antarctic island of South Georgia. The mites were collected at Maiviken and Sooty Bluff, February 1982.

ECOLOGY :

The mites are found in small rock crevices in the upper part of the inter-tidal zone, where they presumably feed on green marine algae. With the changing tides the species is exposed to a variety of unfavourable conditions. At low tide they must tolerate heat and desiccation during summer, and enclosure by ice in winter. At all seasons they are submerged in sea water at high tide, which may result in an oxygen deficiency. During the winter the mites are exposed to subzero temperatures when the water is low. From laboratory studies (Block & Sømme, in prep.) it appears that nymphs and adults of *H. maxima* are well adapted to survive all these adverse conditions.

In the laboratory 90 percent of nymphs and adults survived 12 hr in a dry atmosphere, and 50 percent survived 24 hr in a saturated atmosphere at 35° C. About 60 percent of the mites survived submergence in sea water for three weeks at room temperature, while higher mortalities were recorded in fresh water.

The mites are susceptible to freezing, but have individual supercooling points in the range of — 9° to — 29° C even in summer. More than half of them survived 8 days in contact with frozen sea water at — 5° C, indicating that freezing by inoculation may occur at a slow rate.

To simulate the possible oxygen deficiencies during submergence in water and ice enclosure, the mites were stored at 0° C in sealed tubes filled with nitrogen. About 35 percent survived 8 days and 65 percent 16 days under these conditions.

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TRECHUS RIVULARIS Belg. n. sp.
(Coleoptera, Carabidae),

UNE ESPECE SUBARCTIQUE
DES HAUTES FAGNES (Mont Rigi, Belgique)*

par Konjev DESENDER**

Introduction

Au cours d'une étude aranéologique et entomologique des alentours de la Station Scientifique des Hautes Fagnes du Mont Rigi (Université de Liège), trois stations furent échantillonnées à l'aide de pièges de Barber (Baert et Kekenbosch, 1982 ; Desender, en prép.). Dans une station située dans la Fagne de la Poleur, on a capturé régulièrement un coléoptère Carabique, *Trechus rivularis* (GYLLENHAL) 1810.

Comme les connaissances sur la morphologie et la biologie de cette espèce sont très limitées, nous présentons ici nos données de la morphologie et de la biométrie, de la phénologie et de la reproduction, du développement des ailes membraneuses de cette espèce.

Matériel et méthodes

Description du microhabitat (d'après L. Baert et J. Kekenbosch, 1982 ; relevés phytosociologiques dressés par M. le Prof. Dr. R. Schumacker, directeur de la Station scientifique des Hautes Fagnes du Mont Rigi) : la strate herbacée (recouvrement de 100 %) est principalement composée de *Molinia caerulea* (L.), *Dryopteris carthusiana* (VILL.) *Carex nigra* (L.), *Eriophorum vaginatum* L. et *Galium saxatile* L. ; la strate muscinale (recou-

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