A NEW SPECIES OF *AEGYPTOBIA* (ACARI : TENUIPALPIDAE) FROM A HIGH ALTITUDE HABITAT IN OREGON [1]

BY

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ABSTRACT

The adults and immature stages of a new species of *Aegyptobia* are described from *Penstemon davidsonii* Greene, Pitt. collected from Mount Hood, Clackamas County, Oregon.

RÉSUMÉ

Description des adultes et des stases immatures d'une espèce nouvelle d'*Aegyptobia* récoltée dans *Penstemon davidsonii* Greene, Pitt. du Mont Hood, Clackamas County, Oregon.

The genus *Aegyptobia* Sayed is widespread in North America and Europe on conifers, grasses and other host plants (PRITCHARD and BAKER, 1958). Members of this genus are especially common in arid habitats of the southwestern United States and northern Mexico, where over 20 species have been found (BAKER and TUTTLE 1964, 1972 ; BAKER, TUTTLE and ABBATIELLO, 1975). The discovery of a new species of *Aegyptobia* from a high alpine temperate habitat on a host plant previously unrecorded for the genus, prompted the following description.

Aegyptobia Sayed

Aegyptobia Sayed, T. (1950). Proc. 8th. Int. Congr. Ent. : 1015.

The genus is characterized by having 4 pairs of dorsomedian setae, 5-segmented palpi, and a distinctive genital-ventral plate configuration.

Aegyptobia montana n. sp.

Female. — (Figs. 1-2). Length of idiosoma averages 274 μ (258-292 μ) ; width at sejugal furrow averages 148 μ (137-209 μ), length of rostrum averages 39 μ (22-61 μ), (n = 9). Rostrum slender, reaching to the center of genu I in most cases, or at least to its proximal margin ; stylo-

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phore long, slender, and rounded anteriorly ; rostral shield present, with a narrow slightly emarginate anterior edge. Dorsal body setae broadly spatulate and smooth (Fig. 2) ; striae of propodosoma forming cells which are orientated more or less longitudinally ; hysterosomal striae longitudinal, not broken behind setae d_2 ; striae lateral of genital and ventral plates forming circular patterns. Legs short and stout, claws uncinate (Fig. 1) ; genua and femora of legs I & II each with a dorsal broadly expanded seta. Chaetotaxy of tibia I & II = 1,1/2,0[2] ; genua I & II = 1,1/1,0, with one pair of setae at posterior margin of ventral plate, and two pairs along posterior edge of genital plate.

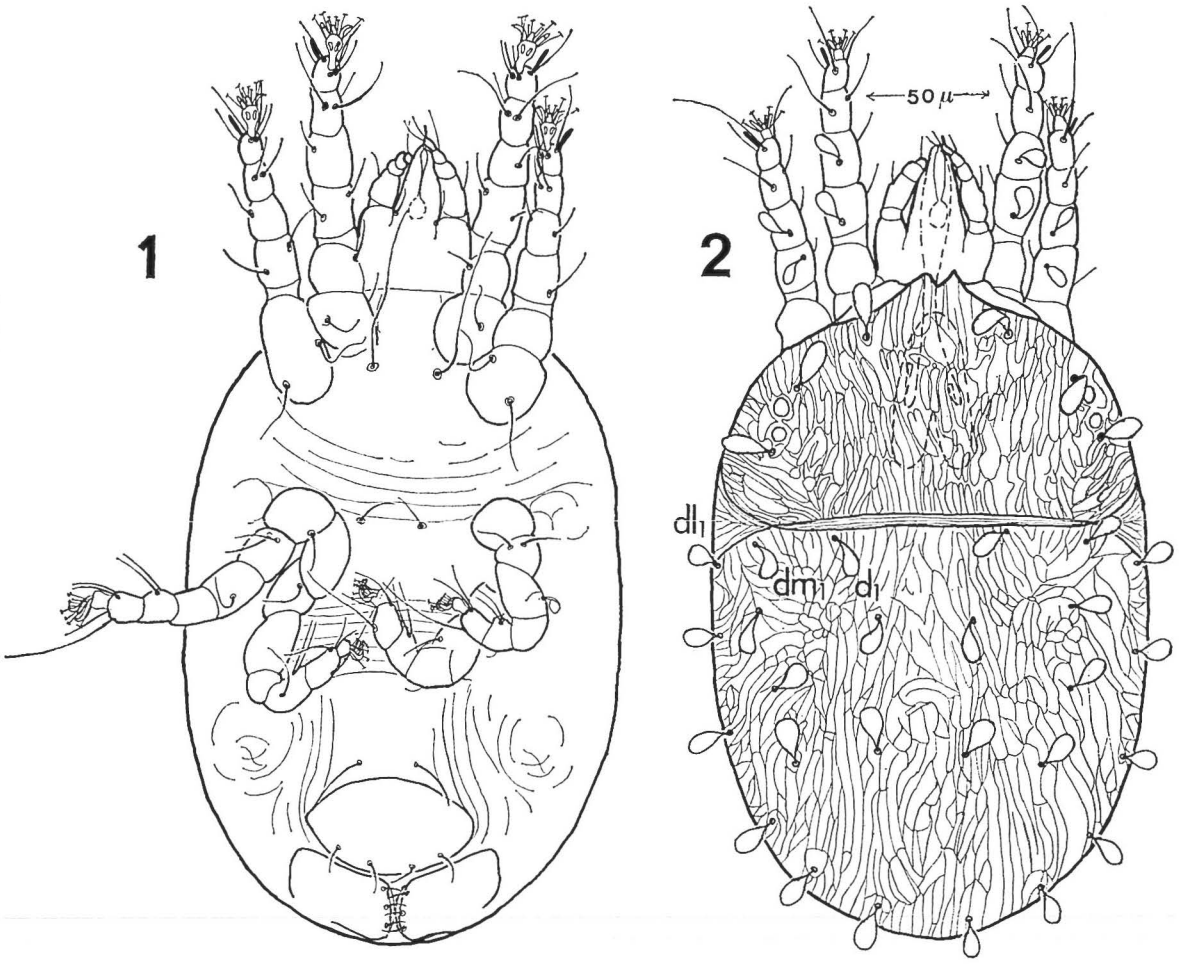

PLATE 1 : **Aegyptobia montana** n. sp. Female 1) venter ; 2) dorsum.

Male. — (Fig. 3). Length of idiosoma averages 198 μ (236-242 μ) ; width at sejugal furrow averages 129 μ (121-138 μ) ; length of rostrum averages 40 μ (33-44 μ) ; length of leg I averages 103 μ (99-105 μ), (n = 2). Similar to female except for the following : rostral shield broad and not emarginated anteriorly ; with three distinctly demarcated idiosomal regions as illustrated, dorsal striae forming longer cells than in female, cells aligned longitudinally.

2. Leg chaetotaxy is described by the formula al/d/pl ((anterolateral/dorsal/posterolateral) developed by EVANS (1963). $\frac{}{v}$ $\frac{}{\text{ventral}}$

Larva. — (Figs. 8-9). Length of idiosoma averages 158 μ (137-176 μ) ; width at sejugal furrow averages 103 μ (81-121 μ) ; length of rostrum averages 22 μ (16-27 μ), (n = 4). Rostral shield absent, dorsal body setae spatulate, often appearing narrowed. Dorsal propodosomal striae longitudinal, dorsal striae of hysterosoma transverse ; with none of the striae forming cells. Dorsal setae of femora I & II setaceous (Fig. 9) ; dorsal setae of genua I & II absent. Chaetotaxy of tibiae I & II = 1,1/2,0 ; genua I & II = 1,0/0,0. Ventral and genital plates absent, without ventral and genital setae (Fig. 8).

Protonymph. — (Figs.6-7). Length of idiosoma averages 186 μ (154-215 μ) ; width at sejugal furrow averages 119 μ (77-143 μ) ; length of rostrum averages 32 μ (16-50 μ), (n = 19). Similar to larva except for the following : dorsal body setae spatulate ; dorsal striae of propodosoma longitudinal, dorsal opisthosomal striae radiate slightly from center to distal edges. Femur I with spatulate dorsal setae, dorsal seta of femur II generally spatulate, occasionally setaceous (Fig 7) : dorsal setae of genua I & II absent. Chaetotaxy of genua and tibiae as in larva. Genital and ventral plates absent, ventral setae present (Fig. 6).

Deutonymph. — (Figs. 4-5). Length of idiosoma averages 200 μ (170-220 μ) ; width at sejugal furrow averages 126 μ (104-138 μ) length of rostrum averages 33 μ (16-50 μ), (n = 6). Similar to protonymph except for the following : femora I & II always with spatulate setae ; genua I & II mostly with spatulate setae, but some may be only slightly expanded distally (Fig. 5) ; Chaetotaxy as in female. Ventral and genital plates absent, ventral and medial genital setae present (Fig. 4).

Type locality and deposition. — Holotype female, allotype male and 27 paratypes from the south side of Mt. Hood, Clackamas Co., Oregon ; *ex* beard tongue, *Penstemon davidsonii* Greene, Pitt. on eastern aspect of Palmer snow field (2 377 m) ; 1 May, 1976 (R. J. Bury, coll.). Eleven additional specimens from the same site, *ex* undetermined plant, 16 August, 1975 (R. J. Bury, coll.).

The holotype, allotype and representative paratype material will be deposited in the collection of the U. S. National Museum, Washington, D. C. Paratypes will be placed in the collections of the following institutions : British Museum (Natural History) London ; Acarology Laboratory, Ohio State University, Colombus ; Oregon State University, Corvallis.

REMARKS :

The female of *A. montana* is similar to that of *A. crotonae* (BAKER and TUTTLE, 1972) except for the following : the rostrum of *A. montana* never reaches beyond the distal edge of genu I. In addition, the striae of the propodosoma form much shorter cell units and do not form a " V " pattern as in *A. crotonae*. Unlike *A. crotonae*, the hysterosomal striae are not interrupted behind setae d_2.

The south side of Mt. Hood, the type locality of *A. montana* n. sp., is mostly covered in large part by the Palmer snow field, which has a slope ranging from approximately 30 to 50 degrees and which extends from about 2,133 to 3,048 meters in altitude. The eastern side of the field is dotted with patches of alpine soil, the exposure of which is increased in warmer seasons. The irregular small patches of soil first appear in the early spring and, as summer approaches, the patches merge to form a ridge that runs north-south. Ridge exposure increases as fall advances, until the ridge is finally covered with snow with the onset of winter. In June 1976, the exposed

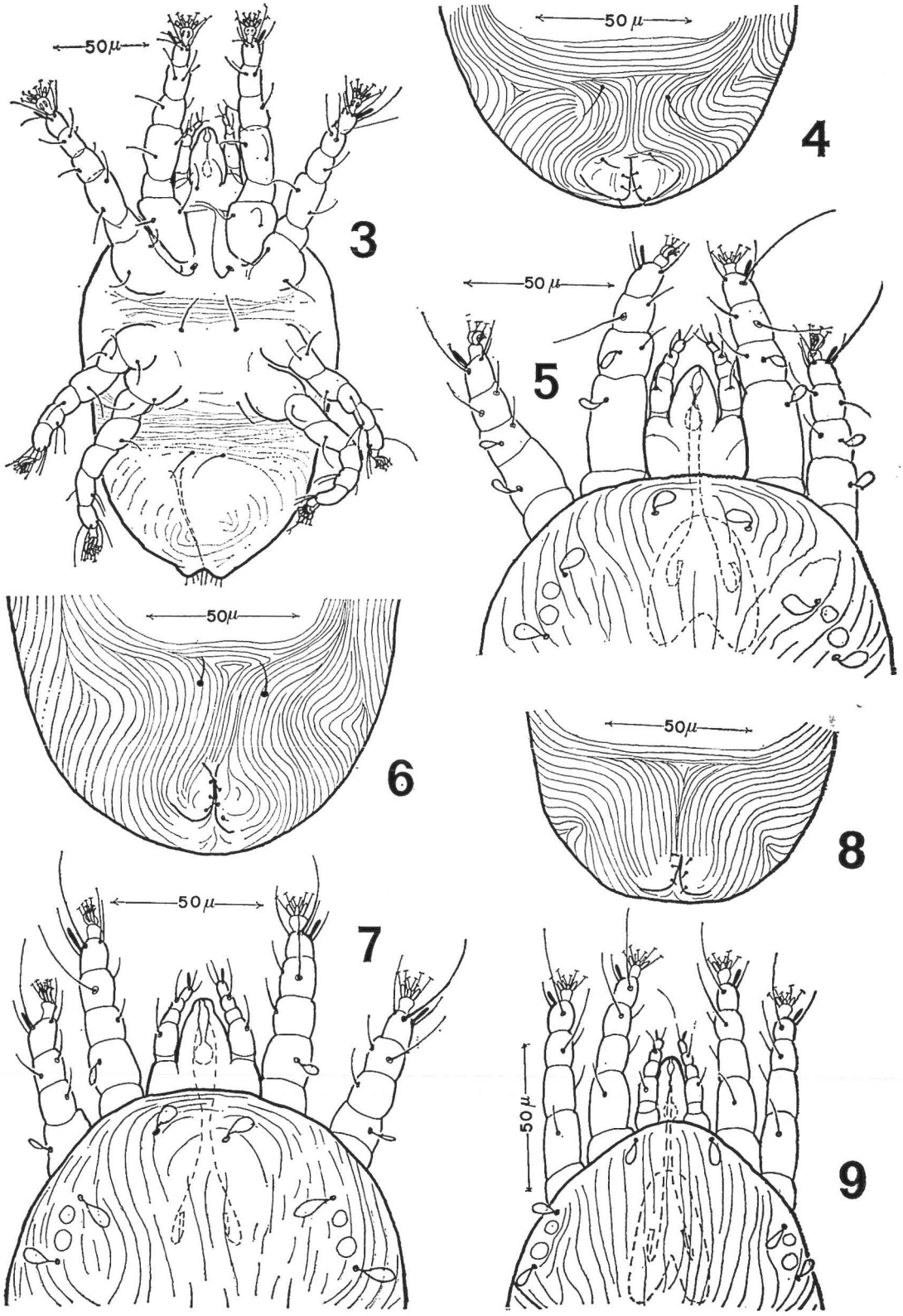

PLATE II : Aegyptobia montana n. sp. 3) venter of male.

FIGS. 4-5 deutonymph ; 4) opisthogaster ; 5) prosoma.

FIGS. 6-7. Protonymph : opisthogaster ; 7) prosoma.

FIGS. 8-9. larva : 8) opisthogaster ; 9 prosoma.

portion of the Palmer soil ridge ranged in width up to approximately 15.2 meters, and in height from approximately 0.3048 to 6.098 meters.

Large colonies of *P. davidsonii*, the host plant of *A. montana* n. sp., are found on the west side of the soil crest of the snow field, with a few clusters being encountered on the crest itself. The clusters observed ranged roughly from 5-61 cm in diameter. Cluster size, however, did not appear to be correlated with altitude, for both size extremes were noted throughout the vertical range of the plant. It appears that *A. montana* is confined to the basal or subterranean portions of the host plant, since no specimens were found on samples of above-ground stems and leaves.

The soil ridge of the snow field is frequently subjected to rain, high winds, and snow, as well as to solar heat during the day and below freezing temperatures during the night. It is, in short, an environment in which extreme fluctuations in weather occur daily, creating a rigorous habitat for any organism tenacious enough to colonize it. In the spring many small water torrents flow through the surface layers of the soil but, as the soil patches are exposed along the ridge line by progressive snow melt, the surface becomes quite arid. When this sandy soil is penetrated to a depth of 2.5-10 cm, however, it is found to be moist, no matter where on the ridge the observation is made. This, along with the fact the *P. davidsonii* has roots exceeding 30 cm at these elevations, accounts for the ability of the plant, and of its mite associates, to survive the drier seasons. The moisture below the soil surface presumably derives from subsurface drainage of melt water from the field at elevation above the soil ridge (Retzer, 1974).

The highest elevation at which *P. davidsonii* was obtained was 2,530 meters, but no specimens of the *Aegyptobia* species described were found above 2,377 meters. It is likely that the Mount Hood site is the highest elevation at which a member of the genus has been collected.

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