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PSORERGATES BOS, A New Mite Parasite of Domestic Cattle

(Acari - Psorergatidae)

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Mites of the genus *Psorergates* Tyrrell are skin parasites of mammals. Currently the genus is regarded as comprising 3 subgenera, of which 2 *(Psorergates s. str.* and *Psorobia)* are of especial interest to applied biologists. Members of the subgenus *Psorergates* (4 known species) are parasites of murid rodents; *P. simplex* Tyrrell, a parasite of the house mouse, *Mus musculus,* is the best known example. The subgenus *Psorobia* Fain presently contains 3 species: *P. cercopitheci* Zumpt and Till from the vervet monkey, *Cercopithecus aethiops,* in South Africa; *P. hystrici* Till from the Cape porcupine, *Hystrix africaeaustralis,* in South Africa; and *P. ovis* Womersley, the itch mite of sheep, known from Australia, South Africa, and the United States. Members of the subgenus *Psorergatoides* Fain (7 species) are known only from tropical bats (Chiroptera). Although most named species of *Psorergates* are adequately known, for purposes of recognition, from the original descriptions or redescriptions of Fain (1959a, 1959b, 1961) and Dubinin (1957), members of this genus are but little known from non-taxonomic aspects. A prominent exception is the sheep itch mite, *P. ovis,* which has been the subject of life history and epidemiological studies in Australia and the United States (e.g., Bell *et al.,* 1952; Davis, 1954; Murray, 1961).

The wide host range (4 orders of mammals) of the genus, apparent high degree of host specificity of the species, and difficulty in collecting of *Psorergates* lead one to suspect that the named species represent but a small fraction of the existing psorergatid fauna. Thus, it was not altogether surprising to receive for determination specimens of an undescribed species of *Psorergates* collected from a Hereford bull in New Mexico. The specimens were found in skin scrapings taken from an animal showing "lesions characterized by dry scurf and slight loss of hair on the neck" (H. O. Peterson, personal communication) and were collected by Dr. T. A. Hawn and W. B. Orey, Animal Disease Eradication Division, U.S. Department of Agriculture. The material was sent by the

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late Dr. H. O. Peterson and his colleague, Dr. I. H. Roberts, Animal Disease and Parasite Research Division, USDA, Albuquerque, New Mexico. Additional material was received from Dr. R. K. Strickland, ADE, USDA, Beltsville, Maryland. Appreciation is expressed to all of these colleagues for the opportunity to study this interesting material.

PSORERGATES (PSOROBIA) BOS NEW SPECIES

FEMALE (holotype). *Idiosoma* 123 microns long; 115 microns wide.

Dorsum (figure 1) almost entirely covered by a single, densely punctate shield. Dorsal shield with 5 pairs of setae: anteromedian setae minute; lateral (L) pairs longer, subequal in form and length; L_1 14 microns, L_4 12 microns long.

Venter. Medial lobes of coxa I well developed. One pair of sternal setae present at level of coxae II. Posterior opisthosomal lobes each with a pair of whip-like setae.

***Legs.* Chaetotaxy as follows:**

	I	II	III	IV
Coxa	0	0	0	0
Trochanter	v'	v'	v'	v'
Femur	v''_1, v''_2	v''_1,v''_2	v''_1,v''_2	v''_1,v''_2
Genu	v''	v''	v''	v''
Tibia	v'(1)*	v'(1)	v'(1)	v'(1)
Tarsus	d',v',l''(2)	d',v',l''(2)	d',v',l''	d',v'

* Solenidialtaxy in parentheses.

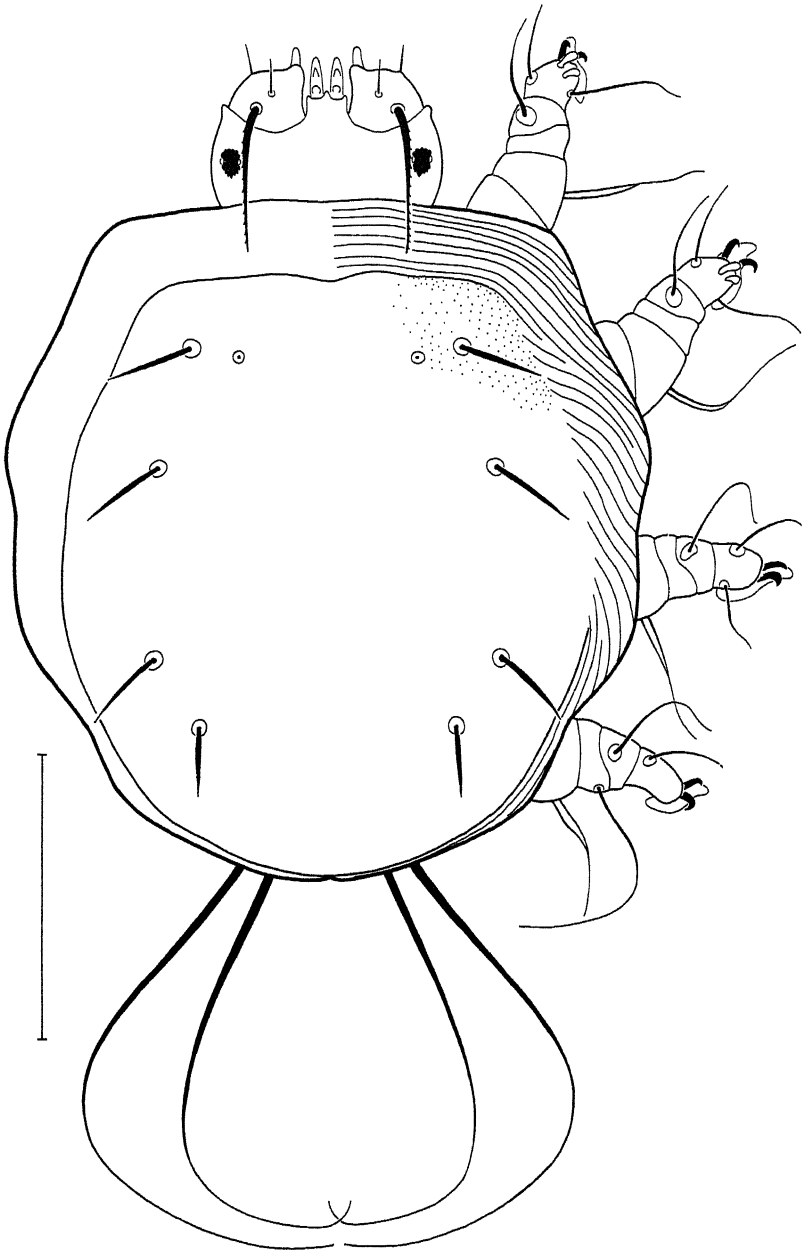
Femora of all legs with posteroventral spur. Tibial v' spine-like, distally bifid (figure 2). Tarsal v' spine-like. Ambulacrum consisting of 2 claws and pad-like empodium.

Gnathosoma. Supracoxal seta (elc p) bifurcate; anterior process multilobed; posterior process serrate. Proximal dorsal seta of palp long, barbed; distal dorsal seta shorter, smooth. Palp claw compound (figure 4).

Holotype female from skin scrapings from a Hereford bull (*Bos taurus*), Nara Visa, Quay Co., New Mexico; to be deposited in U.S. National Museum. Additional material seen: 5 females and 1 nymph, same host and locality.

PSORERGATES BOS – The Cattle Itch Mite

Fig. 1.–Dorsal view of female. Scale equals 50 microns.



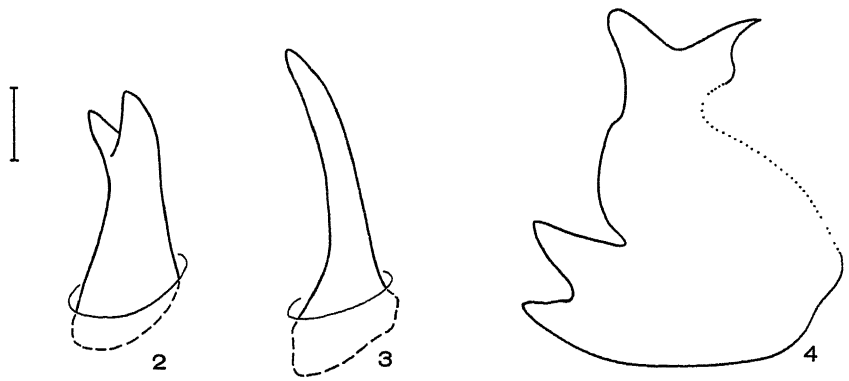


Fig. 2.–*P. bos*, ventral tibial seta, leg I; Fig. 3.–*P. ovis*, ventral tibial seta, leg I; and Fig. 4.–*P. bos*, lateral view of palp claw. Scale equals 10 microns.

On the basis of the dorsal chaetotaxy of the idiosoma and palps, *P. bos* is a member of the subgenus *Psorobia,* as redefined by Fain (1961). *P. bos* is almost identical with *P. ovis,* the sheep itch mite, but differs in absolute size and in the form of the ventral tibial setae. Fain (1961) gives 177-180 microns as the total length (including gnathosoma) of females of *P. ovis* from South Africa; 2 measurable females of *P. bos* are 135 and 145 microns in total length. This apparent difference cannot be examined further at present as my specimens of *P. ovis* and the remainder of my series of *P. bos* are not in sufficiently satisfactory condition to be measured accurately. Specimens of *P. ovis* (based on personal observations of this species and on Fain's 1961 redescription) and *P. bos* differ consistently in the form of the ventral tibial seta, v'. In *P. ovis* (figure 3) this seta is spine-like and in *P. bos* (figure 2) is stout and bifid distally.

One nymph, measuring 110 microns in idiosomal length and identical to the females in chaetotaxy, is included in the material before me. If the pattern of development of *P. bos* is similar to that of *P. ovis* (described by Murray, 1961), this specimen is probably a deutonymph. Because of the great similarity between *P. ovis* and *P. bos* it is expected that the life cycles will be found to be quite similar, at least as regards the number and morphology of the developmental stases.

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