

FEATURES OF BOVINE DEMODECOSIS (*DEMODEX BOVIS* STILES, 1892) IN MONGOLIA: PRELIMINARY OBSERVATIONS

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Demodecosis of cattle, infestation by the hair follicle mites (genus *Demodex*), has been reported from over fifty countries in Europe, North and South Americas, Africa, Australia and Asia inclusive of India, Bangladesh, Ceylon, Burma, Malaysia, Indonesia, Philippines, Japan, and Iran (Smith H. J. 1960: Demodicidosis in Large Domestic Animals - A Review, Health of Animals Division, Canada Department of Agriculture, Ottawa, 56 pp.; Oppong E. N. W. 1970: Aspects of Bovine Demodicosis, Streptothricosis and Besnoitiosis in the Accra Plains of Ghana and a Study of *Demodex ghanensis* sp.n., Thesis, Univ. Dublin, 321 pp.; and accessions to the lists compiled by them). Three *Demodex* species have been reported from cattle, viz., *D. bovis* Stiles, 1892, *D. ghanensis* Oppong, Lee et Yasin, 1975, and *D. tauri* Bukva, 1986. Of them, *D. bovis* is the best known, also being the only one proven to produce distinct lesions. These are typically intradermal nodules up to 10 mm in diameter and localized mostly in the anterior parts of the body. The prevalence of bovine demodecosis has been reported to reach up to 94% (Murray M. D., Nutting W. B. and Hewetson R. W. 1976: Aust. Vet. J. 52: 49) and the maximum number of nodules 4 014 (as observed in an un-haired hide) (Polyakov D. K. 1957: Trudy Vsesoyuz. Nauch.-Issled. Inst. Vet. Sanit. Ektoparazit. 11: 173-193).

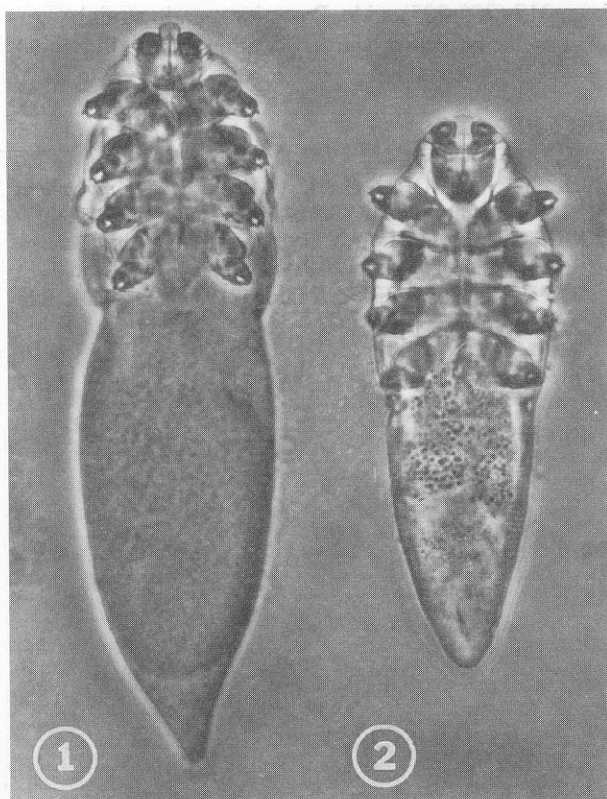
A total of 60 hides of Mongolian cattle (*Bos taurus* L.) and 13 hides of domestic yak (*Bos grunniensis* L.) slaughtered at the abattoirs in Ulan Bator or Darchan, Mongolia in October 1988 were examined for nodules on a smooth examination table by 30-40 minute palpation per hide. Prior to this the animals had been pastured for at least six months. The skin over the nodules was incised, nodules taken out, and the gross appearance of them and the surrounding tissue noted. Nodules were fixed in 10% formalin. The contents of the fixed nodules were extracted, cleared and mounted in Hoyer's medium. For determination, morphometric and other characters of all stages of mites were compared with published data (Desch C. E. and Nutting W. B. 1973, in B. Rosický and M. Daniel (Eds.), Proc. 3rd Int. Congr. Acarol., Academia, Prague, pp. 499-505; Bukva V. 1986: Folia Parasitol. 33: 363-369) as well as with mounted specimens of *D. bovis* from Germany and South Bohemia. The nodules were not histologically examined.

One to six (average 3.1) intradermal nodules were found in 16 (26.7%) out of 60 examined head of cattle. Most of the nodules were localized in the ventro-anterior parts of the body from the fore chest through the sternal region to the umbilical region. The nodules were 2-5 mm in diameter. Macroscopically, their wall was invariably an

intact capsule. Either no reaction was macroscopically apparent in the surrounding tissue (n = 48) or the surrounding tissue was altered, resembling lymphoid tissue (n = 2). Except for one nodule, microscopic examination of the contents of nodules revealed large numbers of *Demodex bovis* Stiles, 1892 (all stages) (Figs. 1, 2). No nodules were found in yak.

This is the first finding of *D. bovis* and demodectic lesions in the skin of Mongolian cattle, an old, indigenous breed of cattle in Mongolia.

It should be noted that the prevalence and intensity of infestation found in Mongolian cattle are lower than those revealed in Black Pied dairy cattle in Eastern Germany by comparable methods: prevalence of nodules 69.9 - 82.5%, and average number of nodules per infested hide 7.6 - 11.3 (with the exclusion of the infestations over 200 nodules) (Matthes H.-F. 1991: Untersuchungen zur Infektion des Hausrindes mit der Haarbalgmilbe *Demodex bovis* Stiles, 1892 unter Berücksichtigung der Demodicidae anderer Wirtsspezies. Thesis, Humboldt University, Berlin,



Figs. 1, 2. *Demodex bovis* from Mongolian cattle (x 350). Fig. 1. Male. Fig. 2. Female.

405 pp.). Another conspicuous feature found in Mongolian cattle was the distinct concentration of the nodules on the ventral side of the body. In addition, finding grossly visible changes in the surrounding tissue around only 2 of 50 nodules suggests that such changes may be less frequent in Mongolian cattle than in cattle in Germany (Hoffmann G. and Hiepe T. 1987: Mh. Vet.-Med. 42: 704-708; Kovanah L. P. 1989: Untersuchungen zum klinischen Bild und zur Diagnostik der Demodikose des Rindes sowie zu einigen Körpermassen des Erregers, *De-*

modex bovis. Vet. Diss. A, Leipzig; Matthes H.-F. 1991, op.cit.).

We suspect that these characteristics of demodecosis in Mongolian cattle and their difference from those in cattle in Germany may largely reflect the specific susceptibility and sensitivity of the breed and/or the conditions of cattle husbandry in Mongolia, especially the prolonged pasture and the effects of strong radiation of the sun. The importance of these factors has been discussed by various authors (cf. Matthes H.-F. 1991, op. cit.). Our observations yield additional support for such speculations.

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