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Brief Communication

BOVINE DEMODICOSIS. A SIGNIFICANT CAUSE OF LESIONS IN HIDES AND LEATHER IN FINLAND

Kannari & Ali-Yrkkö (1965) reported that about 20 % of bovine hides processed by leather factories in Finland showed parasitic lesions which were overlooked during the examination of hides at slaughter-houses. They suggested that ox botflies, lice, fleas, itch-mites or ticks accounted for the parasitic lesions. Some years ago the employees at Friitala, Finland drew attention to a new type of lesion in bovine hides, which they thought to be caused by an unknown parasite. Since the lesions produced serious defects in finished leather, Friitala arranged that studies should be performed to clarify their actiology. These have revealed that the lesions are produced by Demodex bovis, the occurrence of which has not been established previously in Finland. This report describes the appearance of demodectic lesions observed in the skin of living cattle and in bovine hides during leather processing.

Demodex bovis has so far been identified in adult cattle of both sexes of the Ayrshire and Finnish breeds. Demodectic lesions were concentrated in the shoulder and adjacent areas of the skin and appeared as firm rounded intradermal nodules, usually between 0.2 and 1.0 cm in size. They were most easily found by running a hand over the skin, but some nodules were also visible at some distance, being marked by a tuft of hair or appearing as rounded raised areas in the skin.

Closer examination of the demodectic nodules in the skins of living animals and in fresh or salted hides revealed that the covering hair was usually normal, and the epidermis somewhat darkened around a small opening, through which grey or yellow caseous substance could be expressed. When this was spread on a slide and examined under a microscope, numerous mites were

identified as immature or mature specimens of Demodex bovis according to the descriptions of *Boch & Supperer* (1971). In some nodules a spontaneous exudation of the caseous substance had formed a small superficial scab and a matted tuft of hair, which became detached when the scab was removed. Light microscopical examination of histological specimens prepared from the lesions revealed that the nodules were cystic hair follicles located deep in the corium, containing mites and their eggs. Such cysts were surrounded by inflammatory cells, which had also infiltrated deep into the corium. Mites were also found freely among the inflammatory cells. In a few lesions no contents could be expressed from the nodules, and when sectioned they were found to be red or blue rounded formations located deep in the dermis. Histological examination revealed that these lesions were healed or healing, and that the nodules consisted of the remains of dead mites and eggs surrounded by granulomatous tissue.

During the processing of leather, demodectic lesions were most easily seen in wet hides dehaired by the liming. When such hides were examined by transmitted light, the nodules appeared as dark spots of varying size. The flesh surface of tanned hides and finished leather was normal, but small dark-stained areas, scars, holes or depressions were seen on the grain surface over the nodules. When the leather was split into two layers, the inner surface of the superficial layer showed small voids and depressions. According to histological studies, these voids originated from detachment of the nodules.

The distribution and structure of the demodectic lesions described in this report accord with previous observations (*Kronberger et al.* 1959, *Tancous et al.* 1959). The nature of the lesions indicates that bovine demodicosis clinically is a harmless disease but a source of serious economic loss to the leather industry, owing to the resultant damage to hides and leather. Studies on the epidemiology of bovine demodicosis in Finland are in progress, and a report will be published later.

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