



Fig. 1. Low magnification views of the thread-like long microcysts of *Sarcocystis arieticanis* (arrows) in a sheep muscle tissue after tryptical digestion ( $\times 40$ ).

from 50 to 2920  $\mu\text{m}$  in length and from 25 to 150  $\mu\text{m}$  in width. The microcysts found belonged to the following species of sheep sarcosporidia: *Sarcocystis tenella* (Railliet, 1886) Moulé, 1986 (70.77%) and *S. arieticanis* Heydorn, 1985 (29.3%). No macroscopic species of *Sarcocystis* was found. Out of 1000 microcysts studied, approximately 6% were exceptionally long (1000 to 2920  $\mu\text{m}$ ), thread-like, but had the similar width (25 to 100  $\mu\text{m}$ ). The longest microcyst found was in the *m. triceps brachii* (2920  $\mu\text{m}$ ). The wall of these microcysts showed long soft hair-like protrusions from 6 to 11  $\mu\text{m}$  in length (see Fig. 1).

Similar long microcysts (1000  $\mu\text{m}$ ) were detected and described by Boch et al. (1979: Berl. Münch. Tierärztl. Wschr. 92: 137–141) as *Sarcocystis* sp. Heydorn (1985: Berl. Münch. Tierärztl. Wschr. 98: 231–241), after experimental monoinfection, succeeded in describing in detail the life cycle of *Sarcocystis* sp. with the dog as definitive host and gave it the name *Sarcocystis arieticanis* sp. n. When compared with morphometric data recorded by the above authors

(length 350 to 1000  $\mu\text{m}$ ), the present findings show considerable higher values of length (it was not uncommon to find sarcocysts of 800–2000  $\mu\text{m}$  in length and in one case with a maximum of 2920  $\mu\text{m}$ ).

There are different explanations for the localization and length of sarcocysts in the muscles. Černá Ž. (personal communication) suggested that the length of the cysts depends on their age. The localization of exceptionally developed long microcysts probably depends also on topical specificity or chemotaxis of these parasites in relation to the content of oxygen, ATP, myophosphorylase, glycogen, some enzymes and other substances in the muscular fibres (O'Toole D. et al. 1986: Vet. Rec. 119: 525–531; Powell E. C. et al. 1986: Am. J. Vet. Res. 47: 514–517). It can be also the result of adaptation of the cysts to the length and character of the muscle fibers.

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## SOME CHARACTERISTICS OF SARCOCYSTIS SPP. FOUND IN THE MUSCLES OF SHEEP

Infection with sarcosporidians has recently been reported as one of the most frequent parasitological findings in sheep of Czechoslovakia (Černá Ž. and Merhautová V. 1981: *Folia Parasitol.* 28: 125–129, Nevole M. et al. 1984: Final report, Vet. University, Brno – in Czech). In a previous study (Schmidtová D. 1988: PhD. Thesis, Vet. University, Košice – in Slovak) several organs including oesophagus, heart, diaphragm and tongue from 134 sheep were examined for the presence of sarcosporidians at an East Slovakia abattoir. The animals were found to be 100% infected with microscopic cysts of *Sarcocystis* including *Sarcocystis tenella* (96.3%) and *Sarcocystis arieticanis* (3.7%). The macroscopic species *S. gigantea* was found in 5.2%. This study was directed to detect the presence and range of species of *Sarcocystis* cysts occurring in the skeletal muscles of sheep. For this purpose 30 sheep from a submontane area slaughtered at an East Slovakian abattoir were examined for the presence of *Sarcocystis*. The following group of skeletal muscles were investigated: *m. gracilis*, *m. semiten-*

*dinosus*, *m. triceps brachii* and *m. femoris medius*. The method of enzymatic digestion by trypsin (Erber M. 1977: *Berl. Münch. Tierärztl. Wschr.* 90: 480–482) was used for detecting cysts.

The results indicated an infestation rate of 100% and a similar degree of infection in all the muscles studied. The average number of microcysts found in 15 g of tissue was 184, i.e. 12 cysts/g. The semitendinosus muscle had the highest degree of infection – 211 microcysts in 15 g, i.e. 14 cysts/g. Compared with the organs examined previously (Schmidtová D., op. cit.) with an average of 1470 cysts in 15 g tissue, i.e. 98 cysts/g, skeletal muscles were less affected. The occurrence of *Sarcocystis* in eatable muscles such as those examined which go undetected by routine meat inspection can influence the meat quality.

A general morphological description was carried out in one thousand microcysts after processing the muscles by homogenization (Laupheimer K. E. 1978: *Vet. Med. Diss. München*). Round, ovoid, sword and crescent shapes of sarcocysts were frequently found. The size varied