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A. A. Tselishchev (1937) pointed out that gonderiosis of cattle was recorded for the first time in Kazakh territory in 1913 in Aulie-Ata (now Dzhambul). He himself (1940) found up 22 cases of bovine infection caused by Theileria mutans and 7 cases of a mixed invasion of T. mutans and hemosporidia in the Dzhambul Oblast.

More than once (1937, 1940, 1946, 1954) A. A. Tselishchev touched on the question of the distribution of T. mutans in the south of Kazakhstan and wrote that bovine theileriosis does not spread north of 44°N. P. A. Bityukov (1953) produced theileriosis in 3 sheep using the ticks Ornithodoros lahorensis and Haemaphysalis sulcata, which he had collected in the Bostandyk and Sary-Agach regions of South Kazakhstan Oblast.* No other information on theileriosis of sheep in Kazakhstan is present in the literature.

An expedition of the Institute of Zoology of the Academy of Sciences of the KazSSR in 1959 collected material showing that the blood parasite T. mutans occurs in cattle in the former Akmolinsk (now Tselinograd) Oblast, while T. recondita is wide-spread among flocks of sheep in the Karaganda, Akmolinsk and Kokchetav Oblasts.

Theileria of cattle--T. mutans

Eight head of cattle from 4 farms in the Akmolinsk Oblast were observed: Yesil'sk Sheep Sovkhoz (Kiimsk Region), Rostov Grain Sovkhoz (Barankul' Region), Barankul' Cattle Ranch and the Svobodnyy Sovkhoz (Yesil'sk Region).

At the Yesil'sk Sheep Sovkhoz blood smears were taken from 36 head of cattle (31 cows and 5 2-year-old heifers). Theileria was found in one heifer. Intensity of infection was 4 parasites per 100 fields of view. All the parasites found were round or oval, 0.8-1 by 1.3-2.2 μ.

* Now Chimkent Oblast.

At the Rostov Grain Sovkhoz 54 head of cattle were examined (3 bulls, 6 cows and 45 2-year-old heifers). Theileria was found in 2 heifers. Intensity of infection was 1 parasite per 100 fields of view. The parasites were varied in form: 75% were round or oval and 25% rod-shaped. They were 0.5-0.6 by 0.9-1.2 μ.

At the Svobodnyy Sovkhoz 17 cows were examined. Theileria was found in 2 of them. Intensity of infection was 1-12 parasites per 100 fields of view; 85% of the parasites were round or oval in shape; 15% were rod-shaped. They were 0.2-1.0 by 0.8-1.8 μ. In all cases the parasites in the erythrocytes were situated singly and in the overwhelming majority of cases were close to the cell's edge.

In regions where animal Theileria carriers were found only 2 species of Theileria-carrying ticks were seen: Dermacentor marginatus and D. pictus.

Theileria of sheep--T. recondita

Of the 14 farms we studied in the present Tselinograd Kray and Karaganda Oblast we observed Theileria on 8 farms and in 102 sheep. The Karaganda Oblast contains 3 farms: a subfarm of the Balkhash copper smelter, near the railroad station of Basaga (Chet Region), a subfarm of the Oblast Health Department in Temir-Tau and the Kirov Kolkhoz near the village of Mayorovka (Nurinsk Region).

Another 3 farms are situated in the territory of the former Akmolinsk Oblast: the Yesil'sk Sheep Sovkhoz (Kiimsk Region), the Derzhavin Grain Sovkhoz (Barankul' Region) and the Svobodyy Sovkhoz (Yesil'sk Region), and there are 2 farms in the Kokchetav Oblast: the Ruzayev Sovkhoz (Ruzayev Region) and a subfarm of the Borovoye spa in the Shchuchin Region.

At the subfarm of the Balkhash copper smelter 31 sheep and 5 goats were examined. Theileria was found in 25 sheep, including a 4-month-old lamb. Theileria was not found in the smears from goats. Intensity of infection was 1-55 parasites per 100 fields of view. Extent of infestation was 70%. The parasites were round, oval (85%) and rod-shaped (15%), 0.5-0.9 by 0.5-1.7 μ.

At the subfarm of the Temir-Tau Oblast health Department smears were obtained from 8 sheep and 2 goats. Theileria was observed in the smears from one of the sheep. Intensity of infection was 5 parasites per 100 fields of view. The parasites were round and oval (88%) and rod-shaped (12%), 0.3-1.0 by 0.8-1.3 μ.

At the Kirov Kolkhoz 80 producing rams were examined. Theileria was found in 16 of them. Intensity of infection was 1-9 parasites per 100 fields of view. Parasites were round or oval, 25% of them being rod-shaped, 0.2-0.8 by 0.5-1.3 μ.

At the Yesil'sk Sheep Farm 46 sheep were checked. Theileria was found in 30 head. Intensity of infection was 1-15 parasites per 100 fields of view: 86% were round or oval and 14% were rod-shaped. They were 0.4-0.9 by 0.7-1.3 μ.

At the Derzhavin Grain Farm 36 sheep were examined. Theileria was observed in 2. Intensity of infection was 2-4 parasites per 100 fields of view. Up to 85% of the parasites were round or oval; 15% were rod-shaped. They were 0.4-1.0 by 0.8-1.4 μ.

Fifty-nine sheep were examined at the Svobodnyy Sovkhoz. Theileria was found in 11. Intensity of infection was 1-7 parasites per 100 fields of view. All the parasites observed were round or oval. They were 0.4-1.3 by 0.8-1.6 μ.

At the Ruzayev Sovkhoz 34 sheep were examined. Theileria was observed in 14. Intensity of infection was 1-11 parasites per 100 fields of view. Round or oval parasites made up 88%, and rod shaped ones 12% of the total. They were 0.3-1.2 by 0.6-1.6 μ.

At the subfarm of the Borovoye Sanatorium 67 sheep were checked. Theileria was seen in 3 sheep in an intensity of 1-4 parasites per 100 fields of view. Round and oval shapes made up 75%; rod shapes were 25%. The parasites were 0.3-1.2 by 0.8-1.3 μ.

In all cases the parasites in the erythrocytes were situated singly and near the edge.

In the opinion of veterinary workers and those who care for cattle, all of the cattle studied were underdeveloped.

The material obtained permits one to conclude that Theileria of cattle is more widespread in Kazakhstan than was previously thought.

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