

From The State Veterinary Laboratory for Northern Norway, Harstad,  
Norway.

ECHINOCOCCOSIS IN SLAUGHTERED  
REINDEER (*RANGIFER TARANDUS*)  
IN THE NORTHERN PART OF TROMS AND  
WESTERN PART OF FINNMARK COUNTIES,  
DURING THE WINTER 1975/76

By

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KUMMENEJE, KNUT and STEINAR WAAGE: *Echinococcosis in slaughtered reindeer (*Rangifer tarandus*) in the northern part of Troms and western part of Finnmark counties, during the winter 1975/76.* Acta vet. scand. 1976, 17, 359—362. — Echinococcosis in reindeer in Norway has been known for a long time. Meat inspection of 3712 reindeer in the winter 1975/76 revealed echinococci in 56 lungs (1.5 %). Forty-eight of the lungs were examined at The State Veterinary Laboratory for Northern Norway. Of these, 40 (∞ 83 %) contained well-developed cysts, while 8 (∞ 17 %) contained only collapsed cysts. Five lungs (∞ 10 %) contained both well-developed and collapsed cysts.

echinococcosis; reindeer.

In a recent publication by *Roneus* (1974) information about echinococcosis and the prevalence of echinococci in Sweden was presented. In his material, 1.6 % of the 1453 reindeer lungs examined were found to be infected with echinococci. On the other hand, *Skjenneberg* (1959) found cysts of echinococci in 9.6 % of the lungs investigated from 2204 Norwegian reindeer examined on slaughter in Kautokeino.

With this difference in the prevalence of echinococcosis in mind, special attention was given to the occurrence of echinococcosis among the reindeer slaughtered in Kautokeino during the winter 1975/76.

## MATERIAL AND METHODS

During meat inspection in Kautokeino in the period from November 1975 to March 1976, 3712 reindeer were examined, and 56 cases of lung hydatidosis were found. The lungs were frozen and 48 of them were examined at the State Veterinary Laboratory for Northern Norway at the end of the slaughter season.

The lungs with the hydatid cysts were examined visually, the cysts were measured, the cyst contents inspected, and samples from the cyst walls were fixed in 10 % buffered formalin for histology. Paraffin-embedded sections were stained with haematoxylin-eosin, periodic acid-Schiff (PAS) and van Giesons staining methods.

## RESULTS

The results of the examinations of the hydatid cysts are summarized in Table 1. The prevalence of echinococcosis in this material was 1.5 %. All the cysts were unilocular.

Of the 48 lungs examined, 40 ( $\approx 83$  %) contained well-developed cysts, and 8 ( $\approx 17$  %) only collapsed cysts. Five lungs ( $\approx 10$  %) contained both collapsed and well-developed cysts. Of the 98 cysts examined 9 ( $\approx 9$  %) were collapsed and shrunken. The number of hydatid cysts in the lungs varied from 1 to 9 (Fig. 1).

The results of the histological examinations correspond to those described by *Roneus* (1975).

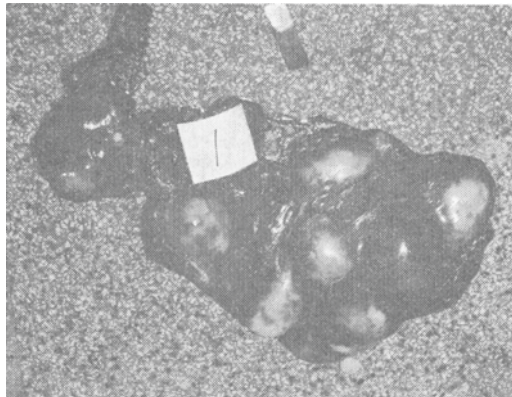


Figure 1. Echinococcosis, lung reindeer. Nine well-developed cysts, 4.5–9 cm in diameter.

Table 1. The number, size, and distribution of collapsed and well-developed hydatid cysts in the lungs examined.

Number of lungs with			Number of lungs with the following number of cysts			Number of cysts with the following diameters (cm)				
only collapsed cysts	well-developed cysts	collapsed & well-developed cysts	1	2-3	> 3	≤ 1	1.1-4	4.1-8	8.1-12	> 12
8	40	5	22	23	3*	3	5	1		
						7	40	33	8	1**

\* Max. number per lung — 9 cysts.

\*\* Max. diameter — 14 cm.

DISCUSSION

The prevalence of echinococcosis in reindeer in this material (1.5 %) is about the same as that reported from Sweden in 1974 by *Roneus* (1.6 %). However, as much as 83 % of the lungs

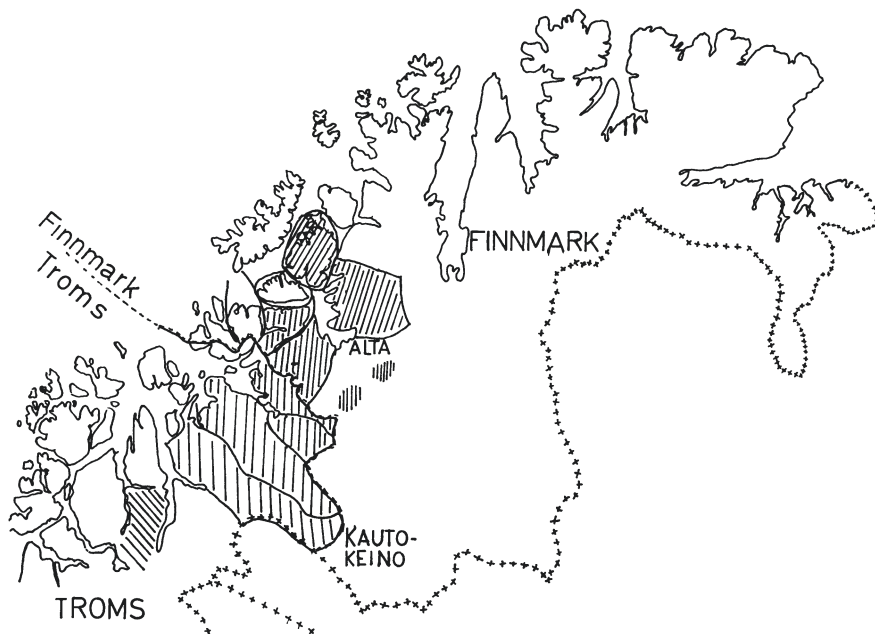


Figure 2. The coastal areas in northern Troms and western Finnmark where echinococcosis in reindeer was detected.

examined contained well-developed hydatid cysts, compared to less than 50 % in Roneus' (1974) material. Most of the animals slaughtered during this investigation were between 1 and 2 years of age. The hydatid cysts were found in animals which had their summer pastures on the coast of the northern part of Troms and western part of Finnmark counties, as shown in Fig. 2. Animals from some of the other coastal areas were not available for examination during this particular period. It is probable that the relatively new practice with centralization of the reindeer slaughtering has reduced the prevalence of echinococcosis in the reindeer population in this area, due to the lungs being unaccessible to the attendant dogs.

#### REFERENCES

- Roneus, O.*: Prevalence of echinococcosis in reindeer (*Rangifer tarandus*) in Sweden. *Acta vet. scand.* 1974, 15, 170—178.
- Roneus, O.*: Giant cell reaction against the laminated membrane of echinococcus cysts in reindeer lungs. *Acta vet. scand.* 1975, 16, 14—23.
- Skjenneberg, S.*: Ekinokokkose hos rein i Kautokeino. Faren for overføring til menneske. Bekjempelse. (Echinococcosis in reindeer in Kautokeino. The danger of transmission to man. Eradication). *Nord. Vet.-Med.* 1959, 11, 110—123.

#### SAMMENFATNING

##### *Forekomst av ekinokokkose hos reinsdyr slaktet i Kautokeino vinteren 1975/76.*

Ekinokokkose har vært kjent blant reinsdyr fra gammelt av. Av 3712 reinsdyr undersøkt ved kjøttkontrollen i Kautokeino vinteren 1975/76 ble det påvist ekinokokk-cyster i 56 lunger, dvs. 1,5 %, hvorav 48 ble undersøkt nærmere ved Statens veterinære laboratorium for Nord-Norge. Av disse hadde 40 (∞ 83 %) velutviklede cyster i lungene mens 8 lunger (∞ 17 %) bare inneholdt degenererte (kollaberte) cyster. Fem lunger (∞ 10 %) inneholdt både degenererte og velutviklede cyster.

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