Botulism in Canada: Caribou meat as a source of poisoning?

It is well established that sea mammals harbour *Clostridium botulinum* type E in their entrails and constitute the main source of botulism among Inuit. However, since 1972 three outbreaks of type E botulism among this ethnic group have been attributed to consumption of contaminated caribou meat,1-3 and in another outbreak caribou meat was identified as a possible cause.4 Since caribou are strict herbivores, the question is raised as to whether they can be regarded as a primary source of botulism.

To answer this question, 38 samples of caribou dung (14 that were lying on the soil and 24 that were lying on hard snow and had no contact with the soil), 8 samples of a mixture of soil and moss, and 5 samples of mud and sand from riverbanks were collected in the Fort Chimo, PQ area and analysed for the presence of *C. botulinum*. All the samples were treated with 90% ethyl alcohol for 1 hour, cultured in cooked meat broth for 5 days at 30°C and subcultured on egg-yolk agar. Lipase-positive colonies were subcultured in cooked meat broth for the production of toxin. The type of strain was determined by means of a specific antitoxin mouse protection test with A, B and E antitoxins (Pasteur Institute, Paris).

*C. botulinum* type E was isolated from one sample of mud and sand and from one of the samples of dung that had been lying on the soil. However, the latter sample was shaped like a pasty lump rather than having the normal beadlike form of all the other dung samples, which suggested that it might have been collected on wet soil near the riverbank or shore, where it might have been contaminated.

This observation strongly suggests that caribou do not normally harbour *C. botulinum* in their entrails and should not be regarded as a primary source of botulism. It is more likely that when poisoning is attributed to the consumption of caribou meat the meat has been contaminated through contact with soil or with meat or oil from sea mammals.

References