

MINUTESS OF THE 883RD MEETING OF THE BROODIE CLUB

FEBRUARY 16, 1993

Held in the Faunal Lab, South Borden Building

Chairman: Bili Carrick

Secretary: Norma Martin

There were 8 members present and 3 guests: Yvonne Benedell and Jalyia Rasatwira guests of Jim Bendell; David Mason guest of Howard Savage.

Minutes of the previous meeting were accepted.

The charge of \$40.00 per person for our dinner and meeting at the Faculty Club included tax, gratuity and dinner for the speaker.

Announcements:

Norm Martin reminded us that resolutions for the FON annual meeting and nominations for awards must be in by March 15. The same recommendation for an award as last year will be made.

Martin McNicoll displayed the 2nd volume of the 3rd edition of Threatened Birds of the Americas, commenting particularly on the size of the work.

Paul Aird showed two books, The Ontario Butterfly Atlas and The Butterflies of Manitoba.

Speaker

Our speaker, Dr. Charles McInnis, was introduced by Bill Carrick. Dr. McInnis is Director of Rabies Research Program for the Ministry of Natural Resources. He is also a dog breeder. His subject was Rabies Control in Ontario.

Southern Ontario is the rabies "capitol" of North America. The number of cases of rabies in Ontario is equal to one quarter to one half of the U.S. total. Rabies appeared in the central Arctic in the 1940s. It appeared on the prairies in '52 - '54 then died out. In southern Ontario it was widespread by 1959.

No one body has total jurisdiction over rabies because it affects wildlife as well as domestic animals and humans. About 2200 people per annum are affected at a cost of \$400 person for treatment.

Case numbers fluctuate. Red fox and skunk are the two main species affected. The number of other species is trivial. Foxes make up 42% of cases while skunks are 30%, cows 13%, dogs 4%, cats 4%.

Foxes are an urban animal, like raccoons. Their numbers are as high in urban areas as in the countryside. They appear relatively infrequently on the Shield.

In dealing with rabies there are three choices:

1. Do nothing. Outbreaks are time-limited. There are now no rabid foxes in Massachusettes in the absence of any control program.
2. Kill species that carry rabies. This could never be successful in a large area.
3. Vaccinate. Vaccinating by using bait is not easy. The virus is easily digested. Connaught's ERA vaccine has been used in dogs and cats for twenty years. SKUNKS and raccoons cannot be immunized by mouth.

SKUNKS

A city program to vaccinate skunks in Scarborough was carried out. The area lies between Lake Ontario and 401 and between Markham Rd. and Victoria Ave. SKUNKS were trapped. A sheet of plastic was used to protect the handler by covering the trap. The animal was vaccinated and a blood sample was taken. A high proportion of the population was caught, about 75%. The SKUNK population of metro Toronto has doubled in the last 4 years.

RED FOXES

Red foxes can be immunized by mouth. The virus must be live; killed virus is not effective. Twenty percent of the vaccinated foxes die of rabies induced by the vaccine.

A bait carrying the live virus vaccine has been developed consisting of oleo 59%, ~~microbonds~~ wax (same as on milk cartons) 32%, mineral oil 8%, synthetic chicken stock 1%, tetracycline 100 mgs/bait (as a marker). The bait remains viable after 5 weeks in the field.

The tetracycline remains in the blood for 8 to 12 hours. It appears in the canine teeth as fluorescent lines and indicates the number of days the fox ate the bait. Trappers cooperate and provide carcasses.

In considering the distribution of the bait it was decided that the use of Cessna planes was logistically not feasible - too many planes, too many people, too much time and too much money would be required. Twin Otter planes were found to meet the requirements for the project.

After some experience following concession roads and using maps, a new flight control system was designed. The Twin Otter was equipped with technology that keeps the plane on a determined line and calculates the exact speed at ground level. Dropping of the bait is controlled so that it does not land on houses, roads, etc. The plastic-wrapped packages of bait are placed on a conveyor belt over the camera hatch in the plane. They are dispatched at a predetermined rate, e.g. 7 baits per second. People could not do it. More bait can be dropped this way with better results at a cost of \$1.30 per package. The best time to drop the bait is at the end of a rabies cycle. In southern Ontario 580,000 baits have been dropped in 25,000-30,000 sq km.

Of the foxes that have been caught 60% have tetracycline. Some

foxes with tetracycline were found in areas where no bait had been dropped indicating their travelling habits. A number of foxes not showing tetracycline did have rabies antibodies. This indicates that the estimates of vaccinated foxes, based on the tetracycline marker, could be low.

A vaccination program interrupts the regular cycle and lowers the number of rabies cases. Rabies falls to a low level consistently in eastern Ontario. It appears first in foxes then in skunks. In '91 fox rabies was down but the incidence in skunks did not decrease until '92. Skunk rabies is not maintained with infection from foxes.

The program has been successful and will continue in eastern Ontario, extending to the rest of Ontario as well as to Quebec and New York State.

RACCOONS

A raccoon strain of rabies appeared in Virginia in '79. It is now 50 km from Fort Erie. More baits per km are required for raccoons. A raccoon rabies outbreak could begin later this year in southern Ontario.

Raccoons are an important source of fur in U.S. Trappers were surprised to find that the density of raccoons in urban areas is twice that in the countryside. There is a better food supply in urban areas.

Questions

Is there any coordination of the work with New York or Quebec?

Quebec is in shock. There is great interest but no money. New York is the same. They are setting a budget. If we had bait for raccoons it would be better for us to vaccinate in New York now. Does anyone know how many foxes there are in Ontario?

No.

Why a 4 year periodicity?

The pattern settled down to 4 years. There are local variants of DNA patterns, local adaptation of the virus. There may be variations in the foxes, too.

How are people protected from the bait?

No one has had to be given post exposure vaccination. A few inconsequential cases of being hit by a falling bait have been reported.

What is the cost of the program?

It costs \$8.00 per sq km to put out bait.

What are the hazards of becoming infected with rabies virus?

One percent of carcasses handled by trappers are rabid. The trappers wear rubber gloves. The virus has to enter through broken skin. In the Arctic, rabies wipes out the dog population every 15 years. There are very few records of people with rabies. Aerosol transmission can happen. The virus can enter through the nasal passage. Bats carry a number of strains of the virus. Recently, 3 of 5 deaths in Canada were caused by a bat strain. Human deaths are caused by bites. The virus enters the muscle

tissue but soon travels to nerves.

Does the virus survive in the saliva of a rabid animal?

The virus may live for a day in saliva. It lasts longer in cold temperatures. In summer it dies in 4-6 hours.

It has been passed in cornea transplants which are now monitored for the virus.

Is rabies found in other animals?

Relatively few rabid lynxes have been found, an infected fisher last year and, in '89, a rabid otter attacked a cottager in Ontario. One or two rabid beavers have been reported in Ontario this year.

What is the incubation period?

The incubation period is 25-30 days.

Gulls do not like the bait. Crows do.

Monoclonal viruses teach us there are different strains. The raccoon strain appeared in Florida in the late '40s and early '50s. It is not known whether it was new.

Not much is said about it in the Old World?

It appeared near the Russian-Polish border in the late '30s. By '67 it was in France, Holland and Belgium. Since '75 it has not moved from northern France. Dog rabies is in Russia and now in Finland. In tropical countries from 5,000 to 20,000 people die from rabies. It is probably the mongoose rabies in dogs. Countries free from rabies are Great Britain, Japan, Australia, New Zealand and the Oceanic Islands.

Bendell thanked the speaker for a fascinating presentation describing a fine example of fundamental applied biology.

Notes and Observations

Bendell reported seeing a brown thrasher at their feeder. He also displayed a page of the Toronto Telegram, Wednesday, December 29, 1954 on which appeared an account by Jim Baillie of the Christmas bird count. The names of a number of Brodie Club members appeared.

de Matteus reported seeing an immature bald eagle near Owen Sound.

Carrick recently saw trumpeter swans in Comox, B.C. Ducks Unlimited pay farmers \$25.00 per acre to plant cover crops in the fall for birds to feed on in the winter.

A trumpeter swan, #101, is now at Pickering and has a mate.

Savage reported that he had been asked to examine a hair retrieved from the 18,000 b.p. level in New Mexico. It was the hair from a human.

McNicoll was in the mountainous area of Cuba, west of Havana. He saw a Cuban solitair and olive capped warbler. Four hundred and fifty birds were banded.

McInnis reported a red-bellied woodpecker at his feeder in Uxbridge.

The meeting was adjourned.