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LEAD POISONING IN DUCKS OF SOUTHWESTERN IOWA DURING THE WINTER OF 1938-39

BRUCE F. STILES

Lead poisoning in ducks is caused from leaden pellets of shot in the gizzard. These are picked up with other particles of grit from the marginal shallows of water, in areas that have been shot over by hunters. A paralysis of the gizzard and that part of the digestive tract just in front of it, prevents food from passing through the body. The bird wastes away from starvation and becomes so emaciated that it is literally skin and bones.

It is possible that some of the more vigorous birds are able to carry the lead shot and survive. Many of the specimens of sick ducks examined were found to have a large number of parasites. This may have been a contributing factor in reducing their vitality beyond a point that could withstand the lead poison.

The first report of lead poisoning to come to my attention in 1938 was on November 30th at the Carr Lake Refuge in Lewis township in Pottawattamie County, Iowa. This had been a concentration point for ducks during the hunting season. Many ducks were on the lake and two dead birds were found, a Mallard (*Anas platyrhynchos platyrhynchos*) and a Gadwall (*Chaulelasmus streperus*). Together with some specimens picked up at Brown's Lake, these were sent in to the laboratory for posting. An autopsy of these specimens indicated they had died from lead poisoning.

The abundance of feed in the adjoining fields and the open weather kept the ducks there all winter and provided an opportunity to carry on an experiment in feeding. The ducks by the first of January had settled down to a resident flock of about four thousand Mallards and one hundred and twenty-five Pintails (*Dafila acuta tzitzihoa*).

The number of sick ducks unable to fly, or able to fly only short distances, remained constant at about one hundred. I estimated that about ten or twelve ducks died each week up to February 1st when the number seemed to increase slightly. On February 3rd I picked up ten Mallards and sent them to the laboratory. The report came back as before, that they had died from lead poisoning.

On at least two occasions Mr. Clyde Licking the U. S. Game

Management Agent from Omaha, came over and collected specimens of dead ducks which he sent in to the Biological Survey laboratories for posting. He told me their findings indicated they had died from lead poisoning.

It may be that poisoning was no more common than usual. Had this same number of ducks died in isolated and scattered areas to the south, they may not have been noticed. The poisoning was such a slow process that during a cold winter that drove the birds farther south, many could have reached the gulf coast.

That these ducks did not pick up the lead on the Refuge is quite certain. There has been no shooting on Carr Lake since the Fall of 1931. Leaden pellets would by 1938 be buried deep in the soft ooze that covers the entire bottom. On the other hand, it is certain that lead poisoning was visibly more apparent here, and if as commonly supposed more ducks suffered from it than is usual, the explanation may be as follows: Water levels have recently been restored in many lakes and marshes along the central flyway. These inundated shore lines and shallow bottoms, having been baked dry and hard in previous years, would support shot from the guns of hunters and make it available to ducks foraging for grit.

More than one thousand pounds of shelled corn and wheat were put out on the Refuge for the sick ducks during the month of February, without any apparent improvement in the condition of the birds.

To determine what results could be obtained by putting sick ducks in warm quarters with plenty of food and pure water, I picked up 107 sick Mallards during the next week. Twenty of these were given castor oil with a medicine dropper as the first measure. The ducks were separated into seven groups and various types of food were tried. In spite of care, all but twelve had died by March 20th.

The gizzards of all dead birds were examined and with a few exceptions they contained shot. In most instances the gullet was distended with food. All ducks that died were greatly emaciated. The average weight of ten ducks at death was one and eight tenths pounds.

The maximum number of shot found in any gizzard was 16. Many shot were worn away to the size of a pin head. Likely there were many smaller particles that escaped notice. On March 19 a Mallard drake died that had been picked up on the Carr Lake Refuge on February 8. Its gizzard contained one pellet of shot

about the size of a pin head. It is evident that this shot was swallowed by the duck previous to February 8, which would indicate that in some cases ducks did not succumb to the poison for a minimum of five weeks. This would substantiate the theory that ducks picked up the shot en route rather than at the Refuge.

On March 20, 1939, the surviving twelve ducks were banded and released. The identity of bands was "Iowa" 858 to 869 inclusive.

In conclusion it would seem that feeding is not a factor in saving ducks that have become sick from lead poisoning.

It is possible that some captive birds could be saved by feeding them a liquid or soft diet which would be capable of passing through the paralyzed area of the digestive tract. It would only be possible to carry this out on a small scale and so it would be of little practical value.

ROUTE No. 3,

COUNCIL BLUFFS, IOWA.