Acute Toxic Indigestion in Cattle

By W. B. Durrell*

APPROACHING is the time of year when indigestion of ruminants will necessitate frequent attention by the veterinarian in practice. In this article the writer's purpose is to discuss an etiological factor which often causes atony of the forestomachs induced by overloading of the rumen with indigestible substance which leads to impaction of the rumen, tympany, toxic absorption and often gastro-intestinal catarrh.

Every fall one is called to treat individual cows or whole herds which have broken into or been deliberately allowed access to corn fields where they eat, without restriction, unlimited quantities of green, frozen, mouldy or partly decomposed stalks and ears of corn. Naturally the fall pasture is usually dry and somewhat untasty, with the consequence that either the farmer, through urge for increased milk production, or the cattle in search of succulent food, makes the harvested corn-field a temptation.

In the author's experience these cases occurred where canning-factory corn is grown. There, it was customary to harvest the ears of corn for sale, and then leave the stalks standing to dispose of later. Sometimes an owner would choose to pasture the stalks, or else harvest them in which case the cattle often broke into the field before harvesting could be done. In either event a few head or a whole herd would gorge themselves with frozen or partly decomposed stalks and ears (commonly called nubbins).

For instance two years ago this month after having been consulted for several individual cases, we were called one morning to a herd, where in a total of sixteen Jerseys, five were down, nearing death's door, and four more were staggery, stupid and bloated. The owner had deliberately turned this herd into the cornfield a day previously, following harvesting of the ears for sale. Needless to say the barnyard scene was a discouraging one for all of us, but in those cases no time could be spared, and we soon gave the farmer and his help plenty to do, in assisting us. By night six were dead, while the rest were recovering. Three other such instances since then warranted our assistance and each furnished us with lots of work for a few days.

Symptoms of such cases are characteristic. In the early stages the animals have a stupid appearance, dull eyes, and staggery gait, due to the toxic absorption taking place. Left flank severely distended. Pulsations 45-70; temperature elevated one or two degrees; respirations 35-60, and short; mucous membranes about normal. Pain may be evinced, and sloppy evacuations occur. Of course lactation rapidly decreases.

As a case becomes more advanced and the degree of toxemia increases, coma-like symptoms develop, a marked incidence of nervous derangement. Vomiting occurs and there are frequent watery bowel evacuations of greenish color, often containing kernels of corn or portions of the cob. Later still there is inability to rise, a milk fever attitude is assumed, with the head outstretched and leaning to one side as revealed in cut. In calves Opisthotonus and convulsions are occasionally seen.

* Ontario Veterinary College, Guelph, Ontario.

[243]
Latter stages and impending death are revealed by a sub-normal temperature, imperceptible pulsation, cyanotic (bluish discolouration) mucous membranes, grunting palpation of the left abdomen manifests a tense wall stretched over a doughy mass. Green watery material exudes from the nostrils and rectum. Such, are these pitiful cases, the result of prolonged toxic absorption from the heavy mass of fermenting corn in the rumen.

The course of the disease is variable. Death may occur within twenty-four hours of ingestion, or as late as seventy-two hours after. Symptoms develop in twelve to eighteen hours and if the animal survives, a week is required for good recovery.

Diagnosis is usually not difficult because often the history and symptoms are diagnostic. Post-mortem will substantiate one's diagnosis as the impacted rumen and enteritis are unmistakable.

We always found it advisable to decide quickly whether treatment should be medicinal or surgical. If the case was in its early stages and the rumen not too fully engorged, medicinal therapy was undertaken. However, where cases were advanced, and the rumen was fully impacted we performed "rumenotomy". Occasionally one arrives just as the cow is dying, then a "gash with the knife to allow a gush of the rumen content" is the immediate resort. We have found that in a few of those cases, though the incision was slow to heal, the cow made a satisfactory recovery.

Indications for medicinal therapy are toxemia, control of fermentation and the evacuation of the digestive tract. For toxemia, G.M.T. solution (Haver Glover) or 20% calcium gluconate solutions intravenously are excellent. In addition intramuscular injection of a cardiac and pulmonary stimulant such as 15-25 c.c. of camphor in oil should be given. Inhalations
of strong ammonia water and drenches of luke warm strong coffee are good, especially the latter.

Control of fermentation of course, may be assisted by trocar and canula, or through anti-ferments. As a carminative and anti-ferment the author prefers pine-oil and turpentine in equal parts, administered in two ounce doses by drench in milk or by capsule every two hours, for at least eight hours. Frequently much larger doses are required and are safe. G.M.T. tablets and methylene-blue apparently have a detoxifying effect and are useful in cases of this nature.

Evacuation of the digestive tract is attempted by restoring the rumen contractions, and administering laxatives. Rumenatoric tablets consisting of barium chloride, tartar emetic and strychnine, given in half pint of water every six hours are helpful. Massaging or kneading of the left flank from below upwards for ten or fifteen minutes at a time is recommended. As a laxative magnesium sulphate or mineral oil can be used. Either should be given by stomach tube and maximum dosage employed. Sometimes it is best to allow for considerable time to evacuate the rumen, as severe purgation is detrimental to the handling of these cases.

“Rumenotomy” is a very satisfactory technique for hastening evacuation of the rumen. The operation is quite within the means of everyone, and post-operative complications are infrequent. The author prefers a small coffee can or sugar scoop for “emptying” the rumen during this operation.

Following either method of treatment anorexia and dullness will require attention. A stomachic such as nux vomica, ginger, and ferrous sulphate given two or three times a day is satisfactory.

Persistent nursing and treatment of these conditions is the only way to produce encouraging results. They can be obstinate.