On "*The Atlantic Cattle Trade*," by S. G. MOORE, M.B.,
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ABSTRACT.

THE date of commencement, growth and present importance of the trade, countries from which cattle are brought, means of transport, veterinary inspection of the cattle on behalf of the U.S. Government; its object and efficiency.

The cattle ship, size and number; regulation with regard to:—

(a) Registration. (b) Cattle pens. (c) Space per head. (d) Number of decks on which cattle may be carried. (e) Protection of cattle from weather. (f) Ventilation. (g) Hatches. (h) Food carried on deck. (k) Water supply. (l) Number of attendants. (m) Tethering of cattle. (n) Provision of foot-locks. (o) Strength of materials for cattle fittings.

Inspection of, object of regulations secured, percentage of deaths among cattle in transit, description of cattle deck when occupied, absence of provision for cleansing, suggestions.

Regulations on arrival to exclude contagious cattle diseases, prohibited countries, "free" countries, foreign animals wharves, arrangement, etc., detention for inspection of animals from "free" countries. Conclusion.

The Atlantic cattle trade, at this time of such magnitude and importance, is of comparative recent growth, the first cargo of live cattle brought to this port from the American continent having been landed in the year 1874—just twenty years ago. The numbers carried at first were quite inconsiderable, and owing to heavy losses due to deaths in transit, the trade for some time gave little promise of reaching anything like its present proportions. In the sixth year after its commencement we find that 31,800 animals were landed, and in 1892, 202,064. That is to say in thirteen years the volume of this branch of commerce had increased nearly seven-fold. At the present time a fleet of no fewer than 71 large steamers is engaged in the trade, and from them cattle were landed at the Woodside and Wallasey lairages on 414 occasions during last year, discharging an average of 500 head on each occasion. A single steamer brought on one voyage 1170 beasts.

The majority are from the United States, but considerable numbers come also from Canada and the Argentine Republic; thus in 1892 of the total number landed here 74·5 per cent.

were from the former country. During the same period of the total exported from the United States, Liverpool received 40 per cent.

The animals, bred and raised largely in Illinois, Indiana, Texas, and Wyoming, are sent partly by road and then by rail to certain centres known as stock-yards, of these the principal are at Chicago.

Here each is submitted to a careful inspection by Veterinary Surgeons, who are officers of the U.S. Department of Agriculture. These gentlemen obtain and record the history of each animal, and having done so attach to the ear a numbered tag. The number corresponds to that in a record book kept for the purpose, in which are entered:—

(a). A description of the animal.

(b). The state, district, and ranche where bred and raised.

(c). Name of the breeder and the owner.

The beasts thus collected are dispatched by rail to the sea-board where, after a delay of twenty-four hours imposed by law, and a second veterinary inspection, they are placed on board the cattle ship.

This system of tagging and veterinary inspection is completed by an inspector stationed at the ports of debarkation, who examines the animals on board the vessel on arrival, and again, so far as practicable, as they are slaughtered.

In case of disease being present he examines, and obtains specimens of the viscera, and makes a report of the result.

The object of the system is to enable the department to trace cases of contagious diseases to their origin. Thus, if an animal on landing or slaughter were found to be suffering from such disease, the veterinary inspector here would cable the number marked on the ear-tag to the head of his department in the United States, who, by reference to the records kept at the stock-yard, would be able to ascertain on what ranche the animal had been raised, and also knowing the date and route by which it had travelled, the animals with which it had been in contact. It speaks well for the efficiency and reliability of this system that a correct description of an animal, with a statement of its place of origin, was received in Liverpool $4\frac{1}{2}$ hours after the number taken from its tag had been cabled to headquarters.

The vessels engaged in the Atlantic cattle trade are large and powerful steamers, ranging from 2,000 to 5,000 tons gross register. They carry other cargo, but are specially fitted to accommodate cattle in conformity with regulations made by the Department of Agriculture, under the authority of an Act of Congress of the U.S., dated in March, 1891.

The following is an account of their chief provisions :—

Each vessel must be registered.

A certificate of registration is given, and is liable to cancellation upon violation of the regulations.

The cattle must be enclosed in pens, not more than four in each, there must be a passage or alley way between each row of cattle not less than 18 inches wide, and each animal must be allowed a deck space of 2 feet 8 inches by 8 feet.

Cattle may be carried on three decks, but where it is intended to carry on a third, special permission must be obtained, and special arrangement made in respect of the lowermost. If animals are carried on a spar-deck the pens must be covered in, so as to afford protection from weather.

With regard to ventilation :—

Each compartment must have at least four bell-mouthed ventilators of not less than 18 inches inside diameter, with tops exceeding 7 feet in height, two situated at each end of the compartment. Cattle may not be carried in alley-ways alongside engine-rooms unless the latter are sheathed with wood $1\frac{1}{2}$ inches thick, leaving a 3-inch air-space. The hatches covering decks on which cattle are carried must be kept clear of other cattle and merchandise.

Only two days' feed may be kept on deck ; it must be properly covered and used first.

All vessels must carry not less than four hogsheads of over 100 gallons capacity for each 100 head of cattle. These must be filled with fresh water before sailing and refilled as emptied.

One attendant for every twenty-five head of cattle must be carried ; three-fourths of the men must be experienced, and have made previous trips in the same capacity.

Each animal must be tied by the head with a $\frac{3}{4}$ inch rope, which may not be used more than once.

Foot-locks or battens must be provided, and securely fastened to the deck at specified intervals, and ranging fore and aft of the ship.

The strength and nature of the materials of which the cattle fittings are made, as well as their arrangement and method of fixing, are carefully detailed, and special inspectors are appointed at the port of embarkation to see that the foregoing regulations are duly complied with.

It is barely necessary to remark that the arrangements on board most of the steamers are in excess of these requirements. The allowance of water is greater (some steamers are fitted with condensers) more ventilation area is provided, and the lower decks are specially lighted, so that the tending of the beasts during the voyage may be better performed.

The object of the regulations, to ensure the safe transport and humane treatment of the cattle, is well attained. They lie down, feed well, and arrive in good condition. The total numbers lost from all causes (heat, exposure, and accident) represented in 1891 a percentage of 1·6, in 1892 0·87, while for the first eight months of 1894, it has fallen to 0·21 per cent. A result which is undoubtedly very creditable to this branch of the cattle trade.

On descending to the deck of a vessel carrying cattle, at first there is little to be seen through the prevailing gloom, but after a while one can perceive extending on all sides, and standing or lying closely together, row after row of oxen, four deep across the ship, and above their backs a forest of wooden stanchions. The first row is along the side of the vessel, next comes an alley-way, and then another row, the heads of animals in each being towards the alley-way; and so on to the other side of the ship. Between every four cattle, stout planks are fixed between the upright stanchions, forming the pens.

One thing is entirely neglected on cattle ships—viz.: the removal of dung. From the time the animals are taken on board, until they leave, no provision for cleansing is made. As a consequence, a condition arises which can better be imagined than described. It is enough to say that a cattle-steamer often makes her presence known to the olfactory sense while she is yet a considerable distance away, and that frequently the ammoniacal smell between decks is simply overpowering to those not inured to it. I have not, however, known the eyes of cattle to be influenced by it to such a degree as to cause distinct inflammation of the conjunctiva.

This neglect to cleanse the cattle surely ought to be remedied. By means of the ordinary appliances found on board every steamer—I refer to the steam pumps and hose—the pens might be washed down every morning. The upper decks would drain directly overboard through the scuppers, and conduits having their apertures covered with gratings might be carried from the lower decks to the bilges, which could be pumped out in the usual manner.

On arrival here the animals are subject to another set of regulations, framed with the object of preventing the introduction into this country of contagious cattle diseases.

For this purpose stock-raising countries are arranged in three divisions, viz.:—

Those from which cattle may be landed and pass into the United Kingdom.

Those from which cattle may not be landed at all, and

Those from which cattle may be landed for slaughter.

The only countries in the first division are New Zealand, Iceland, Channel Islands, and the Isle of Man; cattle imported from these may be disembarked at spaces technically called Landing Places for Foreign Animals, and after a detention of twelve hours for purposes of inspection, may travel to any part of the Kingdom without further restriction, but the cattle and the vessel in which they are brought must not have been in, nor in communication with, any port or place in any country from which the free importation of cattle is for the time being prohibited, within periods the duration of which is specified for each country affected.

The cattle-raising districts from which the importation of stock is entirely prohibited are:—All European States, Morocco, Malta, Natal, Zululand, and the Portuguese State of East Africa.

The third division comprises all other countries, and includes those from which practically all the foreign cattle imported are brought. Such cattle must be landed at certain enclosed spaces, technically—Foreign Animals' Wharves, and must be slaughtered within a period of ten days, exclusive of that on which they were landed.

Until the year 1892 cattle from Canada were not subject to slaughter on landing, but in that year owing to *pleuro pneumonia* having broken out among Canadian cattle landed here, it was found necessary to cause them to be landed at Foreign Animals' Wharves, where, of course, they must be slaughtered.

Foreign animals' wharves are under the direction of an Inspector of the Board of Agriculture, and are subject to stringent rules providing for the reception, disposal, moving, feeding, watering, and slaughter of cattle landed thereat, as well as for cleanliness, the disposal of litter, manure, and offal, and when necessary for disinfection. Special rules to meet possible outbreaks of each of the contagious diseases of cattle are also framed.

Cattle landed from "free" countries are detained for inspection for twelve hours, after which period they may proceed into any part of the country, but manure, litter, fodder, &c., are liable to the same regulations as if they appertained to animals from other places, and in case of disease being detected among them they are liable to immediate slaughter.

On arrival in these wharves, cattle are placed in large pens arranged in rows with a broad alley-way between, are provided with water, and unless they are to be slaughtered immediately, with fodder also. They are left at rest for at least ten hours prior to being killed, otherwise they would bleed imperfectly, and the flesh would not set well or keep, so that even if placed

promptly in a refrigerating chamber the flesh would rapidly become dark in colour and unsaleable. From these pens they are driven to the slaughter-floor whence after killing and dressing they can be run, slung on hooks by means of pulleys, without further handling, to sale rooms, refrigerating chambers, carts, or to railway trucks, for distribution throughout the country.

In conclusion I wish to refer to an aspect of the subject which, though more particularly of interest to economists, indirectly is of interest to all concerned in problems having relation to the communal health, since to *this* an abundant supply of good food is of the greatest importance.

In the cattle brought to England from the American Continent we have a large, and an increasing supply—of excellent quality—of one of the great food stuffs, and it is to the last degree necessary that such supply should become available to the people at moderate prices.

Now, the killed and dressed carcasses of beef can be purchased wholesale in the lairages at prices ranging between $3\frac{1}{2}$ d. and 5d. per pound, and one cannot help feeling, especially in view of the large quantities dealt in, that the prices realised in the retail butchers' shops do not bear that close ratio to cost which obtains in other trades where the quantities dealt with are large, and where the turnover is also rapid.

On "*The Ship considered as a Dwelling*," by FELIX B. O'FLAHERTY, M.B., D.P.H.

ABSTRACT.

IN comparing the house at sea with the house on shore, we notice that there are the same sanitary evils to be avoided—dampness, darkness, foul air and dirt.

The house on shore is freed from dampness by draining the site and by suitable construction. The other evils are avoided by proper arrangements.

At sea the site cannot be drained. Dampness is always present, but it must be kept down to the lowest possible amount. It was shown last century that the driest ships of a squadron showed the smallest sick lists, just as Buchanan showed that to drain the site of a house was to reduce the death-rate, especially the phthisis death-rate. In accordance with this fact there