

establishment of refrigerator vessels for the production of cool air. What is the extra charge for the carrying of products on these vessels?

The MINISTER OF AGRICULTURE. I find that the Allan Line has three steamers, the Thompson Line five steamers, the Donaldson Line one, and the Elder Dempster two steamers, making altogether eleven steamers fitted up with cool air circulation. Others have been fitted up since, without any contract, by the ship-owners themselves. The rate they charge is ten shillings per ton on cheese and the equivalent to that on apples.

Mr. SMITH (Wentworth). What is the difference between these two plants, cold storage and cool air?

The MINISTER OF AGRICULTURE. It is practically a difference in temperature. In the cold storage plant, the chambers are shut up entirely. In the cool air plant there is a circulation of air and the temperature is only required to be down to sixty. In the cold storage it is much lower.

Mr. SMITH (Wentworth). It will cost much less to keep the temperature at 60 than 30 or 32.

The MINISTER OF AGRICULTURE. The arrangement for circulation and ventilation costs more. The air has to be cooled and forced through, and there is constant change of air, whereas, in the cold storage chambers, which are tight, they get the temperature down to a certain point and it takes but little to keep it there.

Mr. SMITH (Wentworth). That might account for the bad carrying of freight in cold storage chambers. There is no circulation of air. In our private cold storage establishments, we do have a circulation of air. What steps have been taken to ascertain with certainty whether in the forced air plants the circulation of air is kept up during the voyage?

The MINISTER OF AGRICULTURE. We have thermographs in these as in the cold storage chambers. Consequently, we know the temperatures.

Mr. SMITH (Wentworth). I have some figures summarizing certain reports of the thermograph records where there was ventilated storage. The average minimum temperature was 4.54, and maximum, 67½. And in eleven records, where the cold air plant had been provided, and for the benefit of which the shippers paid ten shillings per ton extra, the average minimum was 55½, and maximum 66 4-11. So, there was practically no difference. It is true that the eleven instances I have averaged were those in which the temperature was highest out of twenty-three. Yet the cooled air system costs very large sums to the government for the installation of the plant,

and the shippers paid ten shillings a ton extra, yet the practical result is that there is no lower temperature than is secured by the system of ventilation.

The MINISTER OF AGRICULTURE. I have not the data before me which the hon. gentleman (Mr. Smith, Wentworth) has. I think he will find that the figures depend upon the period of the year and the weather. If in one case the figures were for the summer, and in the other for the autumn, that would explain the matter.

Mr. SMITH (Wentworth). The cases of ventilated storage I referred to were: August 19th and September 23rd, the 'Sarmatian'; August 21st, the 'Importer'; August 1st, the 'Numidian'; August 8th, the 'Pomeranian,' and October 10th, the 'Commerce.' The cases of cold storage were September 26th, September 17th, July 18th, August 24th, August 28th, August 1st, July 18th, July 4th, July 11th, June 27th, and June 19th. So, the figures cover practically the same season.

The MINISTER OF AGRICULTURE. I may say that last season was a particularly cool season, and did not show the full effects of this system of the circulation of cool air. That was remarked by shippers last year, and, as a matter of fact, many of the cheese shippers did not send goods in cool air chambers because of that fact.

Mr. SMITH (Wentworth). Has the minister taken definite steps to ascertain whether this forcing of air through the holds has been properly carried out? My opinion has always been that although steamers put in this plant, which costs very little, in many cases the plant is not operated. Of course, in many cases it is, and excellent results are secured. I know of many cases where the results have been observed and most favourably commented upon on the other side. I have known cases of apples, the same variety picked at the same time and packed at the same time by the same parties, taken from the same storage at the same time, but shipped in different compartments of the steamer, yet some coming out in good condition and others in very bad condition. It must be that there is a difference in the storage on the vessel. I cannot explain it except on the idea that in some compartments the ventilation system is carried out, thus securing low temperature where the apples are, besides having pure air, while in other cases the hatches are battened down and the fans not used. I have suggested to the minister that it is easy to ascertain whether the fans were operated or not. All that is necessary is to put a thermograph where the apples are and another on deck. If the two correspond, that is proof that the fans are operated.