

PUBLIC HEALTH.

THE SUPERVISION OF MILK PASTEURISING PLANTS.

An important Report on the Supervision of Milk Pasteurising Plants, by Sir Weldon Dalrymple-Champneys, Bt., M.A., D.M., F.R.C.P., one of the Medical Officers of the Ministry of Health, has been published under the authority of the Ministry by His Majesty's Stationery Office (price 1s. 3d. net).

The practice of pasteurising milk has been increasingly adopted in recent years as an aid to distribution especially in large towns, since it not only improves the keeping qualities of the milk, but if properly carried out destroys any pathogenic organisms in the milk while preserving as far as possible its nutritional value.

The author states:—"I have made extensive inquiries into the subject of commercial pasteurisation and have inspected a large number of pasteurising plants of different types throughout the country. I have found that many of them are either imperfect in design and construction or are improperly and inefficiently operated and controlled so that the requirements of the Milk (Special Designations) Order are not secured. The following are common causes of failure to secure efficient pasteurisation:

(1) Lack of knowledge among manufacturers and users of the requirements governing the construction and operation of pasteurising plants.

(2) Failure of manufacturers of efficient plant to insist on a rational 'lay-out' of the plant and to incorporate efficient automatic temperature-control devices in their standard specifications, a false sense of security being sometimes engendered by assurances of accurate calibration of the plant.

(3) Attempts to construct plants from individual units of different makes unsuitable for combination or faultily combined.

(4) Failure of the local authority to insist on reasonable requirements for buildings, plant and methods of operation before licensing under the Milk (Special Designations) Order, 1923.

(5) Inadequate knowledge and experience on the part of inspectors responsible for the supervision of pasteurising plants.

The consumption of pasteurised milk is rapidly extending and an increasing number of consumers is coming to rely upon pasteurised milk as a safe milk; consequently it becomes ever more important that such milk should be pasteurised properly so that the term pasteurised milk should really connote a safe milk. At present there is reason to believe that pasteurisation is not always efficiently performed, and consequently does not always provide an efficient safeguard against the danger of infecting the consumer with pathogenic organisms which may be present in the milk, but there is no doubt whatever that pasteurisation carried out in such a way as to meet the requirements of the Milk (Special Designations) Order renders milk safe. Milk, however, can be recontaminated with pathogenic organisms after pasteurisation, an important possibility which is dealt with later in this report.

The objects of pasteurisation are:—

(1) The destruction of the pathogenic micro-organisms which are sometimes present in milk.

(2) The postponement of souring."

The very complicated processes necessary to gain this end are then explained in detail.

The author also lays great emphasis on the importance of bottle washing. He writes: "The use of clean bottles if the milk is bottled and not sold loose is of the greatest importance to the dairyman who may have properly pasteurised milk spoil by unclean bottles.

The following points are apt to be overlooked:—

(a) Small particles of hard dirt which cling to the bottle, especially at the junction inside between the side and the bottom of the bottle, though easily overlooked in an otherwise bright bottle may contain sufficient micro-organisms to cause serious contamination of the milk.

(b) An efficiently cleaned bottle may easily be recontaminated by various means before issuing from the bottle-washing machine.

(c) The sterilising effect of any agent such as detergent, hot water or steam, depends upon the time during which it acts upon the bottle. Belief in the almost magical properties often attributed to 'live steam' applied for a few seconds engenders a false sense of security.

(d) Brushing out a bottle with a brush previously used for other bottles containing sticky deposits is apt to contaminate the bottle rather than cleanse it.

There are many different types of bottle-washing machines on the market, some primarily intended for brewery work rather than for milk bottles."

The author insists that "a preliminary *soaking* in detergent is absolutely necessary for the removal of sticky dirt. This soaking may be preceded by treatment with water jets, but if this be done it is advisable to use a *cold* water jet before hot water in order to prevent the coagulation of milk albumen. It should be remembered that milk bottles after the milk has been emptied out may be used by customers for all sorts of purpose, some of which entail contamination of the bottles with micro-organisms of urinary and faecal origin. The detergent used must contain at least 1 per cent. of caustic soda or its equivalent, must be at a temperature of at least 130° F. and must be in contact with the bottle for at least ten minutes. It is important to maintain the strength of the detergent at the required level and to change it frequently when it becomes foul."

A BOVINE ANTI-TUBERCULOSIS VACCINE.

Professor E. C. C. Baly, speaking at a Liverpool University graduation ceremony on May 24th, said the laboratories for the production of vaccine to immune cattle from tuberculosis might be erected on Merseyside.

The Professor said further that "a number of years ago, Mr. Henry Spahlinger had announced the discovery of his method for the treatment and cure of tuberculosis. In February, 1932, he had published a formula for the preparation of his bovine anti-tuberculosis vaccine.

"A series of tests in Switzerland and then in Norfolk had established the complete cattle-immunising efficacy of the vaccine.

"The first independent official test in this country has been carried out by the Government of Northern Ireland, and my friend, Sir Lynden Macassey, tells me that the final report will shortly be published.

"I am able to state that the vaccine has proved its complete ability to immunise cattle against test doses of bovine tuberculosis virus many hundreds—indeed, many thousands—of times in excess of ordinary lethal doses.

"So great a confidence has been established that Northern Ireland, I understand, is considering making compulsory vaccination of all calves at birth. Furthermore, the preparation and supply of the vaccine to the whole world are under discussion."

Professor Baly added that by bovine vaccination one great source—if not the greatest source—of human tuberculosis would be eradicated.

TELEGRAPHIC ADDRESS.

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