Part I of the Schedule describes the conditions of pasteurization. The temperature–time relationship of 148° F. (64.4° C.) for 2½ minutes was worked out experimentally both by laboratory experiments and in a commercial plant. Such treatment eliminated the most heat-resistant salmonella strain so far described, *S. senftenberg* 775W,[3] in numbers far exceeding those encountered in "naturally" contaminated material. Moreover, the enzyme α-amylase of egg yolk was also inactivated under these conditions. Details of the experiments which led to these conclusions and of the pasteurization plants required for heat-treatment, as well as of baking tests with the pasteurized liquid egg, have been reported.[4–7]

Thirteen plants for pasteurization of egg in the U.K. and Northern Ireland are already following this technique with satisfactory results in regard to the α-amylase test, freedom from salmonellae, and use of the pasteurized material for confectionery; by the end of the year there will be 30 such plants installed in the country. In one instance the pasteurized material is piped straight into the bakery. Most if not all countries exporting egg to the U.K. are already equipped for pasteurization and they have been waiting only for regulations to put into effect the extra procedure required for safety.

It has been calculated that there will be an additional cost of perhaps 1d. per lb. of egg to cover pasteurization, but this will surely be more than compensated for by the assurance of safety, and by the cessation of large-scale condemnation, which in the past must have caused much financial loss to the industry.

The regulations assume that adequate sampling will still be carried out at the ports and by the medical officers of health in whose areas breaking-out plants are situated. Public-health laboratories, public analysts, and industrial laboratories will be responsible for carrying out the α-amylase test. It is hoped that, at least in the initial stages of production from any new plant, laboratories will continue to examine for salmonellae, because the α-amylase test may still be satisfactory despite 2–3% recontamination with raw egg. In the event of salmonellae being isolated, condemnation of the egg under the Food and Drugs Act, 1955, or the Public Health Imported Food Regulations, 1937, will follow. Conversely, a longer heating time at a lower temperature may kill salmonellae without complete inactivation of the α-amylase, and this would result in condemnation of the egg even though it were free of salmonellae. However, such a product might not be acceptable to the baking trade because prolonged heating may cause the egg to thicken. The regulations do not indicate how to dispose of egg batches that fail to satisfy the α-amylase test.

There is an urgent need now for other egg products to be made safe, though further experimental work is required on the best methods to use. It should not be long before similar regulations can be applied to spray-dried whole egg and yolk and frozen yolk, all of which may present dangers similar to those of bulked whole egg. Experiments are in progress on hen egg albumen, which is more difficult to pasteurize because it coagulates at a lower temperature than mixed whole egg, and it presents a further difficulty in that a test other than that of destruction of α-amylase is required to monitor the efficiency of heat-treatment. Nevertheless a method must be found, and investigations planned for the ensuing year will in all probability provide an answer to the heat-treatment of hen egg albumen; but it may take longer to devise a simple routine test to indicate that this pasteurization has been carried out satisfactorily. In the meantime all will watch with keen interest the results of the Ministry's first step towards making egg products safe. It is to be hoped that, as for the pasteurization of milk, the years ahead will justify these measures.

OBESITY AND THE HEART

Fat people have a poorer life expectancy than thin ones, though it is not easy to explain why. The American Life Insurance companies[1] found that men who were more than 20% overweight had on the average about a 25% increase in mortality over men of normal weight. The excess deaths were caused mainly by diabetes and vascular disease. Some of the deaths from vascular disease are undoubtedly a consequence of hypertension, but an increased risk of death from coronary-artery disease has been attributed to obesity alone.[2] Besides its immediate practical importance for the individual patient this association is of considerable interest in relation to the effects of exercise and diet on the prevalence of coronary-artery disease.

Recently D. M. Spain, D. J. Nathan, and M. Gellis[3] have surveyed a group of 5,000 Jewish men in New York to assess the importance of weight, build, blood-pressure, diabetes, and serum cholesterol on the development of ischaemic heart disease. There was a small increase in the prevalence of ischaemic heart disease among the overweight men as against those with a normal weight (9.2% against 7.8%). The difference apparently lay in the incidence of hypertension and diabetes, for when such patients were excluded from both groups the incidence of ischaemic heart disease was similar. Among overweight patients with hypertension or diabetes the incidence of ischaemia was 22%, whereas among overweight patients with neither disease it was only 5.6%. Serum-cholesterol levels were unrelated to body weight but highly correlated with the presence of ischaemic heart disease. These authors conclude that obesity causes a higher incidence of coronary-artery disease by increasing the incidence of diabetes and hypertension, both of which themselves damage blood vessels.

Knowledge of the relationship between diabetes and ischaemic heart disease has been taken further by the work of J. Vallance-Owen and W. L. Ashton,[4] who have measured the plasma insulin antagonist in patients who have suffered recent myocardial infarction. They found figures characteristic of diabetes in 19 out of 28 such patients, though none showed clinical evidence of diabetes when examined on admission to hospital. This work is at an early stage, but it promises an alternative approach to the problem of ischaemic heart disease at a time when other lines of research have proved somewhat disappointing.

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1 *Build and Blood Pressure Study, Society of Actuaries, Chicago*, 1959.
2 Dawber, T. R., Moore, F. E., and Mann, G. V., *Amer. J. publ. Hlth. Supplement*, 1957, 47, 4
3 Spain, D. M., Nathan, D. J., and Gellis, M., *Amer. J. med. Sci.*, 1963, 245, 63.
4 Vallance-Owen, J., and Ashton, W. L. *Lancet*, 1963, 1, 1226.