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Reports on meat and milk presented to the League of Nations on the occasion of the visit of European Health Officers in 1924

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During the second half of the 19th century most European countries established systems for the inspection of the quality of food. Two main political arguments justifi d the establishment of such inspection: fraud and health. Fraud was an abuse against market laws while the protection of public health against risks and hazards became increasingly an essential part of public policies, especially at a municipal level.

Since its creation in 1922, the Health Organisation of the League of Nations assumed to intervene directly in the instruction of public health experts as a cornerstone to implement health policies both nationally and internationally. Several lines of action were developed in this direction, the fi st one covering the publication of how health care services were organised and how they operated in different European countries. Th s included san-

itary regulations, the technical strategies for the identifi ation of health problems, and the public and private institutions involved. Therefore the LNHO promoted interchanges between countries by funding visits of public health experts to study and discuss the functioning of health care systems.[1] The grants for those interchanges were funded by the International Health Board of the Rockefeller Foundation.[2]

> "*The organisation of travelling exchanges involving health experts in different countries was an initiative easily developed by the Secretariat of the League of Nations and the health authorities in different countries. The International Health Board of the Rockefeller Foundation assumed the program and contributed with generous grants to those exchange visits, the first of them taking place in October 1922. The plan was settled according to different schemes: some visits were devoted to exchange of public health officers; others, applied to specialists in tuberculosis, children's health, school hygiene, health administrators of harbours, statistical demographers, etc. In 1930, six hundred officers, not only of state members of the League of Nations, but also from other non member countries, such as the United States of America, Mexico and the Soviet Union, took part in the exchange visits of sanitary staff. Among the visited nations were most of the European countries, Latin America, United States of America, Canada, Western Africa, India and Japan.*"[3]

The work of the Interchange of Public Health Personnel was to be conducted along a series of general lines to bring public health administrators in different countries into closer relationship with each other, making comparative evaluation of the organisation and legislation. One of the fi st decisions was the publication of specific reports to inform on the organisation and working the public health services in several European countries. Those reports contained information on the administrative regulations, health legislation, social diseases, sanitary campaigns and main health problems, as well as the cooperation between private associations and health authorities.

On the occasion of the interchange study tour organised for medical offic s of health from twenty-one countries by the Health Organisation of the League of Nations in June 1924, forty-five lectures were given in Denmark. Two of them were devoted to the control of quality and inspection of meat and milk food. H.C. Mörkeberg, chief veterinary inspector of Denmark, discussed the situation of meat inspections and Dr. Christiansen, professor of the Veterinary and Agricultural College, lectured on the inspection of milk.[4]

The inspection and quality control of meat in Denmark

Similarly as in most European countries, the Danish Act of January 1858 granted power to municipalities to arrange the health policies, among them meat inspection.[5] As a matter of fact, meat inspection was not made effective in Denmark until the end of the 19th century. In 1881 an inspection service was established in Copenhagen for meat exposed to sale, and in 1887 a public slaughterhouse was erected being the only endowed with permission for slaughtering. Gradually other similar provisions as to meat inspection were incorporated in other municipalities, although the rules for meat inspection were initially heterogeneous and no mutual recognition hampered the meat trade.

Almost simultaneously with the start of the meat inspection a crisis in the export of cattle and pigs happened and owing the prohibitive measures abroad a number of export slaughterhouses were erected all over Denmark. A bill was passed by the Government in 1894 to ensure that only sound meat was sent abroad. Th s regulation empowered the Government to prevent the export through a system of meat quality inspection. The bill dealt with fresh meat only, being amended in 1908 including also salted and smoked meat, and off l and meat products obtained there from. Finally the Home Meat Inspection Act was issued in 1906. It made an arrangement according to which meat inspection as a guarantee for quality control was established and could be introduced into any municipality without being revised or subjected to further conditions. Th s Act was amended by another passed in 1911, according to which also second-class meat of animals slaughtered at public abattoirs or export slaughterhouses could be introduced into municipalities all over the country without demanding further imposts.[6]

In 1908 the Minister of Agriculture was empowered to take measures for the prevention of export of meat, off l and meat products from cattle, sheep, goats, horses and pigs when there was a suspect that it was originated from ill animals which made the meat unfit for human consumption. The use of preservatives was also limited and controlled. The new regulations tried to benefit the export trade. Therefore, only the so-called export slaughterhouses were authorised and the work was supervised by the inspecting veterinary surgeon appointed by the Ministry of Agriculture. Inspectors were present during the working hours superintending the activities of the slaughterhouse, taking action should anything occur contrary to the prescribed regulations, and supervising the stamping, as well as taking care of regulations, cleanliness and the hygienic conditions and state of health of animals, facilities and employees.

The slaughtered animals were inspected by the veterinary surgeon both alive and after the slaughtering, while organs were still present and could be explored, supervising the classifi ation of meat and off l in accordance with the Ministry of Agriculture regulations into two categories: fi st and second class. Meat and off l being sound and fit for human consumption was considered fi st class when it showed good appearance, not becoming repulsive for abnormal smell, taint or other reasons. At the export slaughterhouses pork and off l of pigs of the fi st class was classifi d into two categories. Class A included animals which did not suffer from rachitism, not showing tuberculosis deposits and from which no part of the pleura and peritoneum had been removed. Second class referred to meat and off l which should only be eaten boiled or roasted, and meat that could be eaten raw without risk for health "*but which, owing to ill-nourishment, abnormal smell or less appetising appearance, is unfit for classification as first class product.*"[7]

All supervised and approved meat at an export slaughterhouse was stamped and labelled. Pigs of class I A were stamped (*Lur-brand*) with the identifi ation of the slaughterhouse and the word "*Denmark*". The stamp used for meat and off l of class I horses, cattle, sheep and goats, as well as pigs of class I B, was a blue oval containing the identifi ation of the slaughterhouse and the sentence "*Denmark. I. Kl. Statskontrol*". Similarly for class II a rectangular black stamp stated "*Denmark. II. Kl. Statskontrol*" identifying as well the specific slaughterhouse.

A special label was used for the export of off l to countries placing obstacles in the way of complete exploration at the slaughterhouse. The animal ex-

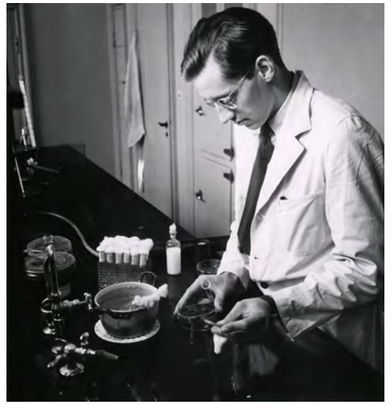
amination was carried out to the extent permitted by the import regulations of the destination place and the products were labelled only after evidence that the meat was in conformity with Danish regulations for first class.

Meat and offal, which could not be classified as first- or second-class should be destroyed or made up for technical purposes in special rooms under the supervision of a veterinary surgeon, according to the regulations. However, when it was considered fit for human consumption after sterilisation, the meat was distributed directly from the slaughterhouse to consumers inside the country after being sterilised under supervision. The export of meat and offal only was allowed for export slaughterhouses authorised by the Ministry of Agriculture, although certain factories could be authorised as well under the supervision of an inspector appointed by the Ministry. Nevertheless anybody was allowed "*to export blood, intestines, tallow and fat -with the exception of raw non rendered pigs' fat to Great Britain and Ireland-, as well as, for technical use only, pork-rinds, brains, bladders, pancreas, gall-bladders, ovaries, spleen and feet of cattle with the hoofs attached.*"[8] For Great Britain and Ireland, special rules were in force and only meat and offal classified as first-class A was exported. The exception was pork classified as first-class or first-class B by a municipal inspector, which could be exported as mess pork in casks filled with brine. Tinned meat, sausages and other kinds of prepared meat, in order to get exported, were prepared at special factories approved by the Ministry of Agriculture. Veterinary inspectors were appointed by the Ministry to supervise that the prescribed regulations were carried into effect. For this manufactured and tinned meat both first- and second-class was accepted, whereas only first-class and offal could be used for manufacturing sausages and other types of prepared meat. No other preservatives than salt, saltpetre, sugar and wood smoke were accepted.

Meat and offal of dead, not slaughtered animals was prohibited for sale or dispose for any sort of human consumption. Meat and offal of horses, cattle, sheep, goats and pigs suffering from disease before slaughter could not be offered for sale for human consumption unless an authorised veterinary surgeon, in accordance with the rules drawn up by the Ministry of Agriculture, issued a certificate stating that meat and offal represented no risk for human consumption.[9] Although sanitary regulations approved by the Ministry of Agriculture were in force for the whole country, municipalities were empowered to include further regulations on food control and hygiene regulations. Municipal meat inspection, similarly as export inspection, applied to horses, cattle, sheep, goats and pigs.

In municipalities in which meat inspection was well established, animals were not exposed for sale for human consumption or in the manufacture of mince-meat, tinned meat, sausages and any sort of prepared meat devoted to sale before the inspecting veterinary surgeon appointed by the municipality had approved it for human consumption and market sale. This did not apply to meat and offal which, in accordance with existing laws, were exempted from inspection, as well as to foreign meat, smoked or salted abroad, which might be offered for sale with the permission of the Board of Health.

In municipalities with public slaughterhouses all slaughtering had to take place there. All animals



Laboratory tests of food are an important part of the work in foodstuff control.
Photo: Brother Bernild around 1960.

were inspected both before and after the slaughtering by the veterinary surgeon, and the working conditions and the hygienic state of facilities were under permanent inspection. When meat and off l of animals slaughtered at public slaughterhouses was classifi d as class I, it might be introduced for sale in any municipality in Denmark. The same applied to meat classifi d as class II at the examination of the slaughterhouse, although in that case the municipality where the meat was going to be introduced had right to demand a re-inspection.[10] In addition, products were stamped in the way established in the sanitary regulations, stating the quality of the meat and the place of stamping.

Municipalities lacking of a public slaughterhouse but owing municipal meat inspection according to sanitary regulations, sometimes established provisions forcing that all horses, cattle, sheep, goats and pigs slaughtered should be inspected by the veterinary surgeon both before and after slaughtering or simply after doing it. In those cases slaughterhouses could introduce their products for sale into any Danish municipality, when they were classifi d as class I, without re-inspection or further imposts. Nevertheless, a series of additional provisions were to be observed:[11]

The animal was inspected by the veterinary surgeon at the slaughterhouse both before and after slaughtering; heart, lungs, liver, kidneys, spleen, except when containing disease secretion, as well as the uterus, all the intestines, mesentery and tallow, head, tongue and udder of large cattle and horses, and the lymphatic glands should not be removed from any animal.

The stamping was placed as specifi d in the regulations, stating the quality of the product, the place of slaughtering distinguishing from imported meat and any other stamped on the control station.

The inspecting veterinary surgeon, his salary, and the regulations affecting the inspection, were approved by the Ministry of Agriculture. The meat inspection was under the supervision of the Chief Inspectors appointed by the same Ministry.

When the veterinary surgeon lived far away from the municipalities under his responsibility instead of inspecting animals before and after slaughtering, the inspection usually took place only after. At the examination, the animal was presented with thorax opened, and all the internal organs should be present and placed or marked in such a manner that it could be immediately seen to which animal they belonged. In the municipalities where animals were not inspected before, meat could not be sold in other municipalities where inspection was established. Control stations were also established in those municipalities without stamps showing permission for sale. Meat stamped at the control-stations was only offered for sale in the municipality where the stamping had taken place or in municipalities without their own meat inspection.

In addition, the Home Offic prescribed special regulations concerning cleanliness in public and export slaughterhouses, sausage factories, shops, storehouses and also the hygienic conditions of all facilities involved and employees. Some additional issues could be also considered. For instance, each municipality decided whether including trichina inspection or not. As a matter of fact, in Denmark only a few pigs were affected with trichina; in 1922 out of 265,000 pigs only one of them was affected.[12]

Inspecting the quality of milk

In the same meeting devoted to public health office s from twenty-two countries promoted by the League of Nations, Dr. Christiansen, Professor at the Veterinary and Agricultural College, contributed a report on the milk inspection in Denmark, which followed the same pattern as Mörkeberg's report on meat inspection: it was arranged on pure municipal bases.[13] Th s optional power was granted the municipalities under the Act of 1858, authorising them to assume a number of matters related to hygiene. *Sundhedsvedtægt* were established by the municipalities, although they were subject to the approval by the *Justitsministerium,* the Home Offi . Initially mostly the bigger towns were interested in establishing inspection of milk and only later on smaller towns and rural areas introduced gradually procedures for milk quality control. However the drawing-up of the several municipal by-laws and the requirements varied considerably, even though steps taken to make the regulations as homogeneous as possible in the whole Denmark.

Although the milk inspection was legally a municipal aff ire, there were certain regulations regarding the trade of milk, which were in force for the whole country. These regulations were concerned with the composition of the milk aiming essentially at establishing certain minimum regulations regarding fat proportion, content of solids and the like, to prevent adulteration and sale of milk of inferior quality. The Act concerning the examination of victuals (April, 1910) in section 7 authorised the Home Secretary by a decree to establish provisions as to what could be exposed for sale under the customary designations for victuals.[14] In 1921 a Ministerial Decree was issued regulating what might be sold as milk, cream and the like.

Regarding cow's milk, the Decree distinguished between whole milk, Jersey-milk, children's milk, skimmed, half-skimmed and hand-skimmed milk, and buttermilk. Whole milk designed the one containing at least 3 per cent of fat, "*from which no abstraction of any natural constituents had been made and no foreign substance added.*"[15] Jersey milk was whole milk obtained from Jersey cows containing at least 4.75 per cent of natural butter; children's milk was obtained from cattle testes with tuberculine under special veterinary inspection. Th s type of milk fulfilled special provision and local sanitary regulations approved by the Home Offic to protect children's diet. In skimmed, half skimmed and hand skimmed milk a part of the natural fat was abstracted without addition of any foreign substance, and buttermilk was "*the product from the churning of the cream (or milk) remaining in the churn after the butter has been removed*".[16] It contained at least 6.5 per cent of solid matter, an amount increased to 8.5 per cent when sold in bottles, which should be corked and labelled as "*bottled buttermilk*". Notwithstanding the sale of buttermilk containing less volume of solids than prescribed was not considered as an infringement of the regulation if the lacking volume of solids did not exceed 5 per cent.

Cream designed the fatty part of milk separated by skimming, containing between 13 per cent and 19 per cent natural butter fat without addition of any foreign substances. Two more categories of cream were described: export cream designed sterilised, homogenised cream containing 9-10 per cent of butter-fat, and cream for whipping, containing 30-32 per cent of natural fat.

Milk or cream labelled as pasteurised should be heated at least 80° and to be accepted for human consumption it should show negative reaction to the paraphenylendiamine test. All the different varieties of milk could be submitted to certain special forms of treatment such as sterilisation, homogenisation, condensation or the like on condition it was accordingly labelled when offered for sale. Only addition of sugar was permitted.

Milk regulations not only affected cow's milk,

A bottle from the children's milk program. The Dairy "*Egely*" near Næstved.
Photo: Private collection, Poul G. Lyng.

but also milk from other animals, which should be designated as such when offered for sale, and artific al fat emulsions, which could not use the words "*milk*" and "*cream*" when offered for sale.

These provision regulated by the 1921 Decree were in force in the whole Denmark, but more rigorous provisions were sometimes established by municipal authorities. As a matter of fact, the regulations of Copenhagen established the minimum fat percentage for whole milk in 3.25. Moreover, the ministerial decree contained almost no provisions as to the sanitary condition of milk, except for the "*children's milk*". Sanitary control was left to the initiative of the municipalities to make demands and stipulations as to the sanitary conditions. Therefore the requirements demanded by municipal regulations varied considerably. In some districts no special provisions existed, but in several others, especially in smaller towns and rural districts, requirements were considerable, although the most elaborate provisions had been made in larger towns. Two types of inspection took place: inspection of the milk-producing stocks and inspection of the milk at the place of consumption: trade, treatment, sanitary conditions and control of any sort of adulteration.[17]

In the mid 1920s provisions for the inspection of milk-producing stocks had been made by a number of municipal districts in Denmark, primary by Copenhagen but also by some others, mainly large urban municipalities.

> "*In respect to the metropolis, the milk inspection of which presents the greatest interest, the inspection of the stocks from which the metropolis is supplied with milk consists in: inspection of the sanitary conditions of stocks under review, their keeping (cleanliness) and feeding, as also the milking and carrying out of same as well as the first treatment of the milk; the same inspection is exerted towards the stocks from which cream is supplied for sale in Copenhagen. The inspection exercised by veterinary surgeons takes, in the case of stocks supplying children's milk, place at least twice per month, in the other cases as a rule but once per month.*"[18]

A second level of quality control was inspection on the place of consumption, comprising the treatment of milk, the hygiene conditions and the verifi ation that milk intended for human consumption was not adulterated. It included also inspection of equipment and cleanliness of milk-shops, varying greatly in the different municipalities.[19] Again more detailed provisions were established in larger urban municipalities. Milk exposed for sale in Copenhagen was under control of the City Board of Health and sellers and producers should be registered with the sanitary police. Premises where milk was treated, kept and sold were submitted to regulations concerning equipment and cleanliness.

> "*Should milk not be exposed for sale in air-tight, closed bottles, the only other commodities allowed for sale in the same shop are the following: bread, cakes, flour, butter, margarine, lard, eggs, soda-water, beer, fruit, juices in bottles, chocolate and sweets in closed receptacles. The places in question must not be used for sleeping purposes or be in direct communication with places used for sleeping purposes; should they communicate directly with dwelling apartments, the door between same must fit tightly and be kept closed.*"[20]

Milk was in Copenhagen either offered for sale in closed bottles or in vessels tapped off in dairies or milk-shops, although in provincial towns milk was usually sold from vehicles in the streets. Hygienic regulations in the capital city also applied employees in the milk trade. In the case of living: "*… in a dwelling attached to a dairy become ill of any illness pointing to acute infectious febrile disease (including typhus, diphtheria, scarlet fever or any other violent acute throat disease, meningitis, acute rachitis, erysipelas, cholerine) or any other serious chronic disease (including tuberculosis of the lungs) a doctor must be called immediately, who, if he thinks fit, should at once report the sickness to the City Board of Health, who then can demand the patient to be removed from the place in question*".

No person suffering from any extended or infectious skin-disease or who has any large unclean wounds or whose hands or face are bandaged, or persons in connection with sick people suffering from severe and acute infectious febrile diseases, or those who are known to be carriers of the characteristic bacteria of said diseases, may be employed in milking, treatment or sale of milk. Cleanliness as regards clothing, combined with personal cleanliness, must be observed by all employed in milk-shops or in selling milk.[21]

In Copenhagen children's milk was only sold in closed bottles of transparent glass; pasteurised milk – heated to 80º C and immediately cooled to at least 8º C- was only sold in bottles on which the date of the pasteurising and the name of the shop was inscribed. Contaminated or adulterated milk was strictly prosecuted. The power to enforce those provisions rested with the Municipal Board of Health. The inspection was carried out in most municipalities by a veterinary surgeon appointed by the municipality aided by the police when taking samples of milk for examination and in the inspection of shops and diaries. In smaller municipalities the veterinary surgeon was not only in charge of inspecting on the place of consumption, but also of the milk-producing stocks. After each inspection the veterinary surgeon issued a certifi ate as to the condition of the stock handed to the Municipal Board of Health.

In addition there were private milk-supply companies that established private supervision and, according to Christensen's report, "*in some respects their demands exceed those laid down by the sanitary authorities*."[22] Th s specially applied to the *Københavns Mælkeforsyning*, founded in 1878 by G. Busck, who introduced a pattern of sanitary supervision of the stocks supplying the company with milk. Th s institution had great influence on the further development of supervision of milk in Denmark, founded upon the principle leading Denmark: "*procuring of milk from healthy cattle, milked and treated with exemplary cleanliness, with keeping qualities merely by cooling*" on which the inspection of milk was based.

Some final comments

During the fi st decades of the 20th century the national State emerged as a fundamental element in confli t management and stabilisation policies. Bourgeois liberalism and democratic ideals had shifted from 19th century laissez faire attitudes that detested the State social intervention to active commitment usually in the form of a *protecting* or *providential State.* The State broke through as a regulating player, a bastion of equity, which regulated social life to prevent abuse, which legitimated itself as the warrantor of common good beyond particular or group interests -those of the classes or social groups. The public administration encouraged scientific activity and social care programmes, the construction of hygienic housing and healthy schools, and the design of new suburbs.

Under some kind of hygienist ideology, the State emerged as the regulator of inequalities and the main advocate of citizen's rights.[23] As a result, Western countries developed a public administration ranged from the local municipalities until the state central administration trying to challenge the so-called *market failures* mainly through educational, sanitary and social policies.

It is relevant to frame the emergence of food inspection under those coordinates. The surveillance of food quality derived from two main elements of concern: economy (free market) and health. The economic dimension of the food production and food supply became especially relevant as a result of the deterioration of the global food system, which had been built in the second half of the 19th century. War confli ts and the 1930s Depression caused food production and trade to collapse worldwide, with terrible consequences for the individual states. A series of social and economy factors encouraged protectionism, interfering international trade. Moreover the growing industrialisation of more and more foodstuffs (meat, milk, chocolate, oil, sugar …), as opposed to traditional local manufacturing and consumption, made necessary the regulation of production, strict surveillance of fraud and adulteration, and the control of additives, colourings and preservatives. Basically, new rules were needed to stake the boundaries of what was permissible and unacceptable in human diet, a debate whose backdrop was the natural/artific al divide. Therefore food inspection had an economic and social dimension, trying to preserve equity in an open market society, which involved the fi ht against fraud and adulteration as causes of abuse.

But there was also a sanitary dimension in the food inspection. Experimental medicine and bacteriology spread since the last decades of the 19th century the microbiological paradigm to understand the most important health problems at the time: infectious and epidemic diseases causing high rates of infant and children mortality, as well as impairing the state of health of industrial workers and peasants, weakening the task force of any country. *Health id wealth* was the slogan of the British sanitary movement. Analytic chemistry and bacteriology contributed new tools to identify fraud, adulteration and contamination of food, to prevent infectious diseases associated to water, air or food. As a consequence, food inspection emerge as a necessary association between experimental science, public health policies and economy, to guarantee healthy food and free concurrence, something essential for the legitimation and success of liberal democracies.

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