the site of an amputation for tuberculous disease ; that this lesion appears soon after the amputation, and notwithstanding the success of the primary union ; and that it may be caused either by auto-inoculation or by incomplete removal of the primary lesion.

Infection by the Digestive Tract.—Dr. Gilbert points out that primary tuberculosis of the intestines is rare, as compared with pulmonary tuberculosis. It might be argued, therefore, that digestive is not so common as respiratory infection. Jeannel, however, has seen that the tuberculous virus taken into the alimentary canal may be absorbed and produce pulmonary lesions without leaving any trace at its point of absorption. It follows that the point of development of disease does not furnish completely trustworthy indications of the path of entrance of the virus.

Action of the Gastric Juice.—Koch states that the gastric juice has a destructive effect on the tubercle bacilli, but has no action on their spores. Later experiments appear to show that the gastric juice can completely destroy these organisms, when the action takes place in pure cultures and is continued for from eight to twelve hours. It is obvious, however, that these conditions do not apply in the human stomach, the juice being there diluted by ingesta, and the duration of stay in the stomach rarely reaching beyond six hours ; it is evident, therefore, that the protective action of the gastric juice is not a sufficient guarantee of safety from the effects of tuberculous food.

Effect of Tuberculous Meat.—It is unnecessary to give in detail the inoculation experiments described by Dr. Gilbert. The following interesting calculation by Arloing may, however, be quoted. Assuming that (as has been proved) tubercle bacilli are frequently present in the muscular tissue of tuberculous cattle ; and assuming, further, that these bacilli are uniformly diffused throughout the flesh, an animal of the average weight of 280 kilogrammes will furnish 1,400 bacilli. Given a consumption of 200 grammes of meat per head, 1,400 persons are exposed to contagion by the use for food of a single tuberculous bovine.

The argument that the flesh of tuberculous animals in a good state of nutrition can do no harm is refuted by the positive results of Veyssire and Humbert, who obtained successful inoculations on two rabbits with 1 c.c. of the muscular juice of a very fat cow, and by the fact that Lortet and Despeignes have infected the guinea-pig with the juice from a lymphatic gland of a guinea-pig, which was normal to the naked eye, and which had been taken from the flesh of a fat bullock seized at the *abattoirs* of Lyons.

Infection by Expectorations.—The facts of the following case, were they not vouched for by the author himself, would appear almost incredible. A medical colleague of the author, living in central France, and still young, was found to have

tubercular disease of both lungs. Some time after leaving for the Riviera he died, and the following statements were made to Dr. Gilbert by his widow, who had been devoted to her late husband. The patient urged upon his wife to die with him, and her indecision only led him to entertain more fixedly this inhuman idea. On the day of his death a glass of champagne was given to him. Into this he expectorated, and required his wife, as a proof of her love, to drink the horrible mixture ! This she, after some hesitation, drank with her eyes shut, and some hours afterwards the wretched man died in a tranquil sleep. The unfortunate victim was soon seized with violent fever, and when seen by Dr. Gilbert some time afterwards was found by him to have phthisis, to which she rapidly succumbed.

Defence of the Organism.—In view of the fact that one-fifth of the human species appear to die of tubercular diseases, while the remaining four-fifths remain immune, the portion of Dr. Gilbert's work relating to the defence of the organism possesses great interest. There is natural immunity, and immunity caused by other morbid conditions. Of immunity therapeutically invoked we know nothing as yet. Chlorosis and rheumatism appear to be antagonistic to the tuberculous virus, as also emphysema, pneumothorax, etc.

We have no space to review in detail the prophylactic measures discussed in detail in Dr. Gilbert's work, relating to foods, dust, means of infection by the mouth, keeping of animals, methods of dealing with expectoration, hygiene of the habitation, etc.

The third part of the book deals with the creosote treatment of phthisis, and is followed by a note on the serotherapy of tuberculous pleurisy. The whole work will amply repay perusal, and contains a large amount of matter which has not previously been readily accessible to English readers.

REPORT OF THE COMMITTEE ON ANIMAL DISEASES AND ANIMAL FOODS—NECESSITY FOR CO-OPERATION IN THE INSPECTION OF MEATS.*

BY

D. E. SALMON, D.V.M., Chairman of the Committee.

FROM the point of view of the American consumer, the inspection of meat is not yet in a satisfactory condition. There is a federal meat inspection, and a municipal meat inspection, each independent of the other, each conducted on different principles ; and where the two accidentally come in contact, there has oftener been friction and antagonism than friendliness and co-operation.

Municipal inspection can never properly protect

* Abstracted from the *Journal* of the American Public Health Association, January, 1896.

consumers until it has the assistance which can be rendered by the federal government through its men, its money, and its jurisdiction over inter-state commerce. Federal inspection, on the other hand, is equally lacking, because it cannot touch meat unless it is found in the channels of inter-state commerce, and even then, under the statutes now in force, the condemned meat may be sold for local consumption.

The Act of Congress under which the federal inspection is conducted, provides for an inspection prior to slaughter of all cattle, sheep, and hogs, the carcasses or products of which are to be transported and sold for human consumption in any other State or Territory, or the District of Columbia. It is made unlawful for any person to transport from one State into another either the carcasses or the food products of any of the animals named which have been examined and declared unsound or diseased.

There is nothing in this law, however, which prevents the owner from selling the condemned animals to be slaughtered for local consumption, or which interferes with their shipment to any other part of the country. It must be evident that an animal which is not in a proper condition to be slaughtered to produce meat for inter-state trade is not in a proper condition to be slaughtered for local consumption; nor is the condition of the animal likely to be improved by shipment to some other town or city either in the same or in another State. With proper co-operation, an animal condemned by the federal inspectors could not be slaughtered in the same city and the meat sold for local consumption; and if shipped to some other place, the health authorities, promptly notified, would be ready to take charge of it on its arrival.

The federal inspection does not make the task of the local health boards lighter than heretofore; on the contrary, it is made more arduous. The tendency is to slaughter condemned animals for local consumption, or to ship those which are likely to be condemned to cities where there has been no federal inspection established. This withdraws animals unfit for food from slaughter for the inter-state trade, and puts them upon the local markets.

It is possible for the same thing to occur with condemned meat as with condemned animals. The federal law allows this meat, no matter how dangerous it may be, to be sold locally for human food. The regulations of the Department of Agriculture have been drawn up, however, with the idea of restricting as much as possible such sale of condemned meat. These regulations provide, in those cases where the owners of condemned carcasses do not consent to tank them, that such carcasses shall be branded with the word "condemned"; that a record shall be kept of their kind and weight; that they shall be removed from the

packing house, and that the firm or corporation owning them shall make a sworn statement monthly in detail, showing to whom sold, whether for consumption, for food or otherwise, with what knowledge, if any, by the purchasers of their condemnation, and whether before their sale their condition had been altered by cooking, or in any other way. This was considered a necessary regulation to prevent the shipment of condemned meats to other States; but its effect will undoubtedly be to largely prevent the sale of such meats for human food by responsible firms.

Under the federal inspection, all animals and meats affected as follows, are condemned:—1, hog cholera; 2, swine plague; 3, anthrax; 4, rabies; 5, malignant epizootic catarrh; 6 pyæmia and septicæmia; 7, mange or scab in advanced stages; 8, advanced stages of actinomycosis, or lumpy-jaw; 9, inflammation of the lungs, intestines, or peritoneum; 10, Texas fever; 11, extensive or generalized tuberculosis; 12, animals in an advanced stage of pregnancy, or which have recently given birth to young; 13, any disease or injury causing elevation of temperature or affecting the system of the animal to a degree which would make the flesh unfit for food. For the above conditions the entire carcass is condemned. In addition to this, any organ or part of a carcass which is badly bruised or affected with tuberculosis, actinomycosis, cancer, abscess, suppurating sore, or tape-worm cysts, must be condemned.

The difficulty in the way of a uniform system and co-operation between the federal and local authorities is not that the regulations of the former are too lax, but in the indisposition of the latter to enforce or assist in enforcing a systematic inspection. This lack of systematic local inspection is no doubt for the most part due to lack of funds. In cities where the federal inspection is established, great benefits could be secured from this without increased expenditure, by making it a punishable offence to sell the condemned meat, or to slaughter the condemned animals, and sell their products for human food.

There should, however, be an increased force of meat inspectors in most cities. Small slaughter-houses, which do a strictly local business and which are in the hands of unprincipled parties, are too numerous, and all such should have the strictest supervision.

Too often the local inspection takes cognizance of but a few conditions. Lumpy-jaw cattle and badly injured animals are severely dealt with, but how many hogs are condemned for cholera? How many sheep for scab? How many cattle and hogs for tuberculosis? How many animals for pregnancy or parturition? How many for metritis, peritonitis, septicæmia, pyæmia, and other conditions equally loathsome and dangerous to the consumer?

The committee does not consider it practicable, at least for the present, to undertake to protect consumers from trichinous pork by microscopic inspection. The federal trichina inspection has been a commercial inspection, made with the purpose of placing American pork in certain markets which require such an inspection; but not with any idea of protecting American consumers.

Unfortunately the federal inspection is limited by the statutes to cattle, sheep, and swine, and cannot properly be extended to horses. Their flesh may consequently be prepared, shipped, and sold without inspection and without the violation of such laws. The sanitary authorities owe it to the public, however, that this meat be sold for what it really is, viz., uninspected horse-flesh.

The committee calls attention to these several points because they demonstrate the importance of an extension of active sanitary work to guard consumers from the dangers of unwholesome meat. The establishment and extension of the federal meat inspection make co-operation feasible, and present the only practicable means of securing a thorough and efficient system of meat inspection.

EXPOSING UNWHOLESOME MEAT.

IN the following case a prosecution was successfully instituted on the history of the animal only, no evidence of the actual bad quality of the meat being brought forward by the prosecution, even after expert examination of the carcass.

The facts of the case were that on April 21st it came to the knowledge of Mr. Bradley, inspector for the Tonbridge Urban District Council, that four quarters of beef were offered to several butchers by a man named Faircloth (an *employé* of Arthur Wickens, bus proprietor and dealer, of Southborough, near Tonbridge), at an abnormally low price, and were finally sold to a jobbing dealer named Ford for thirty shillings, and he deposited them in a butcher's outhouse. The inspector made inquiries, and found on good evidence that the cow, which originally belonged to a dairyman at Southborough, was hopelessly ill from milk-fever on April 19th; that Wickens was called in to take the cow away (dead or dying); that he paid twelve shillings for it, and subsequently dressed it, and sent his man to sell it.

The beef was seen on the butcher's premises where deposited by the inspector (Mr. Bradley), and the medical officer of health (Dr. J. S. Tew). When examined (on 22nd) it was not decidedly dark in colour, was well set, had a good amount of healthy fat, and had no offensive smell when cut into; the kidneys on section were healthy, and had no smell of drugs—in fact, no one would

have condemned the meat on examination only.

It was, on the evidence forthcoming, condemned by a magistrate, and a prosecution was instituted.

Wickens, in defence, stated that he knew that the meat was unfit for food, and that his man misunderstood his instruction in trying to sell it to butchers for human food, but should have taken it to a man he named who dealt in dogs' and cats' meat.

The defendant was fined £10 and £2 11s. 6d., or six weeks' hard labour.

It will be seen that the original offender in this case was prosecuted.

ON A COPPERED PEA CASE.*

BY

JAMES HERRON, M.D., M.O.H. to the Board of Works for the St. Saviour's District, Southwark.

It has for some years past been recognised by medical men that the practice of colouring bottled peas by the addition of a salt of copper—usually the sulphate—is attended with injurious effects, and in most countries the practice is forbidden. In the United States it is permitted to add not more than three grains of the sulphate of copper to the pound of peas, provided the parcel or bottle is labelled, so that the purchaser knows what he is buying. In most European countries the practice is entirely prohibited, while in France—the home and seat of the industry of preserving peas and other vegetables and fruits—the practice has varied in a somewhat curious way. After being forbidden entirely, the Government, on the representations of those interested in the trade—some twenty thousand persons and 40,000,000 francs of capital being concerned in it—relaxed their restriction as far as to allow the addition of the sulphate of copper in the case of peas intended for exportation to and consumption by other nations than the French. This was obviously so ridiculous that eventually all restrictions seem to have been withdrawn. I am not aware of the details of the French laws, but I believe the above to be a succinct summary of the course of legislation on the subject, although I cannot but believe there must be some restriction as to the quantity which the French preserver is allowed to add to those vegetables intended for home consumption.

In England the Sale of Foods and Drugs Act, 1875, first gave public bodies the right to interfere, and in 1877 a case was heard and decided at the Marlborough Street Police Court, in which, after hearing Dr. Conway Evans, Medical Officer of

* From a Report to the Sanitary Committee, by Dr. Herron.