ANIMAL DISEASES AND PUBLIC HEALTH.

The object of this book is to introduce to the people of this country 'the higher purposes of veterinary medicine.' These higher purposes are the better protection of the public health, and the mitigation of certain evils relating to our food-supply.

The amount of capital invested in live-stock is enormous, and the animal product a most important part of our national resources. The better protection of this property from disease is discussed in the third part of the book. Writers have usually treated this material or pecuniary side as the more important aim of veterinary medicine: it is here, however, discussed as secondary to that of public sanitation. In part second the author gives an excellent history of veterinary medicine, and of veterinary schools in Europe, along with much information not easily accessible elsewhere.

This age of steam has in many ways stimulated the production of live-stock; and the relative proportion of animal to vegetable food has of late years been rapidly growing. This is in part due to the fact that the art of stock-breeding has greatly advanced, and in part to the modern facilities for the preservation and transportation of animals or their products. While this is, as a whole, doubtless a benefit to mankind, it has at the same time enormously increased certain dangers to public health. Old dangers have increased, and new ones been introduced that our fathers knew nothing of. Moreover, modern scientific investigation has traced to our domestic animals certain diseases of man the origin of which has heretofore been a mystery; and we now know that the public health is related to that of our domestic animals in more ways than the public yet appreciate.

Dr. Billings has therefore an important theme, and he tells his readers 'not to forget that the author is an enthusiast;' and we will add, that, like many enthusiasts, he advocates measures for the details of which, even if practicable, the public are by no means yet ready. Indeed, like the public, the author himself devotes the most attention to some of those dangers which are by no means the greatest, if we measure their results by mortuary statistics.

That the flesh of obviously diseased animals is unwholesome food for man, has been the common belief for ages; and communities that have any public markets at all have generally placed legal restraints on its sale. In most civilized countries, there are severe penalties for selling diseased flesh of certain kinds; but in our country the administration of sanitary laws in this direction is very defective, and the methods very faulty. In some directions there is, as yet, no official or organized effort to meet dangers the existence of which is reasonably well demonstrated.

We may say, in a general way, that the health of the people is directly related to that of their domestic animals in at least five ways. In the first place, some of their contagious diseases are directly transmissible to us, and are very fatal; and to this class belong some of the most dreaded of diseases. For example: in proportion to the relative number of its victims, hydrophobia inspires more terror than any other disease known to us, and greater exertions are made against it than against any other one disease which slays so small a proportion of the population. This, in man, comes only from animals. In the same category we may place anthrax and glanders, both very fatal. The foot-and-mouth disease of cattle, transmitted to man through the milk of diseased cows, is less fatal, perhaps, but still too troublesome, and unfortunately too common, to ignore, and others of less note are well known. The mortality in any community, due directly to this class of diseases, is relatively small; yet there is a positive danger, against which we have as yet inadequate protection, and where we especially need intelligent official action founded on proper veterinary authority.

Closely related to this is a class of diseases less contagious, and where the direct transmission to man does not so commonly follow exposure, or where, at least, the demonstration is as yet incomplete; where we can say that the public health may, and probably does, suffer, but where the proof is lacking, and the extent of the danger very uncertain. Such is the case with tuberculosis. That tuberculosis of cattle is very common in the old world, that it is less common here but is increasing, all who have studied it believe. That tuberculosis in man is in a degree transmissible, is, we think, now generally conceded; and that tuberculosis in cattle may be transmitted to other animals through the milk of tuberculous cows is proved. That it is transmitted from cattle to man through milk is not proved, but the analogies are most suspicious, and have of late attracted much attention. The author gives an excellent history of the investigation in Germany, and gives suggestive statistics of the extent of the disease among European cattle.

The relation of animal diseases to the public health, and their prevention. By Frank S. Billings, D.V.S. New York, 1884.

In the light of our present knowledge, few intelligent parents would knowingly allow their children to use the milk of tuberculous cows; but as yet we are powerless to prevent its sale in our cities.

A third class of diseases grows out of animal parasites in the flesh of the animals we use as food. Of these, trichiniasis has of late played the most sensational *rôle*. For the last few years this has been prominently before the public; but in our own country, curiously enough, our officials, because of commercial complications, have tried to hide the danger, rather than guard against it. Outside of the advertisements of quack medicines, no more astonishing sanitary literature can be found than some of the public, not to say official, utterances regarding trichinae in the swine of this country. Our author gives numerous statistics, both from other sources and from original investigations, which show that the disease is common enough and wide-spread enough to need more careful watching. Fortunately, each household can protect itself from this class of diseases by thorough cooking; but, considering the customs of cookery, there should be other protection. Tape-worm belongs in this class of diseases. We think that the author overrates the danger from the Taenia medio-canellata derived from beef (more probably from veal?), and quotes Thudicum of twenty years ago to show that the rarity of the cysticercus in beef makes it more dangerous, — a doctrine from which we entirely dissent. In this country the vast majority of tape-worms appears to be the T. solium which we get from 'measley' pork.

There is still another way in which the flesh of diseased animals probably affects the public health. Animals are subject to certain diseases which affect their flesh, but which are not, so far as known, transmitted to man. The so-called hog-cholera is such a disease; yet experience has shown the propriety of forbidding the sale of the pork in the markets when sufficiently affected to have the red spots.

The author advocates much more extensive inspection of animals, but we fear that his zeal has led him to impracticable lengths. When we consider the enormous number of animals slaughtered by the producers of the same on their own farms, and the production of milk on small farms not called 'dairy' farms, we fear that a system of inspection which will extend to 'all animals slaughtered,' and to all the cows on all the farms which may supply milk for sale, is impracticable. Nor would he, we think, have written that '*city inspection* [of milk] *is next to useless*,' if he had had any experience in official sanitation in a large city, drawing its milk-supply from regions over which its officers had no jurisdiction whatever. Because we cannot have the most perfect means of protection, it is nonsense to decry the only means that are available, and which, experience shows, make a great improvement in affairs. And, however necessary and important official inspection may be, one cannot hope for 'the unquestionable guaranteeing' of safety by any official board: that is asking a great deal.

His short chapter on hippophagy, as practised in Europe, is both interesting and opportune. The growing consumption of this cheap, nutritious, and wholesome meat is a good thing, which the next generation will doubtless find common in all enlightened countries. The poorest chapter in the book is that relating to infection and bacteria, some portions of which (and notably the botanic portion) are lame. But the book is an important one: it deals with an important subject, and is the repository of much useful information in an interesting and available shape.

HOUSE-DRAINAGE.

OF the numerous books which have appeared during the past year, devoted to this subject, many are too exclusively taken up with the plumbing and drainage of houses and tenements in cities and towns provided with sewerage systems. In Col. Waring's book, entitled 'How to drain a house,' the individual householder, to whom the volume is chiefly addressed, will find valuable counsel, whether his domicile is in a crowded city, or in a country or suburban village where connection with public sewers is impossible.

The great value to the state, of sanitary works, such as pure water-supplies and the proper drainage for the removal of sewage, has been successfully demonstrated, and the same principle is none the less true of each individual dwelling.

The first and principal portion of the book treats mainly of that portion of the drainage system which is included within the interior of the house. The closing two chapters are devoted to the disposal of the sewage of isolated houses, and the special method of sub-surface irrigation.

The style is concise, and the illustrations are clear and simple, and shorn of all unnecessary

How to drain a house. Practical information for householders. By GEORGE E. WARING, jun., M. Inst. C.E. New York, *Holt*, 1885. 222 p. 12°.