SCIENCE

NEW YORK, DECEMBER 11, 1891.

HYGIENE AT ANN ARBOR.

In the memorial which asked for the establishment of a hygienic laboratory at the University of Michigan it was stated that one of the duties of those in charge of such an institution would consist in the examination, at a nominal fee to cover actual expenses, of articles of food and drink, on request of health officers throughout the State. This has already become a very important part of the work done at the laboratory, and a brief résumé of this work may not be without interest. The present notice will speak only of articles of food examined, omitting mention of the samples of water tested, although the latter have furnished the greater part of the work.

Four samples of meat supposed to have been taken from diseased animals have been examined. In only one of these did the microscopical examination bear out the supposition, and in this the presence of trichinæ was easily recognized. It is impossible from a study of the meat as it is sold in the market to detect many of the diseases to which our domestic animals are subject. The public can be protected from this source of disease only through an examination of the living animals by a competent veterinarian.

A can of currants, which was believed to have caused serious illness, with one fatal result, in Lapeer County, was carefully studied, both chemically and bacteriologically, with negative results. It was said by the neighbors of the family that the currant bushes had been freely sprinkled with a solution of Paris green before the ripening of the berries, and it was suspected that arsenic would be found in the fruit. This very improbable supposition was found to have no support. Unfortunately, none of the ejecta of the sick, and no part of the body of the man who died, were submitted to the chemist, and the cause of the sickness will probably never be known. Certainly, if they were cases of arsenical poisoning, the arsenic was taken with some other food or drink and not in the currants.

In some canned salmon which had produced alarming symptoms, there was found a germ which, when grown on ordinary media and with free exposure to the air, produces no poison. When thus grown, the germ itself, or its products, can be injected into animals without apparent effect, but when grown in a sterilized egg, the albumen of the egg becomes markedly poisonous, a few drops being sufficient to kill a white rat. It is highly probable that in the canning of the salmon, the contents of this can were not completely sterilized, and this germ, growing in the can, from which the air was excluded, elaborated the chemical poison to which the ill effects observed in the consumer were due.

Three new poisons have been found in decomposing milk. These belong to the proteid bodies and are albuminoses. They are due to the growth of germs which have been found in the intestines of children suffering from cholera infantum; and the characteristic symptoms of this disease, followed by death, may be induced in kittens by injecting a small amount of one of these poisons under the skin. The poisons differ from one another in some of their chemical and physical properties, but their toxicological effects seem to be practically identical. It is possible, however, that a closer study of their action may reveal differences which have not yet been detected.

A poisonous albuminose has been found in cheese also. It is probable that this may form in the cheese after its manufacture, and that it does not pre-exist in the milk from which the cheese is made. At least it is certain that one portion of a cheese may be poisonous, while another portion cut from the same cheese may be eaten with impunity.

A can of mince-meat which was believed to have poisoned a number of persons has furnished a perplexing but interesting study. That the meat is poisonous can be demonstrated by feeding it to cats and dogs, and cooking does not destroy its poisonous properties. However, the most careful and thorough study has failed to reveal the nature of the poison. Mineral and vegetable poisons are not present, and ptomaïnes and poisonous proteids have not been detected in the meat.

From the studies which have been carried on in the laboratory the following conclusions, concerning the manner in which meat and milk may become infected, have been drawn: —

(1) The infection may be due to the diseased condition of the animal from which these foods are obtained.

(2) The infection may be due to the inoculation of these foods with specific, pathogenic germs outside the body of the animal.

(3) Meat and milk, especially the latter, are often infected with suprophytic toxicogenic bacteria.

The transmission of tuberculosis from the cow to the child through milk, which is known in some instances to occur, is an example under the first head. The spread of typhoid fever through milk diluted with polluted water is an example of the infection with specific germs outside of the body; while all of those instances of poisoning from the eating of partially decomposed foods demonstrate the activity of those germs which, while not capable of inducing any specific disease, do elaborate most potent chemical poisons.

The number of poisons in decomposing food is probably large, the exact nature of the one found in a given case depending upon the character of the food, the nature of the infecting germ, the temperature and the stage of growth.

THE GREAT SALT DESERT OF PERSIA.[1]

The mountains of Siah Kuh rise to a height of about 5,000 feet above the level of the surrounding plains, which themselves constitute a plateau of about 3,000 feet to 4,000 feet above the sea-level. Looking towards the north, I could distinctly trace the course of the masonry causeway built by Shah Abbas to facilitate the communication with the south across this part of the desert, but the most remarkable feature of the landscape was that presented by the Darya-i-Namak,

[1] From a paper, by C. E. Biddulph, in Proceedings of the Royal Geographical Society, November.