

1868, 630,000 tons of beet-root sugar were manufactured in European countries—about one-third of this quantity being produced by France alone. Formerly the yield was about five per cent. the weight of the beets, but by improved processes, from eight to eight and a half per cent. is now obtained. American beets have been analyzed and found to contain from eleven to twelve per cent. of sugar, eight-tenths of which could be rendered available. From experiments tried in New Jersey, 20 tons per acre may be considered an average crop; taking the yield at eight per cent., this would give 3,584 pounds of sugar to the acre. This is certainly above ordinary crops, as regards remunerativeness. The waste, or residue, after extracting the sugar, constitutes an excellent fattening food for cattle. Brandy and alcohol may be made from the molasses, and the residue of the distillation furnishes potash. The green leaves, collected at the time of harvest, are rich in ammonia, and when dried, can be most advantageously used as manure.

We are not aware how beets prosper in Canada, but have certainly seen some which would be very hard to beat in regard to size. The climate of New Jersey is not dissimilar to our own, and it is probable that if the attention of our capitalists could be directed to the production of beet sugar, much profit would ensue to the manufacturer and the country generally. We should, at all events, be independent of our neighbors, in case political relations were changed, and Cuban insurrections would no longer be regarded with domestic solicitude.

We shall endeavor to keep our readers posted in regard to the main facts and details, but regret that our space forbids giving the articles in question in full.

### TRICHINA SPIRALIS.

The occurrence of this parasite in the human subject, is becoming, unfortunately, quite common in Canada. A case was brought before the public, a short time ago, in which a whole family were attacked by the disease, after partaking of pork for dinner, and which resulted fatally to one of the number. Under such circumstances the revival of the Mosaic restriction, regarding swine, would be of service, but, we fear, could never be enforced. Although pigs are both common and unclean—to judge from the specimens which we see promenading the streets of Toronto—yet a morning rasher, or slice of ham, are by no means to be despised. Notwithstanding this, pork is beginning to be regarded with considerable suspicion; and sausages—at all times rather mystical compounds, suggestive of flesh, other than that of swine—are now invested with a deadly interest, not at all calculated to provoke appetite.

Dr. Letheby, in his last lecture "On Food," delivered before the Society of Arts, England, alluded to the dreaded *trichina*, and its effects on man in the following terms:—

"As regards the injurious quality of meat infected with parasitic disease there can be no question; and, perhaps, of all such infections, the most terrible is the *trichina* of pork. Fortunately, it is a rare affection in this country, although it is often common in Germany. The pork infected with the worm is generally darker than usual, on account of the irritating or inflammatory action of the creature lodged in the muscles; and when the parasite is encysted the meat presents a speckled appearance—the minute white cysts containing the worm being just visible to the naked eye. Here are specimens of it in both its encysted and non-encysted conditions; and this diagram represents the appearance of the worm when it is examined under the microscope. It is, as you see, a minute thread-like worm, about the thirtieth of an inch in length, coiled up in a spiral form; hence its name, *trichina spiralis*. It is generally found in the human subject in an encysted state, when it has passed beyond its dangerous condition and has become harmless. In most cases, when thus discovered, there is no record of its action, and therefore it was once thought to be an innocent visitor; but we know that while it was free—that is, before nature had barricaded it up in the little cyst, its presence was the cause of frightful disorder—killing about 50 per cent. of its victims in terrible agony. In Germany there have been frequent outbreaks of the disease, which, for a time, baffled the skill of the most experienced physicians; in fact, we hardly know how long or how often the disease has attacked the pork-feeding population of Europe, for its actual nature was unknown until the year 1860, when Dr. Zencker, of Dresden, discovered the pathology of the disease. Since then there have been several visitations of it, as at Plauen, in Saxony, in 1862; at Hettstadt, near Eisleben, in 1863; and at Hedersleben, near Magdeburg, in Prussian Saxony, in 1866. In all these cases the same symptoms, or nearly the same, were observed; there was sometimes immediate disturbance of the digestive functions, but more commonly a day or two elapsed before any particular symptom was noticed, and then there was a feeling of lassitude, with a loss of appetite, and pains in the head and back. Then followed a serious disturbance of the alimentary canal with vomiting and diarrhoea. This lasted for a day or two; and by the end of a week after the worm had been eaten, fever had set in, which became more and more severe, and by that time the young worms which had been hatched in the body had migrated to the distant muscles, causing the most excruciating pains, so that the patient, fearing to move his inflamed muscles, would lie motionless upon his back; and if he did not die in this state of the disorder, nature came to the rescue, and imprisoned the creature by surrounding it with a fibrinous cyst, where it lives for years, being ready at any moment to acquire activity when it is swallowed and released from its cell. Indeed, the way in which it becomes dangerous is this—flesh infected with the parasite is eaten; and the cyst being quickly dissolved by the gastric juice, the creature is set free. Finding itself in the midst of nourishing food, it rapidly grows, so that in two or three

days it is three or four times its original size, and may be easily seen, like a bit of fine thread, with the naked eye. The worms are of different sexes, and they rapidly come to maturity—each female giving birth to from 300 to 500 minute thread-like worms, which immediately set out upon their travels, piercing the walls of the intestines and migrating to distant parts of the body, where they produce the terrible mischief I have described. Although the pig is the animal which is most commonly infested by it, yet it has been found in the muscles of dogs, foxes, badgers, sheep, moles, hedgehogs, rats, mice, frogs, and most carnivorous birds, all of which must have been subjects of the disease, but none appear to suffer from it like man; even children are less affected by it, for they seem to sleep it away. Fortunately, there is an easy method of discovering its presence in animals, for the most certain seat of the creature is in the muscles of the eye; we have therefore only to examine these muscles with the microscope to declare whether the meat is infected or not; and, at the present time, the sausage-makers of Germany have the pork examined in this manner before it is used for food."

### THE CHEMISTRY CLASS.

#### DISTRIBUTION OF PRIZES.

The presentation of prizes to the members of the various classes, in connection with the Mechanics' Institute, and also the chemistry class of the Pharmaceutical Society, took place on Monday evening, April 12, in the Music Hall, of this city. A large and highly respectable audience were in attendance.

The Hon. G. W. Allan took the chair, and with him on the platform we noticed Mr. W. H. Dunsbaugh, Mr. Sheppard, Mr. J. T. Shapter, Mr. J. Withrow, and other leading members of the Institute, and Pharmaceutical Society.

After a short address by the Chairman, and the reading of the annual report of the Institute by Mr. Sheppard, the distribution of prizes was proceeded with. These were awarded for book-keeping, mathematics, drawing, proficiency in the French and English languages, and chemistry.

Mr. Dunsbaugh, in answer to an inquiry made by the Chairman, said that he was exceedingly sorry that the President of the Pharmaceutical Society was prevented by important business from being present to award the prizes, but that Dr. May would act in his place. A letter had been received from Mr. Elliott, which Mr. Shapter read to the meeting. After expressing regret at his unavoidable absence, the writer went on to say:

"I would express my congratulations to those students who have at the same time honored themselves and the Society of which they are members, by the interest and diligence they have manifested, and have thus earned the marks of approbation they are to receive. And there is every reason to believe that many others of the class who have not been fortunate enough to gain a prize, nevertheless deserve commendation for the pro-