

The Society for the Promotion of Agricultural Science.

As I mentioned in the last issue of this Journal, the American Society for the Promotion of Agricultural Science held its third annual meeting at Montreal on the 21st, 22nd, and 23rd of August. Whether owing to a lack of interest in the objects of the association, to the great press of work in the hayfield, or to the want of advertising the meetings in the papers, I know not, but the attendance was very scanty: fourteen only were present at the Monday morning session, and not more than thirty on the Tuesday morning. Amongst the company, not members of the Society, I only observed Messrs E. A. Barnard, Director of Agriculture, Chapais, Painchaud M. D., and Wm. Evans, all the rest, as far as I could judge, were from the States.

Mr Freeman, in an article, published in *The Fortnightly* for August, speaking of the impressions he had formed during a recent tour in the States, says that he found not the slightest difficulty in understanding any of the speakers there. For myself, I must confess that Mr Freeman was more fortunate than I. Except as regards a few, among whom I may mention professors Kedzie, Real, Sturtevant, and Arnold, the enunciation of the readers was so rapid and indistinct, that it was with the greatest difficulty I could follow the arguments; and when it came to figures, the difficulty became an impossibility. The final consonants seemed to be left to take care of themselves; and the tongue, teeth, and palate, without a full use of which organs no public speaker can convey his words to an audience without inflicting upon them a terrible amount of overstrained attention, were entirely unused. In fact, I remarked that one gentleman soon left the room, so utterly incapable was he of understanding the address of the then speaker. How the pupils of the different universities manage at the lectures they attend is a puzzle to me, but, as use is second nature, I suppose they guess at the words; the reporters, I presume, made up their matter from the MSS. of the essayists.

I subjoin a corrected report of the lecture on "The Sources of the Nitrogen in Plants;" and I beg to thank professor Kedzie for his great goodnature in complying with my request for it. As I observed last month, some of our Montreal papers made him say the very reverse of what he intended.

Professor Goessman's lecture on "The Mineral Constituents in Plant growth," read by professor Penhallaw in the unavoidable absence of the author, traced the growth of our present knowledge of these constituents from its earliest sources. He showed that up to 1830 a general ignorance on the subject prevailed, even among scientific men, though Sir Humphrey Davy had a considerable insight into the facts of the case. As late as 1830, Sprengel asserted that bone-dust was of no use as a fertiliser, and ten years later, Dumas, the celebrated French chemist, considered the mineral constituents of plants a mere incidental feature in the vegetable economy. (1)

An account followed of various experiments on the use of different fertilisers on vines and strawberries.

The next paper was on "Our Animal Plagues, and the Means of Controlling them," by Mr Salmon, Veterinary Surgeon. A most interesting paper, following closely in the footsteps of the great Frenchman, Pasteur, whose inoculation experiments have won for the investigator the highest reputation among scientific and practical agronomes.

It seemed to be the opinion of the meeting, that the argument in favour of vaccination (as stated by Mr Barnard on

(1) Observe; bones, lime, marl, and ashes of wood, turf, clay, and coal, had been all largely used long before this time. Here, as in many, I might say in all cases, practice employed, before science explained.
A. R. J. F.

behalf of Dr Painchaud, of Varennes,) namely, that there is no danger in using vaccine, provided that it has been properly selected and carefully treated, is scientifically correct. If nothing but the vaccine be removed from the vesicle, there is no danger incurred in using vaccine from a subject having other (*non-contagious*?) diseases. (1)

A paper on the germination of seeds gave no new facts on the subject. Much, in my opinion, depends on the quality of the land and its state of fineness. Beans (our horse-beans. I mean to say) I have known come up from a depth of seven inches, melons at four inches, and wheat is commonly ploughed in to a depth of four inches in some of the peaty soils in Berkshire, England, and does well. Here Mr J. J. Thomas says, "beans do not reach the surface at a greater depth than four inches, and wheat sown two inches deep produced plants of diminished vigour, decreasing in strength as the depth increased; which is strange, as in England, autumn wheat is always put in on light soils at least three inches deep, if it be possible. This, as in fact most of the papers were, was more suggestive than conclusive.

TUESDAY AUGUST 22ND.

After professor Kedzie's paper on the "Sources of Nitrogen in Plants," for which see p. 84, Dr Caldwell, of Cornell University, addressed the meeting on what the Germans have called "The Maintenance Ration," i. e., the quantity of food substances on which an animal can be kept without increase or diminution of weight. The results obtained by professor Sanborn, at the New-Hampshire Agricultural College, go to show that the German ration is larger than necessary; but the subject is full of difficulties, and brings up the whole question of the real value of food grown in different countries, or in different districts of the same country. I have often insisted, in this Journal, on the curious but incontrovertible fact that swedes grown near Brighton, England, will only keep sheep going, while the swedes grown near Shoreham, only 15 miles distant, will fatten them. Therefore, I am inclined to think that when the animals under professor Sanborn's care gained 1.37 lbs a day on the *maintenance ration* of the Germans—and on even less—there must be some strange difference in the quality of the two foods, in the time of year in which they were used, in the influence of the two climates, or in the quality of the animals on which the experiments were tried. Anyhow, a consensus of opinion on the point can only be had after an interchange of trials and visits of inspection between the two continents. Sir John Lawes, to whom I have written on the subject, will probably let us hear his opinion before long.

Mr Gulley's valuable paper, on "The food value of Cotton seed," followed, and is, I think, worth printing *in extenso*: I will not warrant the absolute correctness of the figures, but I believe there is very little fault to be found with the reasoning.

FOOD VALUE OF COTTON SEED.

F. A. Gulley, Professor of Agriculture at the State Agricultural College of Mississippi, then read a paper on the "Food Value of Cotton Seed." The crop of cotton seed amounts to 3,000,000 tons or 180,000,000 bushels. During the past year it is estimated that the oil mills consumed 180,000 tons of seed in the manufacture of cotton-seed oil, while less than one-half of the remainder was used for fertilizers, seed, and feeding stock, the balance being a total loss. In the manufacture of oil a ton of seed yields from 35 to 40 gallons of oil and 600 to 700 pounds of oil cake. The husk or hull of the seed, which was removed before the oil is ex-

(1) Dr Emery Coderre would probably deny this conclusion, but the weight of evidence, and the almost universal practice of the medical profession, are against him.
A. R. J. F.