

one day, from Aberdeen. They cross famously with Shorthorn bulls; the champion winner of the Smithfield Club, Mr. Colman's, M. P., gray ox, was of this sort. The weight of his four quarters was  $72 \frac{0}{10}$  of his life weight—a good though not unprecedented, per centage. *Judge* is a remarkably fine specimen of his tribe, his measurement is as follows: Girth behind the shoulder 96 inches; length from point of shoulder to setting on of tail 78 inches (1). He is said to have weighed, before shipment, 3000 lbs. and allowing, as an animal of that sort fat, but not in show order,  $67 \frac{0}{10}$  of live weight, he would have afforded to the butcher just 2010 lbs. of marketable beef; which, at 15c. ( $7\frac{1}{2}$ d. stg.), would give as his value about \$300. His length is prodigious, there is no waste about him, and the thickness of his loin, his rounds of beef, his masculine head, his rich coat, level crops, and his wonderful hide, have no more bone to support them than is absolutely necessary. His touch (quality) is like the touch of a very wellbred Shorthorn.

The Kyloes, whose beef fetches the very highest price in the London market, are from the Duke of Argyll's herd. They are good specimens of the race, and I should not like to see any weather that would daunt them. The curious veil of hair, from the forehead to the eyes, is worthy of observation. The whole horned stock numbers 307 individuals.

There are 84 sheep, of all sorts; as they were at some distance from the homestead, we did not see them. The herd took 26 prizes at the Montreal show, including the first prize for fresh butter, made by the fair hands of the Mistress herself (almost her *coup d'essai*), which shows how judgment and common sense can make up for want of routine experience. One red Shorthorn cow had just calved, and besides feeding her calf, gives a pailful of milk twice a day. The county of Rouville's collection of apples was enriched by upwards of 20 sorts from the Whitfield orchards, that Abbotsford could not supply! As a fruit-farm its situation is perfection, and if judiciously planted and managed, it would serve as a model for the whole country-side.

During our return to Marieville a strange silence occupied the senses of both of us. At last, it was broken by the tentative: "What a gorgeous start the Whitfield farm would make for a Provincial school of Agriculture!" "Oh!" was the reply, "then we were both pondering the same idea. I thought so, but I hoped to be the first to enunciate it. I was comparing this place with the College at Guelph. That has cost the Ontario Government, several hundred thousand dollars, though it has neither such a variety, nor such a valuable collection, of stock; it has not half the extent of land, and what it has is not nearly so varied in quality; the buildings are not to be compared, either, in convenience with those we have just seen. Can't something be done about it?"

ARTHUR R. JENNER FUST.

### METEOROLOGY.

*A Lecture, delivered at Frelighsburg, Jan. 12th. 1881, by Arthur R. Jenner Fust, M. A., Barrister-at-Law.*

'Science!' I think I hear some honest old fellow exclaim: "In my time we heard nothing about such nonsense as that. It was enough for us to know how to plough, to sow, to harrow. It did not want much science to teach us how to do that." Perfectly true. Not much science was wanting, either, to teach you how to exhaust your land; but a little science would not be amiss if it would teach you how to restore your land to its pristine fertility. In haytime and harvest, your crops, after all your labour, are dependent upon the weather: would any help from science, which should teach you to foretell the probable weather 24 hours in

(1) These measurements are too doubtful to judge from.

advance, be a thing to despise? Two ploughs are offered you for sale—equally showy in appearance—would science be useless, if by means of the *dynamometer* she showed you which of the two would give your horses the less work? Two samples of manure—guano, superphosphate, or what not, are forwarded to you for choice: science can tell you the comparative value of each: will you spurn her aid? What is this science after all but a Latin word equivalent to our old English word *knowledge*. I don't know any modern trade that can get on without it. The builder can't; he may never have heard of the *parallelogram of forces*; but he must know all about levers, pumps, screws, and arches. The miller can't; he would not be able to adjust the diameter of his wheel to the cubic contents of the bed of his stream without it. The tanner does not refuse the aid of science in hastening the preparation of his leather, or in cheapening the materials used in his pits; and the dyes of the cloth manufacturers would be but strangely blended, were it not for the *mordants* which his chemist enjoins him to use.

Some time ago, a foundry-proprietor, weary of paying out money for coals, determined to utilise a fine water-power which lay about 2 miles from his establishment for the purpose of working his fan or blast. The pipes were laid, and the fan went to its duty with great energy—no effect though in the Cupola! How so? There must be a hole through which the air escapes—pipes were taken up and cased in tarred cloth: still all the sound in the cupola was as of an asthmatic old man wheezing away at a tobacco-pipe that would not draw. At last, science was consulted, and replied, in effect, that the foundry-proprietor might have saved all his outlay had he consulted her at first: the friction against the sides of the pipes had devoured all the power of the blast.

The days are coming when, in these old cultivated lands, we shall have but a choice of two things: either to let the soil revert to its former state of *bush*, or to restore its fertility by means of artificial manures and stock feeding. If we prefer the former—well, we must depend on others for our food, and become a purely manufacturing community. If the latter, without we know something of science, we shall be robbed with impunity on all sides.

Now, science is to many a word of vague meaning and vastly terrific sound. It must not be allowed to frighten you though. The more you know of science in general the better you will understand its principles, I mean its foundations; you need not be an engineer or an analytical chemist to be very usefully fitted for your agricultural career. A few weeks earnest application for 3 or 4 hours a day would give you such an insight into the practical working of those branches of science that concern you, that you would feel yourselves in a position to detect a fraud whenever you meet with it—and that, at all events, is more than 99 farmers out of 100 can do now. Of all impossible lies that are told in the world, commend me to those told by certain men who have trees implements or manures to sell. If you can learn, by a little study, how to avoid being robbed by those scoundrels, you will not have wasted your time.

I shall now proceed to consider that branch of science with which perhaps we have most concern—*Pneumatics*, we could not breathe without pneuma—the breath—but with us it has a wider signification. Pneumatics treats of the air, and the laws which govern its condensation, rarefaction, and gravity. The body of air surrounding the entire surface of our globe is supposed to be about 57 miles high. You can form no more idea of this than you can of what 200 million dollars are; but conceive a ball one foot in diameter having been left untouched in your drawing room, by a careless housemaid, until it has accumulated a coating of dust one-tenth of an inch in thickness: that is about he