The Breeder and Grazier.

The Durham or Improved Short-Horn.

This invaluable breed of cattle has for many years obtained a world-wide reputation, following the tract of agricultural improvement in all countries, and adding materially to the wealth both of individuals and of nations. The breed did not originate, as is commonly supposed, in the County of Durham, but is unquestionably of Dutch descent. Upwards of a century ago it was the practice of many graziers along the eastern coast of England, occupying the richest pastures of that country, to make trips to Holland and select there the best bred stock with a view of improving their own herds. We are mainly indebted to Sir William St. Quinton, of Scampster, and the Dobinsons, for the first great changes effected by their importations and judicious crossings; and to these gentlemen it may be said we owe the present improved breed of short-horns. Much had been done in the way of improvement, particularly in the Valley of the Tees, before any trust-worthy record of pedigrees was published.

Since the appearance of the bull "Hubback," calved in 1777, with which the *Herd Book* commences, many breeders in the County of Durham, on the banks of the Tees, seeing the good effects of proper selections, and the improvements made on their own stocks by importations from Holland, were led seriously to turn their attention to the new breed, now first known as "Short-horns," a name given from the animals being shorter in the horns than any other large breed. The appellation of "Teeswater," or "Durham" breed, was acquired from their having been first improved in this part of England. The first great step of the breeders in these districts, in improving the breed was by selecting bulls and cows of the most perfect form and symmetry, with fine bone; while the object of the Lincolnshire and Yorkshire breeders was the selection of large animals. From this cause, the Short-horns on the Tees obtained pre-eminence over those of other parts of the country. Among the most distinguished improvers of this breed the Messrs. Charles and Robert Collings occupy the foremost rank, who did more to develope its peculiarities and good qualities than all the breeders who preceded them; their famous bull "Comet" sold for a thousand guineas, and their stock generally, whether hired or sold, fetched very large prices. At Charles Colling's sale in 1810, seventeen cows, seven heifers, five heifer calves, eleven bulls, and seven bull calves, in all forty-seven animals, were sold for £7,115, averaging upwards of £151 each. At Robert Colling's sale in 1818, thirty-four cows, seventeen heifers, six bulls, and four bull calves, in all sixty-one animals, sold for £7858, or near £129 a piece. In 1810 the well-known herd of Earl Spencer, including bulls, cows, and calves, averaged £69 each. More recently Mr. Bates's sale at Kirkleavington, including all ages fetched £67 each; and in 1823 Lord Dacre's averaged £150 a-piece. Coming down to within the last half-dozen years, we find that the average price of well-known herds including aged animals down to calves ranged from £50 to £81 each. Col. Townley sold his bull, "Master Butterfly," to a Society in Australia for 1,200 guineas!

These prices sufficiently indicate the high value placed upon the breed. A still more extraordinary estimate is placed upon certain families of short horns; and the names of particular breeders, as those of Bates, and Booth, and Townley, confer a high market value upon stock descended from their herds. Each of these families has certain permanent characteristics which by careful breeding are transmitted from one generation to another. A brief review of the history of the "Duchess" tribe of Short-horns will afford an illustration. More than half a century ago, when Mr. Charles Colling's herd was sold, a young heifer named "Duchess" was bought by Mr. Thomas Bates, of Kirkleavington. From her descended a tribe of Short-horns known as Duchesses, which are believed to possess all the leading merits of the breed in an extraordinary degree. In particular, they are possessed of a remarkably soft and silken touch, of abundant hair and other indications of vigour,—of most symmetrical form, great and equal breadth of back, well-arched ribs, and prominence and width of bosom. It is not only in the pure bred Duchesses that this extraordinary merit appears, but whenever a cross of the same blood has been given it appears to have unusual influence. This is one of the results of what is called in-and-in breeding. Animals which have inherited again and again in the course of their pedigree the qualities which relationship in blood has conferred in common, possess those qualities much more energetically than others do in whom they are observed for the first time. A cross bred run may have a very desirable coat upon his back, and a very well made carcass of mutton within that coat, but it is exactly a toss up whether his progeny acquire the character of his sire or that of his dam. If sire and dam for generations back have exhibited constancy and uniformity of character, then that character is certain to reappear in their offspring, which in his or her turn will possess still greater power of transmitting good tendencies to the following generation. It is thus that not only in the Duchess blood, but in other tribes descended from the Kirkleavington herd, we have as the result of Mr. Bates' resolution, patience, skill and constancy, qualities which reappear in generation after generation, until an animal may now be safely characterized as good if known to be of Bates' blood. In this breeding from the most approved types of the same family, care must of course be exercised not to push this system too far, so as not to endanger the constitution and procreative power of animals. It is well known that when evils of any kind are inherited, as a tendency to disease or weakness of any kind, breeding in-and-in will intensify, and hand that down with as much certainty as any other quality; but the natural law of breeding, which obtains amongst gregarious animals, where the strongest sire is the father of the herd or flock, to the almost entire disregard of previous natural relationship, is a safe one to follow. It is natural law of this kind that gives to particular herds and flocks, when they have long been under the control of one man, their uniformity of character from year to year. The thing is as true in flocks of sheep as in herds of cattle; and Mr. Webb's flock of Southdowns, which has only been recently scattered by the auctioneer to all lands, will no doubt perpetuate and extend the influence of his skill and character just as those of Mr. Bates are felt on both sides of the Atlantic at the present day.

Of the adaptation of the Shorthorn to the climate, pastures, and markets of Canada, we have already sufficient evidence in the trials that have been made by a number of enterprising agriculturists in different sections of the Province. The late Hon. Adam Fergusson was among the first to introduce the Duchess blood, of the superior excellence of which he had a high appreciation. The names of Wade, Miller, Snell, Stone, Hodgskin, &c. are familiar to our readers in connection with this important department of stock farming. We trust that as our financial prospects brighten, such enterprise will receive a more ample reward. For early maturity, weight and symmetry of carcases and aptitude to fatten, the modern Short-horn may, perhaps, be affirmed to be without a rival. We say this without the least desire to disparage other breeds, of whose excellencies and adaptations we shall take occasion to speak hereafter.

Large Six-year-old Steer.

To the Editor of THE CANADA FARMER.

SIR,—As you invite correspondence on everything connected with farming, I venture to trouble you with the dimensions of a six-year-old steer I am now feeding:—

Height, 6 feet 3 inches.
Girth, 8 feet 11 inches.
Length, 6 feet 4 inches.

On comparing his size with that of those shown at Smithfield, as given in your first number, you will see that he girths nine inches less than the largest of them, but is nine inches longer. He will require ten or twelve months more feeding; and if he gains at the rate he has done the past four months, he will by that time girth several inches more than the largest of them. Good judges estimate his weight at present at from 2,700 to 3,000 lbs. Could you or some of your readers give the rule for computing the weight of animals from their measurement?

A. S. MILLIGAN.

Clarke, March 7th, 1864

Production of the Sexes at will.

In our second issue, we referred in a brief paragraph to the speculations of Professor Thury, of Geneva, on the above subject. We are now enabled to give a somewhat more particular account of the matter. The Professor believes he has discovered the "Law of the Production of the Sexes," and his theory may very properly be labelled, "Important if true." He was guided to his conclusions partly by analogies furnished by the natural history of the Bee and of Poultry. It has been observed, he says, that in bees the fecundation of the ovum, when it takes place early, results in the production of workers (females), while if it be retarded beyond the 22nd day all the eggs deposited are male eggs. So, in the case of poultry it has been observed that the eggs last laid nearly always furnish the cocks of the clutch, and he has thought it probable that the last eggs which detach themselves from the ovary of the fowl are those which have had the most time for maturation. The following accordingly are among the conclusions at which he arrives:—

1. Sex depends on the degree of maturation of the ovum at the moment of its fecundation.

2. The ovum which has not attained a certain degree of maturation, if it be fecundated, produces a female; when this degree of maturation is passed, the ovum, if fecundated, produces a male.

3. When, at the rutting-season, a single ovum separates from the ovary to descend slowly through the genital canal (as in uniparous animals), it is sufficient that the fecundation takes place at the commencement of the rutting-season to produce females, and at the end to produce males—the turning-point of the ovum occurring normally during its passage in the genital canal.

Then follow instructions sufficiently obvious as to the application of these principles in the case of the larger mammalia.

The following certificate, however, from a practical farmer, Mr. George Cornaz, of Montel, in the Canton de Vaud, is what will have most interest in the eyes of breeders. He says, under date of February 10, 1863:—

"I received from M. Thury, Professor in the Academy of Geneva, under date of the 18th February, 1861, some confidential instructions, the object of which was an experimental verification of the law which governs the production of sex in animals. I have applied to the management of my herd of cows the data furnished to me by M. Thury, and obtained at once, without any uncertainty, all the expected results.

In the first place, in twenty-two successive cases, I wished to obtain heifers; my cows were of the Schwitz breed, and my bull a pure Durham; the heifers were in demand amongst breeders, and the bulls were only sold to the butchers. I obtained the desired result in all cases.

Having subsequently purchased a cow of pure Durham breed, I desired to obtain from her a new bull, which might replace the one which I had bought at great cost, without waiting for the chance of the birth of a male. I operated in accordance with the directions of Professor Thury, and the success again confirmed the truth of the process which had been communicated to me—a process, the application of which is direct and very easy.

Besides my Durham bull, I obtained six other bulls, of a cross-breed between the Durham and Schwitz, which I intended for work; by selecting cows of the same colour and size, I obtained very well-matched pairs of bulls. My herd consists of forty cows of all ages. To sum up, I have made in all twenty-nine experiments according to the new process, and all have given the desired product, male or female; I have had no case of non-success. All the experiments were made by myself, without the intervention of any other person. I can consequently declare that I regard the method of Prof. Thury as real and perfectly certain, hoping that he will soon be able to profit all breeders and agriculturists in general by a discovery which will regenerate the business of cattle-breeding."

This certificate will certainly have sufficient interest in the eyes of intelligent stock-breeders to induce them to experiment according to M. Thury's instructions.

KIDNEY WORMS IN SWINE.—The presence of kidney-worm may generally be known by the animal appearing weak across the loins, and sometimes by a weakness in one or both hind legs. As soon as these symptoms appear, give the animal corn soaked in lye of wood ashes, or strong soap-suds: at the same time rub the loins with spirits of turpentine. We have heard of arsenic being given for this complaint, but do not know the proper quantity for a dose