

In the live stock of the farm, the working and the results of the same spirit are apparent. About ten years after Tull launched boldly the barque of theoretical agriculture, and set open for ever the door of improvement, Mr. Bakewell commenced those experiments upon breeding, which, as he based them upon rational principles, and upon a deep and observing knowledge of the nature of the animals he wished to improve, were attended with the most decided success.—Thus the sheep which he introduced, and the Messrs. Culley carried to perfection, possessed the quality of being fatted at little more than two years old, while the old breed were scarcely ever fit for the shambles till they were twice that age. This advantage was appreciated, for we know that one of his rams was let for the season for 800 guineas, and that the produce of one ewe and one birth, (three rams), were let for 1,200 guineas. His bulls, too, fetched 100 and 150 guineas each. Since this time, breeding has continued to be a branch of agricultural science, by no means attained without time and study and capital. Yet it is still growing more and more popular; and although the gradual diffusion of the sheep and cattle descended from Mr. Bakewell's stock has reduced the prices, a good animal of any pure breed is yet sought after with avidity, and purchased at a sum far above his intrinsic value for any other purpose than breeding. Thus we read that Mr. Jonas Webb, of Babraham, Sussex, let a South Down ram for 100 guineas, to the Duke of Richmond, at his last show; and, (I take the first case which comes to my hand), Mr. Smith of Burley, let fifty-one rams at an average of £10.4s. each, and twelve at an average of £18.10s. each. The following statement of the prices, fetched by animals of the Short Horn, Hereford, Sussex, and Devon breeds, at the latest sale of each sort, which we can meet with, will show in what estimation well bred cattle are held. Thus,

SHORT HORNS.

BULLS.

	Guineas.
"Buchan Hero," (prize Bull at Berrwick), sold to Messrs. Whittaker and Tempest, for.....	200
Messrs. Higginson & Wilson's "Sir Thomas Fairfax," for.....	155
Mr. Jacques' (Richmond, Yorkshire), "Clementi,".....	150
Mr. Wilson's (Yorkshire), "Young Sir Watkin,".....	100

COWS.

Mr. Jacques' "Mermaid,".....	105
Do. "Golden Drop,".....	160
Do. "Lady Ann,".....	135
Do. "Rachel,".....	100
Mr. Higginson's (Yorkshire), "Amazon,".....	135
Do. Do. "Alexandrina,".....	140
Mr. Wilson's "Brawith Bud,".....	160

CALVES.

Mr. Jacques' bull calf "Dulcimer,".....	105
Do. heifer calf "Hippodamia,".....	60
Do. do. "Purity,".....	51
Mr. Wilson's do. "Snowdrop,".....	60
Do. do. "White Rose,".....	42

HEREFORDS.

BULLS.

Mr. Price's "Tramp,".....	100
Do. "Trueboy,".....	140
Do. "Washington,".....	110
Do. "Murphy Delany,".....	110
Do. "The Rejected,".....	110
Do. "Victory,".....	100

COWS.

Mr. Price's "Wood Pigeon,".....	150
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Do. "Ceres,".....	115
Do. "Tube Rose,".....	100

CALVES.

Mr. Price's 12 bull calves at an average price of £12.10 shillings each.
Mr. Price's 10 heifer calves at an average price of £27.3s. 4d. each.

SUSSEX.

BULLS.

Mr. Putland's old bull,..... 52

COWS.

Mr. Putland's one at..... 60
Do. do. 50

DEVON.

BULLS.

One of Mr. Quayley's (Molland), 18 months..... 97

COWS.

Do. do. "Comely," 53

CALVES.

One at..... 214
Do. 184

At Mr. Parkinson's sale last year, (1840), the cow "Adelaide" sold for 220 guineas, and a bull calf, ("Collard") for 200.

To pigs, if possible, greater attention is paid than to any other animals. The pig is the poor man's stock, and of course is his study, so that a knowledge of his "points" and qualities is more generally diffused than of any other animal. The poor man loves his pig; he looks upon him as his winter food, and it is rare that we find him ignorant of what sort of an animal will turn out well. Rare too, is it, to find the pig badly kept.—The "pig first, and family next," is the motto of many. "We had better be pinched in summer than in winter," was the expression of one who practiced this principle.—Still more rare, therefore, is it to find that the cottager's judgment and care are thrown away. The individual I alluded to above is an instance. The pig, though of the short-eared breed, at 12 months old, took the first premium at the Wetherby meeting, as the "best fat pig;" and at 15 months produced 440 lbs. of bacon.

At the last pig sale in this neighbourhood, four young sows of the Rev. Mr. Higginson, fetched £75; and three, at three months old, sold for £45.

Of the value, however, of our various breeds of swine, the American farmer appears to be aware; hence the large importation of each sort into the new world, and Mr. Allen's tour will not, I presume, diminish the demand.

In breeding and training the horse, the English farmer has attained the highest possible standing. The English race horses and hunters, carriage horses and cart horses, are the admiration of the whole world. The extent of the stock of English horses may be judged from the fact that one English dealer, (Mr. Elmore), has engaged to supply the French government with 2,500 cavalry horses in *three months*; and the quality, from the circumstances that though the agreement is now nearly completed, our own stock is so far from being injured, absolutely relieved; (the horses sent being those hybrids, between the hunter and the chapman, which are the breeders' "weeds")—and that even the horses rejected by the inspecting officer, are readily sold at a much higher price than the government gives.—(Vid. Nimrod's Foreign Sporting New Monthly Magazine, No. 250, page 250).

The pure bred animals of each class are kept at home at superior prices; the race

horse varying in price from hundreds to thousands; the hunter from £50. to £200.; the carriage horse from £30. to £100., and the cart horse from £5. to £40.

Of the permanent improvement in the soils of England, which have been made within the last century, but light mention can be made here. Amongst the most important of the means used, are draining, subsoil ploughing, irrigation, and warping. Draining, irrigation, and even subsoil ploughing were no doubt known in the olden time; their extensive adoption, however, as a means of fertilizing the soil, is a modern improvement. Thus, though English farmers have known for ages, *how* to convey water from one place to another by a drain, we do not find that it was ever employed to thoroughly alter the constitution and general temperature of a soil. It was not, then, till the general reactions in the spirit of agriculture took place, till Tull, by fanning the spark into a sudden flame, set others to think as well as himself, and till Bakewell had applied the principle to breeding, that it began to be understood fully. The labours of Dr. Anderson and Mr. Elkington, (1761), showed at once that it was an agent which, if properly used, would be of an immense benefit, and *how it should be used*.—Since that time it has assumed the shape of progressive system, dependent on scientific principles, and as such has improved in its practical details and in its results.

The advantageous effect of draining upon heavy soils, must be just as great as the injurious effect of too much water. What these evil effects are, Professor Johnston, in his Lectures at the Durham University, has shown; and Dr. Madden, in an elaborate paper in the "Quarterly Journal of Agriculture," for this month, (December 1841), shows most beautifully the mechanical as well as the chemical action by which too much moisture injures the vegetative process. To quote from either of these authorities in this hasty sketch, is not in our power.

The good effects of irrigation and warping; both merely systems of applying weak liquid manure in immense quantities, and of the subsoil plough as an instrument by which the water is permitted to diffuse itself more generally through, and the atmosphere to act upon the tenacious subsoil, so as to make a change as it were in the general character of the component parts of the soil,* may also be philosophically demonstrated. But it is in each case unnecessary. We have the proof positive in millions of acres.—Thus the fens of Lincolnshire, Huntingdonshire, and Cambridgeshire, which 50 years ago were stagnant marshes, are now luxuriant pastures; Chat Moss, (Lancashire), in 1820, a yawning morass, and now a golden cornfield, studded with incipient villas,† and the statements of Mr. Denison of Kilnwick Percy, (Transactions of the Yorkshire Agricultural Society), of the Rev. Mr. Craft, (Journal of the Royal English Agricultural Society, vol. 2, p. 32), of Sir James Graham, (Journal of the Royal English Agricultural Society, vol. 1, p. 32), and of the author of British Husbandry, (vide Pamphlet on Land Draining, &c.), exhibiting, as they do, a change from comparative sterility to fertility,

* Vid. Evidence of John Smith, Esqr., inventor of the subsoil plough. Also, "Statement of T. F. Kennedy, M. P.," before committee of the House of Commons, 1837.

† 200,000 acres of the Lincolnshire fens have been reclaimed. In other counties many acres have been similarly reclaimed. 25,000 acres of Deeping fen are drained by two steam engines of 60 and 80 horse power.

1 Vid. Evidence of M. J. Ellis, before House of Commons, 1837.