

ing, either on hilly or level ground, any description of pulverized manure, even in a damp state, and in any quantity from 8 to 20 bushels per acre. The corn or seed and manure may, at the will of the cultivator, be deposited at an uniform depth; or, if required, the manure may be buried deeply, and the corn or seed placed by a separate coulter above the manure. Hitherto great difficulty has been encountered in effecting a regular delivery of damp manures, from their liability to form an arch in the box over the stirrer. To obviate this imperfection Mr. Hornsby has ingeniously contrived, by means of an endless screw, to give to his stirrer in the box a traversing motion lengthwise, as well as a rotary motion; so that as the points revolve they change their position, the whole line of the box being traversed, and a continuous train of manure deposited. The Judges highly commend the workmanship and superior finish of Mr. Hornsby's drills.

The turf and stubble-paring plough, invented by Mr. Thomas Glover, of Thrusington, Leicestershire, is an new implement of great value. The Judges highly commended the construction and working of this plough. The surface is pared with great precision and despatch, leaving the turf in a curl or roll, the grass side inwards; a position in which it is sooner dried, and rendered fit for burning without the necessity of turning it over, as is generally required when cut by the biggest spade.

In conformity with the arrangements made by the Council, the Judges submitted to trial the qualities of many of the ploughs designed for the general purposes of the farm, with the view of guiding their judgment in the award of prizes. These trials were made on the race-course at Aintree, the surface consisting of old sward upon a light loam and sandy subsoil. After the implements had

been at work for some time, so that each competitor might have the opportunity of getting his plough in working trim, the Judges proceeded to test each with the dynamometer, in order to fulfil, as nearly as they could, the condition annexed to the prizes, viz., that "lightness of draught will be considered, as well as quality of work performed." For this purpose, and in order to insure as nearly as possible an equality of circumstances, each plough was set to cut the furrow-slice, as nearly as it was practicable, 5 inches deep, 11 inches in breadth, and leaving an open furrow of about 11 inches. The dynamometer (constructed by Messrs. Cottam and Hallen, of London), was then applied, and the resistance noted at the time when the plough in every case appeared to be working in similar soil, and doing its best.—The results of these experiments are arranged in the following table:—

Experiments on the Draught of Ploughs.

MAKERS' NAMES.	RESIDENCE.	Number of Horses.	Number of Wheels.	Slice Cut.		Draught in Stones.
				Depth. Inches.	Width. Inches.	
Perry, Barrett & Co.	Reading.	1	1	4½	10	22
Hart.	Wantage, Berks.	1	1	5	10½	26
Ditto.	Ditto.	2	1	5	11	28
Ransome.	Ipswich.	2	2	5	11	28
Sanders and Williams.	Bedford.	2	2	5	11	28
Howard.	Ditto.	2	2	5	11	28
Ditto.	Ditto.	2	2	5	11	32
Adams.	Northampton.	2	2	5	11	32
Sanders and Williams.	Bedford.	2	2	5	11	32
Hart.	Wantage.	2	2	2½	8	34
Glover.	Thrusington.	2	2	1	{ 11½ } { 13 }	24
Hughes.	Halkin, Flintshire.	1	Swing	5	11	28
Hurling.	Sedgwick, Kendal.	2	"	5	11	30
Wilkie.	Uddington, near Glasgow.	2	"	5	11	32
Ditto.	Ditto.	2	"	5	11	36
H. Turner.	Killingworth, near Newcastle.	2	"	5	11	36
E. Brayton.	Carlisle.	2	"	5	11	40
Love.	Northampton.	2	"	5	11	40
Drummond.	Stirling, N. B.	2	"	5	11	40

A few observations are requisite lest these experiments should be considered as determinate, in the opinion of the Judges, not only of the intrinsic merit of any particular plough, but of the debatable question of the relative advantages of swing and wheel ploughs.—The peculiar circumstances under which these experiments were tried do not permit such final conclusions to be safely drawn.—First, the greater number of the ploughs were new, and many of the mould-boards were freshly painted, or had never been in the ground, which must have necessarily augmented their friction; secondly, some of the ploughmen were inexperienced in the management of the plough which they directed; thirdly, where so many teams of horses were required, some of them were unaccustomed to the work, and did not draw well together. Still, with these reservations, the trials greatly tended to assist the Judges in their awards; and the dynamometer disclosed facts, as to the relative resistance opposed by the different kinds of ploughs, which cannot fail to be of interest and utility to the agriculturist, and also to the constructor.

It appeared that, in almost every case, the draught of the wheel-ploughs was less than that of the swing kind; and it must not be concealed that the wheel-ploughs, in every case, actually turned over more soil than the swing; for the share and sole of the former maintained a flat, horizontal position; whereas all the swing-ploughs leaned more or less to the landside, cutting to a less depth on the right than on the left hand side; consequently, the furrow bottoms left by the wheel-ploughs were more even than those excavated by the swing-ploughs. This difference in the action of the two kinds of ploughs was less observable in the swing-plough made by Mr. Hughes, of Halkin, (exhibited by the Hon. E. Moelyn), which cut a much more

even sole than the others, and offered the least resistance of any plough of that description. It is worthy of remark that this swing-plough had a particularly fine and easy entrance—a share somewhat broader than the slice cut—and a longer mould-board than usual.

The Judges regret that the delays incident to the presence of so large an assemblage of spectators, and to the numerous implements requiring their attention did not permit them to pursue these experiments so as to evolve more important results, and particularly as regarded the draught of several excellent double-furrow ploughs which were on the ground, but not brought into working trim early enough for satisfactory trial.—*London Mark Lane Express.*

SCOTCH AND IRISH COWS.—The Duke of Richmond laid before the Council a communication transmitted to him by Her Majesty's Commissioners of Woods and Forests, containing the results of a trial suggested by the Society to be made in the course of the Experimental Improvements now in progress on the Crown Estate at King William's Town, in the Counties of Cork and Kerry, in Ireland, on the comparative value of Scotch and Irish cows, in respect to their relative produce in milk and butter. The Commissioners, in pursuance of that suggestion, directed the purchase of six Scotch heifers of the Galloway breed, in order to such an experiment being instituted at King William's Town, in regard to their produce as compared with a like number of Ayrshire and Kerry cows then on the estate; and having placed the trial under the superintendence of Mr. Griffith, that gentleman had reported the details of the comparison, which the Commissioners then transmitted to the Society.

The milk of each of the cows having been measured separately, and noted for two

months, it appeared from the returns, that

1. The Galloway cattle gave, on an average, 6½ imperial quarts of milk per day, and that 9½ quarts of milk produced one pound of butter when salted for market.

2. The Kerry cows gave, on an average, 7½ quarts of milk per day, and 8½ quarts of milk produced 1 lb. of butter when salted.
3. The Ayrshire cows gave, on an average, 9 quarts of milk per day, and 10½ quarts of milk produced one pound of salted butter.

Mr. Griffith observed, however, that the Ayrshire cows could not be fairly placed in competition with the Galloway and Kerry breeds, inasmuch as the latter were heifers having each produced the first calf, while the Ayrshire were old cows, each having had four calves; the milk of the same Ayrshire cows, two years previously, having measured only 7½ quarts per day. It appeared from the inspection of the principal butter-merchants of Cork, that the quality of butter produced by the different breeds of cattle, was the same as to taste, though the colour of each was different; that produced by the Galloway cattle was of a deep yellow colour, that by the Ayrshire a bright yellow, and that by the Kerry a still lighter shade of yellow.

The cattle of each breed were in equal condition, in the same pasture; but in the previous winter and spring, it resulted from some experiments made on the comparative cost of keep, that

1. One Galloway cow consumed 21½ lbs. hay
2. One Kerry..... 16½
3. One Ayrshire..... 21½

Mr. Griffith draws the following general conclusion from the whole experiment. "That the Irish breed is best suited to the mountain lands, and to the cold and wet climate of King William's Town, that they are less expensive to feed, and when under the same circumstances, in respect of age, &c., they produce more butter per week than either of the breeds imported from Scotland, but that the cattle are superior for stall-feeding."—[*Th.*]