

is in good hands. It has been hard run by the Shropshires, a race of mixed origin but of great excellence, which has also had its day. No doubt a future is in store for both these breeds, neither of which were known some forty years ago. An unfortunate predisposition to foot lameness is one of the weakest points in the favourite breed of the midlands, and a slowness in coming to maturity may possibly be also recorded as a frequent mark against him (1).—*English Farmer*.

#### CROSS-BREDS.

To establish and consolidate a breed (says a German paper) it is not sufficient that there should be repeated cross-breeding with thoroughbred male animals, but that the breeding should be continued for generations between the male and female progeny of such cross-bred animals. The Duke of Hamilton brought over a Flemish stallion for cross-breeding purposes with the Scotch pack-horse, in order to make the latter more capable of drawing heavy loads up the hilly roads of Scotland, more especially in the district about the Clyde; and thus, by breeding in the same line, not by continued cross-breeding with Flemish stallions, formed the well-known Clydesdale race.

The Scotch pony in the Lothians (?) is said to have originated by cross-breeding with an Andalusian stallion, accidentally brought to Scotland from the Armada; but the race was formed by breeding in the same line. The Yorkshire (Cleveland) bay horse, perhaps the most excellent and most stately carriage-horse in the world, is said to have been formed by one crossing with a thoroughbred stallion—a real indigenous Cleveland stallion—and then by breeding in the same line. (We may mention here, by the way, that Queen Victoria has sixty Cleveland horses, among others.)

The Dutch *Dreuthe*, black horse, is said to have acquired its peculiar type from the blood of an Andalusian stallion, in the time of the Spanish rule in that country, by continued strict breeding in the same line. The large-boned Orloff horse is said to have attained its muscular strength by one crossing with an English stallion. The Lithuanian horse, we are told, owes its astonishing strength for work to some Oriental stallions in the first instance, but by following up a careful breeding in the same line. In England, as well as in Hanover, the half-thoroughbred race produced by crossing with a thoroughbred stallion, is bred on in the line, and only mingled with additional thoroughbred blood for special purposes. In Oldenburg they are forming a breed from the progeny of two Cleveland stallions. (\*)

C. Colling formed by his, we might almost say, accidentally-acquired Hubback bull and specially-selected cows his Teeswater breed, and by some admixture of Galloway blood, his Shorthorns, which he again bred in the line. Repeated crossings we do not hear of, even the various breeds or families of Shorthorns were generally kept pure.

Bakewell did not raise his Leicesters by the repeated use of rams from a specially choice breed, but brought together various long-haired male and female sheep, and then again chose from amongst them those which would pair the best, till he attained his object in the "new Dishley" breed, with whose blood henceforth all white-faced long-haired races were improved. Sometimes a cross breed was effected between the black faced Southdown sheep and a new Dishley (Leicester) ram, and thus, by repeated breeding in the same line, was formed the favourite Shropshire breed.

The present Oxfordshire-down sheep was at first, in the year 1833, the product of a Cotswold ram with South-down and Hampshire-down sheep. Druce and C. Howard then made

use of their progeny for breeding in the line, making careful selections, and exchanging rams to avoid consanguinity, till about the tenth generation (in 1862) it was declared an established breed. A trial was made of repeated crossing with a Cotswold ram, which was unsatisfactory; and Charles Howard himself told the writer in 1852 that the heterogeneous mixture of blood in 1833 had been the reason why the Oxfordshire Down race had been so long in becoming established.

Hermann von Nathusius' Leicester-Merino-Manchamp race was not created by repeated crossing of Leicester and Manchamp rams, but by breeding in the line with careful selections. In the same manner an excellent established breed was formed by Nathusius by the crossing of a Lincoln ram with Merino sheep, when about eight generations in the line had been bred.

These are facts which show us what must be done in forming an established breed, and it cannot be called by this name till all the young are of a similar type. The length of time, or the number of generations which will have to pass before the breed is established, will depend upon the more or less heterogeneous mixture of blood. It is different when for the sake of improvement crossings are effected between animals of a similar type, or between two breeds related to each other, such as Dutch bulls and Oldenburg cows, Oldenburg bulls and cows of Jever, Dutch bulls and Austrian Reed-land cows. Sometimes, too, a thoroughbred stallions may revive a half-bred breed, (1)

#### HOWARD'S GANG PLOUGH.

A handy implement for breaking up stubbles after harvest, ploughing in manure in spring, etc., has long been wanted. The desiderata are two, lightness of draught and weight enough to keep the plough steady in its furrow: nothing frets and annoys horses more than an unequal pull at the collar, which is invariably experienced when the pressure on the furrow sole is insufficient to keep the share down to its work.

The illustration shows the solidity of the new implement, and the late, though not too late, adoption of the American "sulky seat."

#### What is a Shropshire Sheep?

The history of this valuable breed is now well authenticated. There has never been any doubt about the Oxfordshire Downs, as they are termed, as it has been well known all along that at the former part of the present century a direct cross between Hants-downs and Cotswolds was made, and the issue kept together till a fair uniformity of type and quality of wool were established. The way this cross breed has spread in Oxfordshire and some adjoining counties, and the way they have been improved in the colour of their face and legs, from mottled shades to uniform black or dark brown, by the skill in selection of the leading breeders, is well known. It will suffice to say that the breed is a valuable one for the production of wool, and with the dark points now produced the mutton makes a high price in the markets, as butchers leave a small piece of dark skin on the legs and shanks, and thus, fairly enough get Down prices for the joints.

But the Shropshires have a different and more complicated history. They are indeed not Shropshires in the strict sense of the term. A more comprehensive and correct term for them would have been West Midland Downs, as we shall shortly show. There are two old breeds on which the present Shropshires were engrafted, so to express it. Oddly enough, too, these old breeds are natives, as they may be termed, of

(1) i. e. Shropshire.

(\*) Difficult job, I should think.

(1) The pure Downs are races the Leicester and Shorthorns are breeds.