

dry to bear the consumption of the turnip on the land by sheep, and yet sufficiently retentive of moisture to prevent its being burnt up in summer. On light sands and sandy peats, it is apt to be stunted and "flinty;" on strong clays it is weak in the straw, coarse in the grain, and, strange to say, also "flinty" in character; and hence the ordinary varieties on these soils rarely grow to that perfection which is requisite to constitute them a sample suitable to the manufacturer. The Chevalier is unsuitable to the clayey or strong soils, because of the weakness of the straw; it appears as if the corn-producing power of the plant impairs its energies for the production of straw, hence on strong soils it lodges long before the ears are formed, and the produce is unfit for malting. On loose sands and peats, however, the action of the Chevalier is the very reverse; naturally they seem unadapted to the perfection of common barley—it grows coarse and imperfect, whatever may be the quantity of straw. The corn-producing propensity of the Chevalier, however, overcomes the tendency in the soil to grow shrivelled and imperfect grain; and some of the most widely and favourable samples of the Chevalier barley may be grown on these light, inferior, and unproductive soils. The peculiarity of the Chevalier over all others is its particular formation. The Chevalier is rounder and smaller at the ends than the ordinary kinds. It usually also weighs better, because there is a less portion of husk at both the ends of the grain, and it therefore contains a larger proportion of starch. It also possesses much earlier maturity.

In like manner the Annat barley was discovered by a very careful observer in Scotland—William Gourie, of Annat-gardens, Perthshire, in 1830; and he selected three ears, which, like the Chevalier, produced grain round, bright, and fine in quality, stiffer in the straw, and possessing much of the early maturity of the Chevalier, whilst it is both productive and hardy, and has not the objection of premature lodging; however it is favourable for high lying and stronger soils, and it seems, to a certain extent, to remedy the difficulties of the strong land cultivation of barley.

The Battledore is an old variety of barley, grown successfully in all descriptions of soils of a secondary quality. It is short in the ear, the grains small and indistinctly marked, and growing out in two rows, at nearly right angles from the straw. It is invariably productive, but is an inferior description of barley, scarcely fit for the malster from the smallness of the grain, and consequent large proportion of the husk; and as it germinates at times different from the newer varieties, it is generally discarded by the malster.

The black barley is a peculiar variety little cultivated, late in ripening, and coarse in quality; adapted only for situations where finer and more delicate varieties will not grow successfully, and is cultivated on strong lands for the purposes of grinding.

The bere or bigg is a hardy kind, situated to the severities of mountain situations, and where all attempts to grow the more valuable kinds will be found quite ineffectual. Not only are its powers of resisting wet and cold very great, but it also possesses a disposition to ripen early, and is therefore an acquisition to climates and situations where any other kind would be totally unproductive. Nor is a state of soil of any peculiar richness necessary to its development, as it can be produced when other kinds need not be attempted. The grains are small, and contain a large proportion of loose husk, and its use is absolutely confined to grinding.

The above, with the ordinary English barley, are the generally prevalent varieties; but there are, in various parts of the country, persons who cultivate varieties and sub-varieties, either imported from foreign countries, or originating from and named after individuals. Amongst the former are Siberian barley, Pomeranian, Cape of Good Hope, Italian, &c., and the latter Brown's, Black's, Potter's, Lord Western's, &c. &c.

## 2. Preparation of the Land.

The preparation of the land varies exactly in the degree of its being more or less removed from a strong or light texture. In the former the process is one of entirely breaking down the adhesiveness of the soil, so as to render it free from clods, and in the state of the greatest friability of which it is capable. At the best, its defects appear to be that of over adhesiveness, which it seems to acquire before the maturation of the grain in most seasons, and hence there is an imperfect sample. On this soil the preparation commences by a thorough fallowing in the month of May, cross ploughing, breaking up, and the general paraphernalia of a summer fallow are considered necessary; the whole of the large clods must be reduced to the greatest degree of comminution of which they are capable; the manure must then be applied, and the whole ploughed up for winter, when the action of the frost still further reduces the particles of earth, and at sowing time the soil is as intimately broken as it is capable of being.

In cases where a summer fallow is considered objectionable, and where the most is done by the draining of the soil and mechanical appliances that can be, an early crop is taken off, be it tares, or even grain. The scarifiers, of which there are an endless and valuable variety in all localities, are set to work as soon as the crop is removed. These break up the soil, and place it in the exact position it would be, or even more favourable as regards pulverisation, than it was by fallowing and cross-ploughing, performed in May. The only extra work required is the clearing of any weeds which the scarifying process will only bring to the surface. There is not time afforded by this course to admit of the alternate state of wet and dry, which breaks down the texture of the