

been made, and of its fitness to attain that purpose under the circumstances in which it is tried.

Generally, however, an experimental application may be said to be successful, either economically or theoretically—

1°. When it causes the production of a decidedly larger crop than would have been raised without its assistance in the existing circumstances.

2°. When the crop, after paying the additional cost of the application, leaves a larger profit than it would otherwise have done.

3°. When it illustrates the mode of action of the substance applied upon a given crop, in given circumstances—or throws light upon some obscure point, in theory or practice.

4°. In this sense it may often be considered successful when, after repeated trials, it is found to produce no sensible effect whatever. A decidedly negative result may often be as useful as a positive one, not only by preventing the outlay of money on the part of the practical man, but by clearly proving or disproving some theoretical question.

5°. When it suggests new, further, and perhaps more interesting experimental researches.

In this last case, an experiment may prove of great value to the theory of agriculture, and may ultimately be productive of great benefits to the progress of knowledge. Indeed, all new steps in knowledge are suggestive of further research; and it is one of the most valuable consequences of beginning to experiment, with however little knowledge of the subject at first, that a thinking and reading man comes by degrees not only to see his way clearly through what he is actually doing, but to ask new questions of himself, which new experiments, probably never before thought of by any one, can alone enable him to answer. Almost every result he obtains suggests to him further inquiries, when its true meaning is perceived or suspected; and not only is a habit of strict investigation acquired, but the spirit and love of it are awakened and encouraged in his mind.—*Johnston's Experimental Agriculture.*

## CULTIVATION AND MANAGEMENT OF HEMP.

HEMP belongs to a class of plants (*Urtica*) totally different from the flaxworts. The common stinging-nettle, or wild hemp, will serve as popular illustrations of the Hemp plant. It differs from the usually cultivated plants, in having the female and male flowers on separate stems.

The soil best adapted to the growth of Hemp is a rich strong mould, or light clayey loam: all the best Hemp soils contain a portion of sand, which keeps the soil open. Hemp

cannot be pulled on strong clays. During the last Continental war, Hemp was grown on bog land, in the neighbourhood of Crowland and Spalding; but was discontinued before its conclusion, owing to its producing an inferior article. Under ordinary culture, the produce of Hemp will amount to 60 or 70 stone per acre. When grown under favourable circumstances, Hemp is a plant of rapid growth, frequently in this country obtaining a height of six, and sometimes of seven feet. It is reported, however, to attain in Italy, and warm Oriental climates, a height occasionally of from 15 to 18 feet, without any diminution of the equal texture and fineness of its fibre.

When the farmer has selected the portion of land intended for Hemp, it should be ploughed in November into six-yard ridges, so that it may mellow during the succeeding frosts. Early in March the land should be cross-ploughed, if the weather is dry, and remain in that state until April, at which season it should be well harrowed, rolled, harrowed, and cleared of weeds, twitch, &c.: twitch and horsemint are fatal to Hemp. The roller and harrow must be applied as often as is requisite to get the soil into a fine tilth, in which state it may be allowed to remain for a few days for the weeds to sprout and the ungathered roots to dry up; after which the land must be ploughed the same way of the field in which it is intended to grow the crop, the sets being laid six or eight yards wide. By the time these repeated ploughings, harrowings, &c., are accomplished, the month of April will be somewhat advanced, at which period the farmer must have his manure ready; 20 tons at least of well-rotted mixed stable and feeding-shed manure should be applied to an acre. The manure should be carefully and evenly spread on the side of the field intended to be first ploughed following immediately after the spreader: the spreader of the manure must be directed to throw out half the heap next to the ploughman first, and then turn down the other half; by this means the manure is not dried up by the sun. The ploughman must be careful not to cut a furrow more than six inches deep, for Hemp requires as many seams as possible for the seeds to fall in along with the manure.

An acre of land requires from two-and-a-half to three bushels of seed: if the Hemp is required to be manufactured into linen, two pecks more should be added. The best season for sowing hemp is from the 1st to the 12th of May—a few days later *must do*, if the weather is wet: if sown later than the 12th of May, the fibre generally grows thin and weak.

Hemp should never be sown earlier than the 15th of April; the first week in May will be found the best period, for Hemp is a most unprofitable crop unless sown on a soil sufficiently rich to force it rapidly forward. It is better to wait a short period for genial