

as the Neolithic period, cultivated no less than ten cereal plants, namely, five kinds of wheat, of which at least four are commonly looked at as distinct species, three kinds of barley, a panicum, and a setaria. If it could be shown that at the earliest dawn of agriculture five kinds of wheat and three of barley had been cultivated, we should of course be compelled to look at these forms as distinct species. But, as Heer has remarked, agriculture even at the Neolithic period, had already made considerable progress; for, besides the cereals, peas, poppies, flax, and apparently apples, were cultivated. It may also be inferred, from one variety of wheat being the so-called Egyptian, and from what is known of the native country of the panicum and setaria, as well as from the nature of the weeds which then grew mingled with the crops, that the lake-inhabitants either still kept up commercial intercourse with some southern people or had originally proceeded as colonists from the South.

Loiseleur-Deslongchamps⁴⁵ has argued that, if our cereal plants have been greatly modified by cultivation, the weeds which habitually grow mingled with them would have been equally modified. But this argument shows how completely the principle of selection has been overlooked. That such weeds have not varied, or at least do not vary now in any extreme degree, is the opinion of Mr. H. C. Watson and Professor Asa Gray, as they inform me; but who will pretend to say that they do not vary as much as the individual plants of the same sub-variety of wheat? We have already seen that pure varieties of wheat, cultivated in the same field, offer many slight variations, which can be selected and separately propagated; and that occasionally more strongly pronounced variations appear, which, as Mr. Shirreff has proved, are well worthy of extensive cultivation. Not until equal attention be paid to the variability and selection of weeds, can the argument from their constancy under unintentional culture be of any value. In accordance with the principles of selection we can understand how it is that in the several cultivated varieties of wheat the organs of vegetation differ so little; for if a plant with peculiar leaves appeared, it would

⁴⁵ 'Les Céréales,' p. 94.