

whilst some are peculiar to dry and sterile soil, others are found only on rich soils with abundant moisture. Some grow in marshes, stagnant waters or slow streams; some only on the sea coast, but none are truly marine.

Of the forage grasses, the following are the most important: Timothy or herd's grass (*Phleum pratense*), a native of Europe, and on rich soils very valuable for hay. Red-top (*Agrostis vulgaris*) is also a native of Europe, grows well on moist soils, and is valuable for hay. Orchard grass (*Dactylis glomerata*) is valuable for its growing well in the shade, and so furnishing hay and pasture in orchards and woodlands. Kentucky Blue Grass (*Poa pratensis*) is a native of the Eastern United States and of Europe. In the latitude of Kentucky it is the best of all pasture grasses, but in drier regions is small and harsh. The "Fine Slough Grass" (*Muhlenbergia glomerata* and *M. Mexicana*) of the Mississippi valley prairies is also valuable as hay.

But whilst the grasses furnish food for such domestic animals as the horse, cow, sheep, goat, etc., they are of the highest importance to man himself—furnishing a large percentage of his food and the raw material for many of the articles which contribute so much to his welfare and his comfort.

First and foremost comes Wheat (*Triticum vulgare*), a native probably of Southern Asia, and under cultivation in temperate climates for several thousand years.

Remains of wheat grains have been found in the ruins of the lake dwellings of Switzerland, proving that it was cultivated in Europe in prehistoric times. By long culture it has formed many varieties; some of these are hardy (winter or "fall" wheats), others are tender (spring

wheats); some are awned, others awnless; in some the grains are dark in color (red wheats), in others they are light colored (white wheats). Fabre's experiments of forty years ago tend to prove that wheat was originally derived from a wild grass called *Ægilops ovata*. From it, in the course of ten or twelve years, he succeeded in producing the form known as cultivated wheat. Among the better classes and more advanced nations wheat is the grain principally used for the manufacture of bread, although rye, barley, maize and rice are also used extensively in certain districts.

Rye (*Secale cereale*) is probably a native of Southeastern Europe and Southwestern Asia. It has been cultivated for ages, and the sandy soil of northern European countries is admirably adapted for its growth. In many parts of Russia, rye bread is the only kind known.

Barley (*Hordeum vulgare*) is probably a native of the same region as rye, and has been under cultivation for a long time. By the process of malting its starch is converted into sugar, and fermented liquors, such as beer and ale, are obtained from it. From this again, a spirituous liquor—as whisky—is obtained by distillation. Fermented and spirituous liquors are commonly made from different kinds of grain in different parts of the world, particularly barley, maize, rice and millet.

The Oat (*Avena sativa*) was formerly much used as food for man, especially in cool climates, where it succeeds best. Its native country is not certainly known, but it was probably northern Europe or Asia. At this point it is interesting to notice that the straw of rye, wheat, barley, oats, and many other grasses is much used in the manufacture of