

understand that there is not only a benefit, but that it is a necessity to replant in denuded regions.

In vain we mention the fact that there are foreign countries where by the complete clearing of mountain slopes fearful periodical floods are caused, which put under the obligations of being banked up the towns situated on the banks of rivers taking their rise on these slopes to prevent them from being overflowed. Such is the case for many towns situated on the river Loire in France. We begin even to see the same occurrence in our own country. The river St. Lawrence is now subject to much more considerable floods than it was formerly, and we have to-day the site of the town of Montreal protected by a dike, the same as the towns of France; yet for us this is only the beginning. But all that is insufficient to convince the farmer that replanting is necessary. Nevertheless replanting is necessary. As I just said, the farmer egotistically says that he won't plant trees, the shade of which he will not enjoy. A good farmer told me once:—"You want me to plant trees; I am not green; I would be dead a long time before the trees that I would plant now would be large enough to shade my grave." Vainly I tried to convince him that he was young enough to enjoy the fruit of his toil; that trees grow quicker than is generally believed. None so deaf as those who will not hear. Happily there is another way of restoring forests besides the mode of replanting which is so repugnant to the farmer. Almost always in the regions deprived of wood it is an easy matter to bring the land to produce by itself a good growth of trees. It is what I would call the natural restoration of forests, and please allow me to quote here a short part of a chapter I wrote on this subject six years ago in my book, "The Canadian Forester's Illustrated Guide."—

"Extensive districts long cleared of their forest growth frequently cover themselves again with wood if care is taken to aid nature in her operations. Generally speaking plains and damp marshes where a few stunted trees show themselves here and there are susceptible of this treatment. Drainage by means of deep ditches of sufficient frequency to admit of the tree growing, if not of perfectly drying the land, is the only thing necessary. The moment that this has been done a multitude of little trees will spring up, which were only waiting for this amelioration to show themselves, and the new growth is usually so prolific and rapid that we would be induced to call it spontaneous, did we not know how long seed will lie dormant in the ground, till all things necessary for their growth were present. The same thing occurs on certain hill sides where protection being afforded against the teeth and hoofs of cattle, their hoary heads soon become crowned into a wreath of luxuriant verdure."

I must state that to-day this natural restoration is well understood by our farmers, and I can prove it by an example. Any tourist who travels by the Intercolonial Railway from Quebec down to Remouski in the Province of Quebec goes through a region of 180 miles which forty years ago was for the greatest part in forest. This forest has been felled, burnt, and has made place to numerous settlements, but the land forming the slopes of the mountain range, at the bottom of which runs the railway, right through the aforesaid region, having been found unfit for cultivation has been left by itself to make a second growth of wood. The new trees have been thinned, well taken care of, kept uninjured from the teeth and feet of animals, and, now from Quebec to Rimouski, you will see fine maple bushes growing on the land once wrongfully deprived of its trees by the old settlers.

Forage Grasses.

KENTUCKY BLUE GRASS (*Poa pratensis*).—The second grass, which by reason of its importance stands thus, is that which is known by so many names, according to the locality, but which will perhaps be most generally recognized by that given above.

It must, as our most widely distributed grass, be familiar to everybody, although it might not be connected with any of the numerous names which denominate it. It is a leafy grass which forms long stolons, or underground shoots, from which spring up a number of branches. The leaves springing from the root are very soft and form a considerable tuft, which characteristic lends it much of its value as a lawn grass. The inflorescence is formed on a long erect stem, which supports the flowers, seeds, etc., in form known as a *panicle*, which is the name applied to the arrangement of a flower in a kind of spike, with smaller branches running off from the side. The stem is usually one to two feet high, and the panicle usually has the general outline of a pyramid shape, which pyramid will be seen to be more widely spreading after flowering than before, when it appears comparatively compact. The color is a kind of bluish-green with, even in some cases, a tinge of purple, and on close examination a small web of silky hair will be seen connecting together the different seeds which are on the same *spikelet*. As will be apparent, this web is merely a provision of Nature for the carriage of the seed; for when any animal brushes against the panicle of the grass the seed is rubbed off, and by means of the web attaches itself to the disturber, and is so carried to some more or less distant locality.

Historically we hear of this grass as far back as 1750, or some time near that date, at which time it was said to be cultivated in England and America under the name of "bird grass," but on account of the number of contradictory statements it is hard to arrive at the truth of the matter.

The name of Kentucky Blue Grass has often led into the mistake that it is an American grass, and at first particularly confined to the special district of Kentucky; but, contrary to this, it is the most widely distributed grass in the world. On this continent it is known, among other names, by that of June grass, green-meadow grass, spear grass, meadow grass, smooth-stalked meadow grass; but its general distribution can be noted in Europe, Siberia, North Africa and North America. The most northerly part of Russia fosters it as tenderly as the more tropically-situated Australia.

Poa pratensis thrives best upon a loose, warm soil, but almost any moist ground, if not too stiff, will produce it abundantly. Very dry sand or excessively wet ground alike check its growth. Its abundant presence is regarded as a sign of good soil, and the so-called "Blue Grass Farms" generally fetch the highest prices for this very reason. The tract known as the Blue Grass country is in extent about 15,000 square miles on a foundation of limestone; the stalks here grow to a height of two or three feet and give much the appearance of a prairie; and on our own prairies this is sometimes the only grass.

The grass shows great strength in resisting drought and cold, for the roots being widespread and preserved from the action of the sun, are but slightly affected by drought; and again,

certain roots being quite deep are unaffected by the frost.

Poa has its chief value as a pasture and lawn grass, the sod being easily obtained and very enduring, it never being known to run out on good land. Much of its virtue is due to the rapidity and earliness with which it springs up after being grazed off, and also to the fact that no amount of pasturing is able to destroy it. On light soils pasturing is apt to pull out the roots, but otherwise the plants continue perennial and produce year after year. By reason of its fine and early foliage it is very suitable for a bottom-grass, and if its aftermath were heavier, it would be the best bottom-grass, but for a hay crop it is not successful, as it is hard to cut and difficult to cure, and the foliage is too short and too light after being dried. As a pasture grass, again, it is considered of very different value under different circumstances, as it seems to require favorable circumstances to bring out its best qualities. Under some circumstances it is best mixed, and so forms a very good constituent of a permanent pasture; but in some parts, as New Zealand, it is considered as great a curse as quack grass with us Canadians, by reason of its tendency to run wild over pastures and cultivated grounds alike. It has great nutritive value, and is eagerly eaten by cattle, which will fatten upon it, provided that it has not been drenched by rain. Much of its usefulness, where other grasses fail, is the fact that in drying by heat, it preserves the greater part of its nutritive qualities. The yield seems best if cut during flowering, that is, late in June and early in July, for after this the stalks become dry and hard, and the leaves, even although they remain green, are tough and leathery; and at this time a yield of about two tons per acre may be expected.

The best time for sowing depends to a considerable extent on the locality and the conditions, for a Kentucky agriculturist says it may be sown any time from August to April, and some prefer to sow it on the snow. Sowing may be completed on a grain field without any preparation, but as a general rule it is best to harrow before sowing and roll afterwards, but the seed should not be covered, as it germinates best in light; a loose or very open surface in dry weather is often fatal to young Blue Grass; it is also best not to allow stock on the grass the first year, for unless the soil be very stiff the plants are easily pulled out.

Seed is raised commercially chiefly in America, but a small quantity also is obtained in Europe from wild plants, as its growth for seed hardly pays. It may be bought in the cleaned state or with the woolly hairs not removed, but the latter, though low-priced is not economical, as this hair and chaff amounts to 20 to 40 per cent. of the whole, and so a large quantity of the purchase is utterly valueless.

Some authors state that *Poa* is unsuitable for clover mixtures, but others assert that mixing with white clover makes the very best ornamental grass; but usually for lawn purposes it may be sown alone. Considering its distribution, Kentucky Blue Grass needs no introduction, but for a bottom-grass and a permanent crop it will prove the best pasturage of any common variety, and is the best fattening grass for cattle we have in Canada. J. McC.

Pasturing wheat is recommended when there are traces of hessian fly, which in early sown fields, in a warm September, with freedom from frost, this scourge is sure to get in its work.