

tobacco are obliged to get leave to do so from the department, and to work under the supervision of officers of the Régie, known as Controllers of cultivation. One year in advance, the Régie fixes the number of *hectares* it requires, and the price the State will pay for the cured tobacco, according to its quality, and then allots the total among the several departments, partly according to the applications sent in, and partly according to the known suitability of each department to produce the quality of tobacco required. There are only 22 departments in which tobacco is allowed to be grown. In Holland and Belgium, any person may grow as much tobacco as he likes, and there the duty is charged at \$6.00 per 1,000 plants, on the calculation that 7 plants should produce a pound of tobacco fit for the market.

A good broad strip of corn, sown as soon as the land is warm enough, on the side from which blows the most frequent wind, would be an efficient protection to the ripening tobacco.

M. Schloesing, the great Belgian authority on tobacco-culture, asserts that potash is the dominant manure for this plant: the influence of this salt is not to add to the weight of the crop or to increase the percentage of *nicotine*; but to give fineness and suppleness to the leaves. There appears to be a maximum quality of potash united with organic acids in the plant towards the 75th day from its germination: hence, the best cigars are made when the leaves are gathered before maturity, and when, in consequence, they contain the greatest quantity of potash.

I fancy we must be content to furnish *pipe-tobacco*, and perhaps a few tons of *wrappers* for cigars with *Habana fillers*; so I do not advise cutting tobacco before maturity, as the loss of potential weight must be considerable, not less, probably than 200 lbs. an acre.

In France, the rows of tobacco seem to be about 20 inches apart, and the plants about 18 inches apart in the rows. The great Connecticut I should plant, alternately with winter cabbages, in drills 24 inches apart, and the same distance between the tobacco plants—12 inches will do for the cabbages in the row: thus the tobacco would have 48 inches to spread itself in and there would be lots of room for the disbudder to work. The second week in June suits the planting of both crops.

In France, only those growers of tobacco who are specially authorized are allowed to grow seed. The crop is harvested in three ways: 1. by picking off the leaves as they ripen, beginning with the lower ones; 2. by waiting until nearly all the leaves are ripe, and then picking them off by one operation; 3. as with us, by cutting of the stem near the ground with the leaves attached. In the first case, the classification of the leaves is facilitated, for supposing the plant has ten leaves, the first harvest would consist of the lowest three or four, the second of the middle leaves, and the third of the uppermost. I wish I could see how to dry these several leaves properly, that is without their clinging together and thereby becoming mildewed. I am convinced that it is the right way to work. It seems that in the Departments *Du Nord* and the *Pas de Calais*, the tobacco passes the day out of doors, and is removed to shelter at night, it must require a great deal of practical skill to know exactly to how much sunshine and sun-heat the leaves should be exposed, as well as to how much dew, so as to obtain the requisite amount of dryness without brittleness, and the best colour possible without mildew. When dried, the Hollander and the Belgian can sell his tobacco as freely as any other farm-crops, but the French peasant has to comply with the regulations of the Régie which are very strict; for instance: "This autumn, I visited a farmer in the North of France, whose whole crop of tobacco had been rendered practically worthless by a hail-storm,

which occurred in the third week of August. Nevertheless, the Régie insisted upon the crop being cured and delivered at the Magazine, although at the time of my visit it consisted of little more than the stems and the ribs of the leaves. Fortunately my friend's crop had been insured against hail-storms!" I do not know of any insurance company here that would undertake the risk, but in England and in France, all crops can be insured against hail for about sixpence an acre.

Rather harvest you. tobacco in a greenish state than run the risk of its being frozen. M. Scholesing tells us that the best tobacco is that which is harvested before it comes to maturity. Tobacco when nearly ripe will stand a fair frost without injury, but green, late-planted tobacco is destroyed by the slightest frost.

ARTHUR R. JENNER FUST.

*Experiments.*—The Rural New-Yorker, very properly, observes in a late issue that "fertile soils are not fit for trying experiments on unless, as in the case of Dr. Lawes, they be carried on for many years in the same way." But, it omits one very important fact: Sir John Lawes, as I mentioned in a previous number of the Journal, took especial pains to exhaust, agriculturally speaking, all the experimental land before he began his examination of the manurial value of fertilisers for different crops. "Hence," adds the Rural, "it is in our estimation, that most of the trials made by the Agricultural Stations with fertilisers are misleading or valueless. According to the present fertility of the land, the self same trials will have to be made for five, ten, or possibly of thirty years, before the land will answer the questions put to its." I do not think so. If the same crop is sown three or four seasons consecutively without any manure, I fancy the exhaustion of the land will be practically complete. For instance, Lawes, for the purpose of finding out what was the dominant demand of the turnip, sowed a piece of land with that root for eight consecutive seasons without manure, and the yield was as follows:

Years.	Tons.	cwt.	qas.	lbs.
1843	4	3	3	2
1844	2	4	1	0
1845	—	13	2	24

After which, as he says, "the size of the bulbs was such that they were not considered worth weighing." And so with the wheat-field: turnips, barley, pease, wheat, and oats had all been taken off it without any manure being added, and the first experimental crop of wheat on the continuously unmanured land, was about what it proved to be on the average of seasons afterwards, namely, 16 bushels an acre.

So, I think, there cannot be much doubt that continuous unmanured cropping for three or four years will reduce most soils to a fair state of exhaustion. The Rothamsted soil is of excellent quality: good clay-loam on chalk subsoil.

In a late letter to the papers, Sir John Lawes expatiates on the absurdity of spending costly artificial manures on land covered with weeds. The quantity of crop, he says, depends in great measure upon the season, but it also depends on the amount of weeds which share with the crop the artificial food applied to the soil. We all know that the farmer has no power over the season, but he can, to a great extent, diminish the quantity of weeds that infest the land. It can never pay to feed weeds with nitric acid, and sooner or later it will be found necessary either to give up the use of artificial manures, or to use them on cleaner land.