

FIGURE I
RIPPLE USED FOR REMOVING THE
SEED-BOLLS FROM THE FLAX

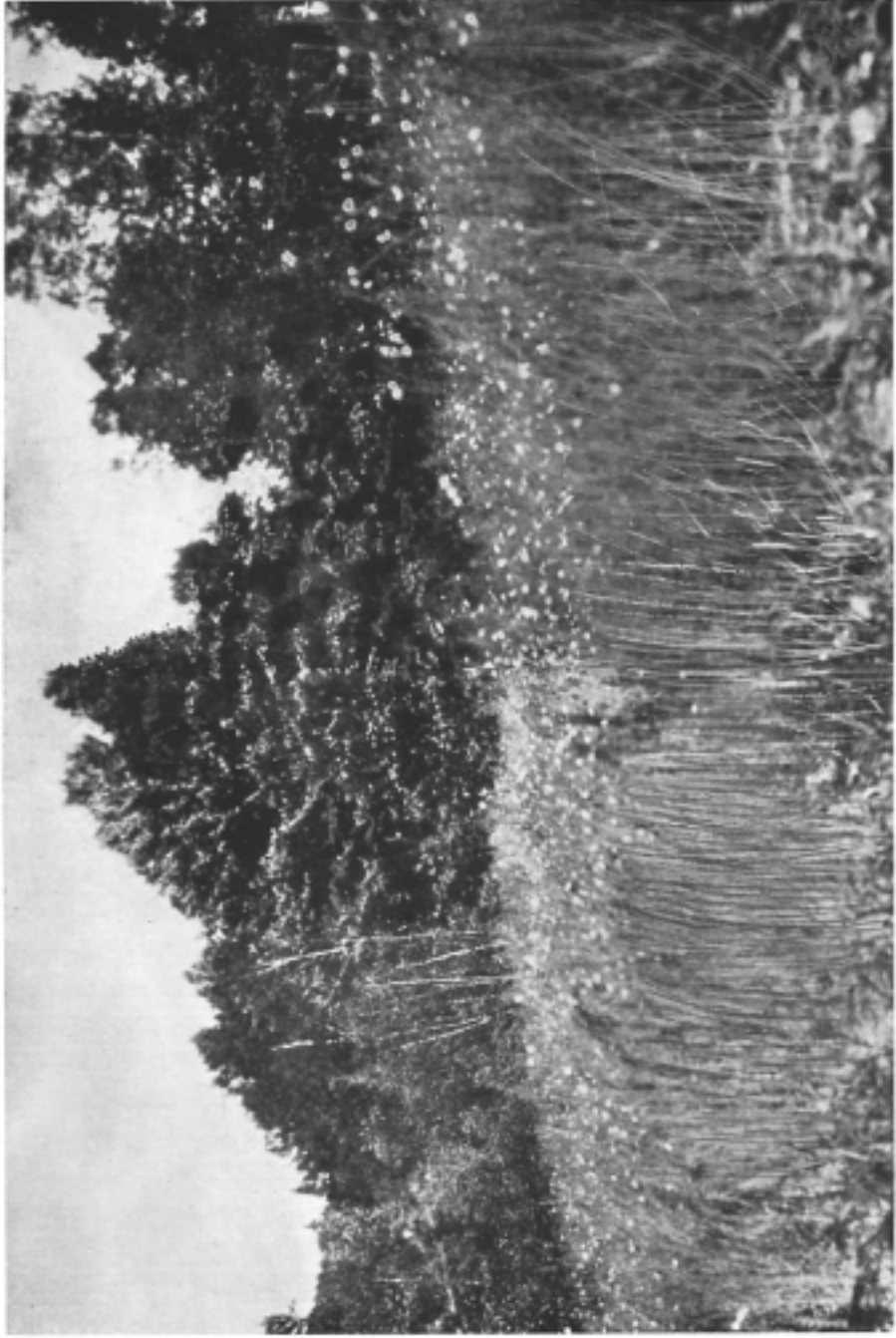
AN EXPERIMENT IN FLAX RAISING

BY MABEL H. KERRISON

WHEN, following the war and resulting crop failures in various countries, we were confronted with a shortage and consequently high cost of flax, it seemed as if hand weavers would have to resort to cotton or some substitute for the incomparable linen thread.

The question as to how this problem might be solved recurred so frequently to my mind, as to become almost an obsession. Finally it transformed itself into a desire and resolve to make a practical experiment of the whole process, from the sowing of the seed to the weaving of the finished product.

Looking into the matter, I learned that flax was grown throughout the Northern Original Colonies. One sees here and there in some old family, a beautiful tablecloth of home manufacture. Occasionally old people will relate how in their youth they helped in the flax fields and how in the long winter months, they hackled, spun and wove it. I learned further that flax of good quality is grown successfully in northern Michigan and Minnesota and that the demand is much greater than the supply.



THE FLAX FIELD IN BLOOM

My summer home is in northern New Hampshire, and my first great encouragement there came from my nearest neighbor, an old man of eighty-five years, who remembered perfectly how a little more than fifty years before, he had helped his father on those very fields, grow good crops of flax year after year. He still possessed a few much-prized woven linen pieces, which were shown as proof thereof. Some of them were in excellent condition which would rather prove that the flax must have been of a good and strong quality. Also, all through the smaller towns of New Hampshire and Vermont, one occasionally comes across flax implements put aside in old attics and barns. These country people do not collect such implements for their historical interest; they are simply heirlooms telling a story of a once active industry.

So, after collecting all the practical information possible, I proceeded to formulate plans for growing my own crop.

As to the preparation and fertilization of the soil and the planting and cultivation of the crop, one has only to apply to the Bureau of Agriculture at Washington for all the necessary information.

I advise sowing down only a small piece of ground the first season—say one eighth of an acre—in order to try it out. The resulting crop should yield more than enough fibre for all experimental purposes of spinning, weaving, etc. By allowing about one quarter of it to remain standing until the seed becomes quite ripe, one should have enough for the following year's crop. I cannot speak from actual experience, but I am inclined to believe that better results may be obtained from seed from one's own soil than from seed grown elsewhere, i. e., under different conditions of soil, climate, etc. Sow seed at the rate of one bushel to an acre.

Prepare the soil just as soon as the frost is out of the ground, having already on hand your seed and fertilizer. Harrow the ground thoroughly until well pulverized and sow the seed broadcast. This should germinate in six or seven days.

How proud one feels when on some sunny morning in late July, one looks on the first field of flax of one's own planting. Picture to yourself the slender, graceful stalks, rising three feet high, and topped by delicate flowers of the brightest blue. My first illustration, reproduced from a photograph of one of my fields, gives perhaps some idea of how really beautiful a field of growing flax may be. The second illustration is from a particularly exact and perfect drawing of the plant in full bloom.

It is rather difficult for a novice to judge just when the crop should be gathered, or "pulled." Usually there is an interval of eighty to ninety days between the sowing of the seed and the harvesting of the crop. After the blue petals have fallen and the pods have formed, and when the stalks turn yellow about two thirds of their length from the ground up, and the lower leaves begin to fall, then on a day that is clear and dry, it is time to pull. This is quite easy as the roots are very shallow. Pull two or three handfuls and tie into a bundle. In repeating this process, be careful that the stalks shall always be in the same direction, i. e., all the roots at one end. In fact, it is particularly important that throughout all the harvesting processes, the roots should be kept as evenly as possible at the end of the bundles; otherwise they will become unmanageable. Stack these bundles on high poles, twelve or fourteen to the pole just as oats are stacked. They should be left thus to dry for about a fortnight.

RIPPLING. When the stalks are thoroughly dry, spread a sheet on the ground or on a barn floor and, taking a handful of stalks at a time, put them through the ripple (see figure 1). This, as you see, is a sort of coarse comb for removing the seed-bolls, which at this stage are not mature enough to utilize for seed. This is quite necessary and facilitates the later processes, as the pods, if allowed to remain on the stalks, would become entangled.

DEW-RETTING. As the bundles are rippled, spread them in rows upon the grass with the stalks separated, each from the others. Leave them thus lying out in the air for two or three weeks. This is called dew-retting and is the most critical of all the essential processes. On this depends the strength, lustre and color of the final product.

The different methods of retting are so interesting that I shall take time to describe one or two of them. The most noted flax is that grown in the Courtrai Country of Belgium and retted in the River Lys. It is most curious that this flax of an unusual quality and of a creamy color is grown on a strip of land bordering on this river for only one and a half miles, although the river is much longer. The water of the river has been analysed with no discovery of any chemical property that might cause an unusual fermentation and color. It is apparently just a very slow-running river and its water is very soft.

The Russians and Irish retted their flax in pits, often dug out for this



FLAX PODS AND BLOSSOMS, NATURAL SIZE

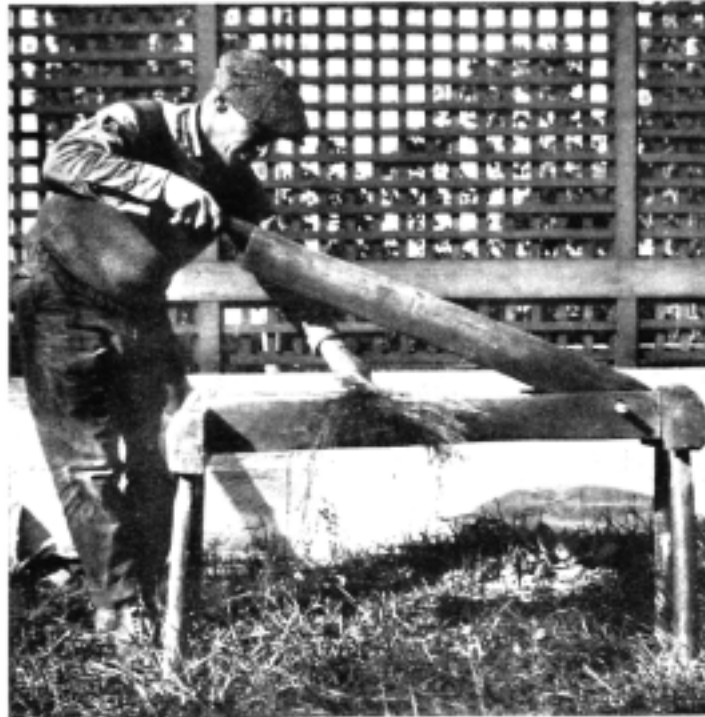


FIGURE 2
HAND-BRAKE

purpose. But the stench which results from this process would make it prohibitory for us.

In other countries, the bundles are weighted down in slow-running streams or brooks. This would seem the easiest method. But although I have just such a stream near at hand, I am prevented from utilizing it because of the fact that something in the fermentation of the flax causes all the fish in the stream to die, which in a trout-fishing country such as mine would not make for popularity. Therefore, taking everything into consideration and also the fact that soft water is known to give the best results, dew-retting seems to be the most practical method.

On the success or failure of this process everything depends. If under-retted, there will be difficulty in separating the bark from the fibre. If over-retted the resulting fibre will not be as strong and it will be without lustre and of a dull and dark color. Lustre and color decide the value of all flax. It is the heavy dews at night and the hot quick-drying sun of

August days that bring about the fermentation and the consequent rotting of the gummy substance which causes the fibre to adhere to the outer bark. If, therefore, the weather has been favorable for about two weeks after the flax is spread, one should begin to test by rubbing a few stalks together in the hands. If the woody bark crumbles and separates easily, it is then ready for the second drying. It depends very much on the weather during the time of retting. If there have been continuous rains, it might easily be over-retted and therefore spoiled. Fortunately, however, August, when the retting must always be accomplished, is not usually a rainy season.

After retting, the flax is again stacked to dry. In Sweden and Northern countries, where the dews are too heavy and there is much rain from this time on, drying is usually done indoors.

BREAKING THE FLAX. Breaking is the term applied to the separating of the outer woody stalk, or bark, from the inner fibre. The implement by which this is accomplished is very heavy and unwieldy and its manipulation is back-breaking work except for women of the strongest peasant type. Otherwise, any woman could care for the entire process of preparation of flax without a man's assistance. I like to think of it as the woman's crop.

The process of breaking is perhaps better indicated by my illustration than by any description I could write. The hand-brake consists of two parallel bars, supported on wooden legs. Between the bars, a heavily weighted wooden beater is hinged at one end of the implement. The beater is lifted and allowed to fall upon the stalks which lie crosswise (see figure 2), thus breaking the wood from the fibre.

SCUTCHING OR SWINGLING. Even after the outer wood is thoroughly broken much will still adhere to the fibre. In order to remove these woody particles and to produce a clean and smooth fibre, it must first be beaten. This process is called scutching, or swingling. Figure 3 shows a swingling-block and knife, the latter made of very hard wood. Holding a handful of the fibres in the left hand and allowing the long ends to hang over the top of the block (see figure 4), it is beaten downwards with the large wooden knife.

Beat first one end of the bundle and then, turning it, beat the other end. Rearrange the handful, or bundle, from time to time so that the fibres at the centre shall be exposed, and beat again. Repeat this process many

times until the fibre appears clean, or free from wood. During the whole process of scutching, which is a very important one, frequent rearrangement of the bundles is necessary to keep the fibres even. The fluff or extremely short ends which fall to the ground during the scutching are without value.

Be sure that both the breaking and the scutching shall be done out-of-doors or in a large barn. The light fluffy particles which rise, especially during the scutching, fill the air. One works, as it were, in a cloud of dust.

HACKLING OR HETCHELING. We now reach the final process before the spinning, i. e., the process called hackling or hetcheling. The hackle, or hetchel, is a sort of many toothed comb (see figure 5). Holding a handful of fibres firmly, it is thrown upon and drawn quickly through the teeth of the hackle. This is repeated many times in one position, and then naturally the same process is repeated on the opposite ends. Nor does the process end here, since it must be repeated with a series of hackles, each finer than the one used before. Thus, the first hackle used has only nine teeth to the square inch; each successive instrument used having a larger number, until the final one contains thirty-six to the square inch.

Finally one looks with dismay at the result of all one's labors,—a mere wisp of silky, lustreful fibre remains. But do not be discouraged, for the large amount of thread into which this seemingly meagre bundle of fibres may be spun is truly surprising.

Around one, on the floor, is an enormous amount of apparent waste. This consists of the short lengths that have fallen constantly during the whole process of hackling. It is called "tow." Do not despise it. Gather it up carefully, i. e., without crushing. It may be spun into coarse thread which later can be woven into burlaps and crash.

The whole subject of flax-growing is so fascinating that one might easily be tempted into carrying one's recital further. The work of spinning and of the looms does not, however, fall within the scope of this paper.

Should this short sketch encourage others to a like experiment, I shall be glad. Still more should I be pleased if in some indirect way it might carry to people in the farming sections the idea of Community flax-growing, spinning and weaving. The cultivation of the crop is not very arduous and the work of the looms would fill many an otherwise tedious hour in the long winter days and evenings. Incidentally it might bring the

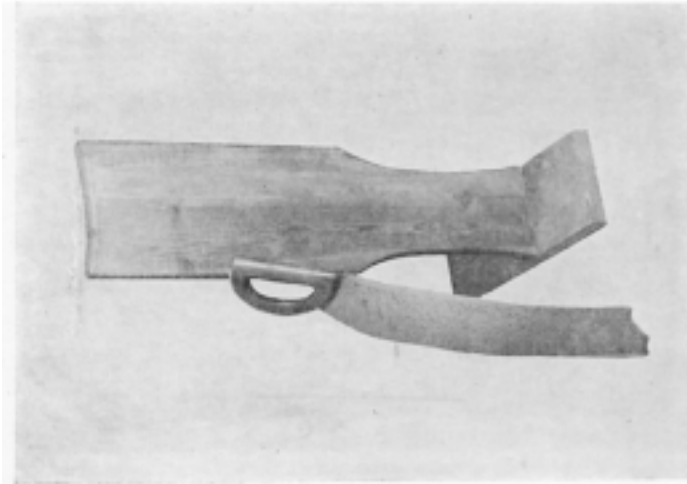


FIGURE 3
SCUTCHING OR SWINGLING-BLOCK AND KNIFE



FIGURE 4
SCUTCHING OR SWINGLING THE FLAX

people of the countryside into an association of much interest as well as profit.

As proof that neither the planting nor the spinning and weaving of flax present any insurmountable difficulties, may I say that I now possess a small towel woven on one of my looms from flax of my own growing.



FIGURE 5
HACKLE OR HETCHEL