

I'll fetch some *flax*, and whites of eggs,  
 T' apply to's bleeding face. *Shakeſp. K. Lear's*  
 Then on the rock a scanty measure place  
 Of vital *flax*, and turn'd the wheel apace,  
 And turning ſung. *Dryden's Ovid's*

(2.) FLAX, in botany. See LIRUM.  
 (3.) FLAX, CHOICE OF SEED AND SOIL FOR  
 RAISING. On theſe ſubjects, the truſtees for fiſh-  
 eries, manufactures, and improvements in Scot-  
 land, have given particular directions, which will  
 be found noticed under the articles HUSBANDRY,  
 and LINTSEED. Their directions for pulling,  
 rippling, ſtacking, &c. are here infer'd: See § 8  
 —12.

(1. 1.) \* FLAX. *n. f.* [*fléax, flex*, Saxon; *vlax*,  
 Dutch.] 1. The fibrous plant of which the fineſt  
 thread is made. 2. The fibres of flax cleaned  
 and combed for the ſpinner.—

(4.) FLAX, EXPENCE, PRODUCE, AND PROFIT OF A SCOTS ACRE OF; *ſuppoſing the ſeaſon favourable,  
 that no accidental loſſes happen; and that the farmer is neither unſkilful nor negligent.*

	<i>A medium crop.</i>	<i>A great crop.</i>	<i>An extra. crop.</i>
Ground-rent, labouring the ground, and leading the flax	L. 2 10 0	L. 3 10 0	L. 5 0 0
Lintseed from L. 2. to L. 4. <i>per hogſhead</i> , the medium 3s. 4d. <i>per peck.</i>	1 16 8 for 11 pecks.	1 10 0 for 9 pecks.	1 6 8 for 8 pecks.
Clodding and ſowing	0 2 0	0 2 0	0 2 0
Weeding	0 12 0	0 8 0	nothing.
Pulling, rippling, putting in, and covering in the water	0 14 0	0 15 0	1 0 0
Taking out of the water, graſſing, and racking	0 8 0	0 12 0	0 18 0
Breaking and ſcutching, at 2s. <i>per ſtone</i>	3 0 0 for 30 ſtones.	4 0 0 for 40 ſtones.	6 0 0 for 60 ſtones.
<b>Total expence</b>	L. 9 2 0	L. 10 17 0	L. 14 6 8
Produce at 16s. <i>per ſtone</i>	L. 15 0 0 for 30 ſtones.	L. 20 0 0 for 40 ſtones.	L. 30 0 0 for 60 ſtones.
Lintseed ſold for oil at 1s. <i>per peck</i> The chaff of the bolls is well worth the expence of drying the ſeed; as it is good food, when boiled and mixed with beer, for horſes.	0 16 0	0 18 0	1 0 0
<b>Total produce</b>	L. 15 16 0	L. 20 18 0	L. 31 0 0
Balance for profit	L. 6 14 4	L. 10 1 0	L. 16 13 4

There is nothing ſtated here as expence of the canal in which the flax is watered; becauſe that varies much according to the conveniences people have for making it; and a canal once made requires for years after only to be repaired and cleaned. It is a certain fact, that the greater the crop is, the better is the quality of the ſame kind of flax. The advantage of having both a crop of flax and a crop of turnips the ſame year—or of ſowing graſs ſeeds along with the lintseed—and of reducing the ground to a fine garden mould, free of weeds, ought to be attended to;

(5.) FLAX FOR FINE LAWN AND CAMBRIC. See HUSBANDRY.

(6.) FLAX, GRASSING, OF. See § 12.

(7.) FLAX MADE TO RESEMBLE COTTON. In the *Swediſh Tranſactions* for the year 1747, a method is given of preparing flax in ſuch a manner as to reſemble *cotton* in whiteness and ſoftneſs, as well as in coherence. For this purpoſe, a little ſea water is put into an iron pot, or an untinned copper kettle, and a mixture of equal parts of birch-aſhes and quick lime ſtrud upon it; a ſmall bundle of flax is opened and ſpread upon the ſurface, and covered with more of the mixture, and the ſtratification continued till the veſſel is ſufficiently filled. The whole is then boiled with ſea water for ten hours, freſh quantities of water be-

ing occaſionally ſupplied in proportion to the eva-  
 poration, that the matter may never become dry. The boiled flax is immediately waſhed in the ſea by a little at a time, in a baſket, with a ſmooth ſtick at firſt while hot; and when cold enough to be born by the hand, it muſt be well rubbed, waſhed with ſoap, laid to bleach, and turned and watered every day. Repetitions of the waſhing with ſoap expedite the bleaching; after which the flax is beat, and again well waſhed; when dried, it is worked and carded in the ſame manner as common cotton, and preſſed betwixt two boards for 48 hours. It is now fully prepared and fit for uſe. It loſes in this proceſs near one half its weight, which is abundantly compensated by the improvement made in its quality.

(8.) **FLAX, PULLING OF.** When the crop grows so short and branchy, as to appear more valuable for seed than flax, it ought not to be pulled before it be thoroughly ripe; but if it grows long and not branchy, the seed should be disregarded, and all the attention given to the flax. In the last case it ought to be pulled after the bloom has fallen, when the stalk begins to turn yellow, and before the leaves fall, and the bolls turn hard and sharp-pointed. When the stalk is small, and carries few bolls, the flax is fine: but the stalk of coarse flax is gross, rank, branchy, and carries many bolls. When the flax has fallen, and lies, such as lies ought to be immediately pulled, whether it has grown enough or not, as otherwise it will rot altogether. When parts of the same field grow unequally, so that some parts are ready for pulling before other parts; only what is ready should be pulled, and the rest should be suffered to stand till ready. The flax-raiser ought to be at pains to pull, and keep by itself, each different kind of lint which he finds in his field; what is both long and fine, by itself; what is both long and coarse, by itself; what is both short and fine, by itself; what is both short and coarse, by itself; and in like manner every other kind by itself that is of the same size and quality. If the different kinds be not thus kept separate, the flax must be much damaged in the watering and the other succeeding operations. What is commonly called *under growth* may be neglected as useless. Few persons that have seen pulled flax, are ignorant of the method of laying it in handfuls across each other; which gives the flax sufficient air, and keeps the handfuls separate and ready for the rippler.

(9.) **FLAX, RIPPLING OF.** After pulling, if the flax is to be regarded more than the seed, it should lie some hours upon the ground to dry a little, and so gain some firmness, to prevent the skin or harle, which is the flax, from rubbing off in the rippling; an operation which ought by no means to be neglected, as the bolls, if put into the water along with the flax, breed vermin there, and otherwise spoil the water. The bolls also prove very inconvenient in the grassing and breaking. In Lincolnshire and Ireland, they think that rippling hurts the flax; and therefore, in place of rippling, they strike the bolls against a stone. The handfuls for rippling should not be great, as that endangers the lint in the rippling comb. After rippling, the flax raiser will perceive, that he is able to assort each size and quality of the flax by itself more exactly than he could before.

(10.) **FLAX, SOWING OF.** See HUSBANDRY.

(11.) **FLAX, STACKING OF.** If the flax be more valuable than the seed, it ought by no means to be stacked up during winter; for its own natural juice assists it greatly in the watering; whereas, if kept long unwatered, it loses that juice, and the harle adheres so much to the boon, that it requires longer time to water, and even the quality of the flax becomes thereby harsher and coarser. Besides, the flax stacked up over year, is in great danger from vermin and other accidents; the water in spring is not so soft and warm as in harvest; and near a year is thereby lost of the use of the lint: but if the flax be so short and branchy as to appear most

valuable for seed, it ought, after pulling, to be stooked and dried upon the field, as is done with corn; then stacked up for winter, rippled in spring; and after sheeling, the seed should be well cleaned from all bad seeds, &c.

(12.) **FLAX, WATERING AND GRASSING OF.** A running stream waxes the lint, makes it white, and frequently carries it away. Lochs, by the great quantity and motion of the water, also waxes and whiten the flax, though not so much as running streams. Both rivers and lochs water the flax quicker than canals. But all flax ought to be watered in canals, which should be digged in clay ground if possible, as that soil retains the water best: but if a firm retentive soil cannot be got, the bottom or sides of the canal, or both the bottom and sides, may be lined with clay; or instead of lining the sides with clay, which might fall down, a ditch may be dug without the canal, and filled with clay, which will prevent both extraneous water from entering, and the water within from running off. A canal of 40 feet long, 6 broad, and 4 deep, will generally water the growth of an acre of flax. It ought to be filled with fresh soft water from a river or brook, if possible two or three weeks before the flax is put in, and exposed all that time to the heat of the sun. The greater way the river or brook has run, the softer, and therefore the better, will the water be. Springs, or short runs from hills, are too cold, unless the water is allowed to stand long in the canal. Water from coal or iron is very bad for flax. A little of the powder of galls thrown into a glass of water, will immediately discover if it comes from minerals of that kind, by turning it into a dark colour, more or less tinged in proportion to the quantity of vitriol it contains. The canal ought not to be under shade; which, besides keeping the sun from softening the water, might make part of the canal cooler than other parts, and so water the flax unequally. The flax-raiser will observe, when the water is brought to a proper heat, that small plants will be rising quickly in it, numbers of small insects and reptiles will be generating there, and bubbles of air rising on the surface. If no such signs appear, the water must not be warm enough, or is otherwise unfit for flax. Moss holes, when neither too deep nor too shallow, frequently answer well for watering flax, when the water is proper, as before described. The proper season for watering flax is from the end of July to the end of August. The advantage of watering flax as soon as possible after pulling, has been already mentioned. The flax being sorted after rippling, as before mentioned, should next be put in beets, never larger than a man can grasp with both his hands, and tied very slack with a band of a few stalks. Dried rushes answer exceedingly well for binding flax, as they do not rot in the water, and may be dried and kept for use again. The beets should be put into the canals slope-ways, or half standing upon end, the root end uppermost. Upon the crop ends, when uppermost, there frequently breeds a deal of vermin, destructive of the flax, which is effectually prevented by putting the crop end downmost. The whole flax in the canal ought to be carefully covered from the sun with divots; the

the grassy side of which should be next the flax, to keep it clean. If it is not thus covered, the sun will discolour the flax, though quite covered with water. If the divots are not weighty enough to keep the flax entirely under water, a few stones may be laid above them. But the flax should not be pressed to the bottom. When the flax is sufficiently watered, it feels soft to the gripe, and the *harle* parts easily with the *boon* or *show*, which last is then become brittle, and looks whitish. When these signs are found, the flax should be taken out of the water, beet after beet; each gently rinsed in the water, to cleanse it of the nastiness which has gathered about it in the canal; and as the lint is then very tender, and the beet slackly tied, it must be carefully and gently handled. Great care ought to be taken that no part be overdone; and as the coarsest waters soonest, if different kinds be mixed together, a part will be rotted, when the rest is not sufficiently watered. When lint taken out of the canal is not found sufficiently watered, it may be laid in a heap for 12, 18, or 24 hours, which will have an effect like more watering; but this operation is nice, and may prove dangerous in unskilful hands. After the flax is taken out of the canal, fresh lint should not be put a second time into it, until the former water be run off, and the canal cleaned, and supplied with fresh water. Short heath is the best field for grassing flax; as, when wet, it fattens to the heath, and is thereby prevented from being blown away by the wind. The heath also keeps it a little above the earth, and so exposes it the more equally to the weather. When such heath is not to be got, links or clean old lea ground is the next best. Long grass grounds should be avoided, as the grass growing through the lint frequently spots, tenders, or rots it; and grounds exposed to violent winds should also be avoided. The flax, when taken out of the water, must be spread very thin upon the ground; and being then very tender, it must be gently handled. The thinner it is spread the better, as it is then the more equally exposed to the weather. But it ought never to be spread during a heavy shower, as that would wash and waste the *harle* too much, which is then excessively tender, but soon after becomes firm enough to bear the rains, which, with the open air and sunshine, cleans, softens, and purifies the *harle* to the degree wanted, and makes it blither from the *boon*. In short, after the flax has got a little firmness by being a few hours spread in dry weather, the more rain and sunshine it gets the better. If there be little danger of high winds carrying off the flax, it will be much the better of being turned about once a-week. If it is not to be turned, it ought to be very thin spread. The spreading of flax and hemp requires a deal of ground, and enriches it greatly. The skilful flax-raiser spreads his first row of flax at the end of the field opposite to the point from whence the most violent wind commonly comes, placing the root ends foremost; he makes the root ends of every other row over-lap the crop ends of the former row three or four inches, and binds down the last row with a rope; by which means the wind does not easily get below the lint to blow it away: and as the crop ends are seldom so fully

watered as the root ends, the aforesaid over-lapping has an effect like giving the crop ends more watering. Experience only can fully teach a person the signs of flax being sufficiently grassed: then it is of a clearer colour than formerly; the *harle* is blistered up, and easily parts with the *boon*, which is then become very brittle. The whole should be sufficiently grassed before any of it is lifted; for if a part be lifted sooner than the rest, that which remains is in great danger from the winds. A dry day ought to be chosen for taking up the flax; and if there is no appearance of high wind, it should be loosed from the heath or grass, and left loose for some hours, to make it thoroughly dry. As a great quantity of flax can scarcely be all equally watered and grassed, and as the different qualities will best appear at lifting the flax off the grass; therefore at that time each different kind should be gathered together, and kept by itself; that is, all of the same colour, length, and quality. The smaller the beets lint is made up in, the better for drying, and the more convenient for stacking, houting, &c. and in making up these beets, as in every other operation upon flax, it is of great consequence that the lint be laid together as it grew, the root ends together, and the crop ends together.

(13.) FLAX, WATERING OF, BY A NEW METHOD—In the *Gentleman's Mag. for June, 1787*, a new method of watering flax is proposed, whereby the labour would be shortened, the strength of the flax probably increased; the colour rendered much finer; the operation of bleaching rendered safer and less tedious; a very disagreeable nuisance suppressed; the linen manufacture much improved, and the national income increased many thousand pounds a-year. The ingenious author, after pointing out the many inconveniences of the present method, of soaking the flax in rivulets, ponds, and stagnant pools, such as the offensive smell and inky tinge arising from it in ponds, the pernicious effects of the noxious infusion, by destroying the fish in rivulets, the hurt done to cattle by preventing them from drinking the water, however thirsty, the danger of bad consequences even to the health of men, from the disagreeable effluvia, &c. proposes to improve as well as shorten the process, “by plunging the new flax after it is rippled, into *scalding water*, which, in extracting the vegetative sap, would do, in 5 minutes, more than cold water would do in a fortnight, or perhaps at all.” This he illustrates analogically, by the familiar examples of infusing tea, and blanching rough almonds, in scalding water and not in cold water. “Boiling water, (he thinks), would also clear the new flax from many impurities, which, when not removed till it be spun into yarn, are then removed with difficulty, and loss of substance. Upon the new system, the act of bleaching would begin immediately after rippling; and a little done then might save much of what is generally done after spinning and weaving. To spin dirty flax with a view of cleaning it afterwards, appears to be the same impropriety, as if we were to reserve part of the dressing given to leather till after it is made into a glove. Should the plunging of the flax into the boiling water not suffice to make the *boon* brittle enough, then the

common watering might be added; but in that case probably half the time usually given to this watering would suffice, and the flax might then be laid in clear rivulets, without any apprehension of its infecting the water and poisoning the fish, or of being discoloured itself; for the boiling water into which it had been previously put, would have extracted all the poisonous vegetative sap, which I presume is what chiefly discolours the flax, or kills the fish. On the supposition, that the use of boiling water in the preparation of flax may be advantageous, I can recollect at present but one objection against its being generally adopted. Every flax-grower, it may be said, could not be expected to have conveniences for boiling water sufficient for the purpose; the consumption of water would be great; and some additional expence would be incurred. In answer to this, I presume any additional expence would be more than reimbursed by the better marketable price of the flax. In a large cauldron a great deal of flax might be dipt in the same water, and the consumption perhaps would not be more than a quart to each sheaf. Even a large household pot would be capable of containing one sheaf after another; and the whole objection would be obviated, were the practice to prevail with us, as in Flanders and Holland, that the flax-grower and the flax-dresser should be two distinct professions." He concludes with "recommending to those who are inclined to make experiments, not to be discouraged by the failure of one or two trials.—Perhaps the flax, instead of being just plunged into the scalding water, ought to be kept in it 5 minutes, perhaps a quarter of an hour, perhaps a whole hour. Such boiling, when in this state, might in return save several hours boiling in the article of bleaching. It is not probable that the boiling of the flax with the boon in it would prejudice the harle; for in the course of its future existence, it is made to be exposed 20 or 40 times to this boiling trial; and if not detrimental in the one case, it is to be presumed it would not be detrimental in the other. Perhaps, after the boiling, it would be proper to pile up the flax in one heap for a whole day, or half a day, to occasion some fermentation; or immediately after the boiling, it might be proper to wash it with cold water. The great object, when the flax is pulled, is to get the harle from the boon with as little loss and damage as possible; and if this is accomplished in a more complete manner than usual, considerable labour and expence will be saved in the future manufacturing of the flax. On this account much more would be gained than lost, were the 2 or 3 last inches of the roots of the stems to be clipped off, previous to the flax being either watered or boiled. When the flax is watered, care should be taken not to spread it out dry, when there is a hazard of its being exposed in its wet state to frost." This method appears extremely plausible, and certainly merits a fair trial.

(14.) FLAX, WEEDING OF. See HUSBANDRY.

(15.) FLAX, CAROLINA. See POLYPREMUM.

(16.) FLAX, EARTH. See AMIANTHUS.

(17.) FLAX PLANT, NEW ZEALAND. See PHORMIUM.

(V.) FLAX, TOAD. See ANTIRRHINUM, N<sup>o</sup> 1, 4, 6, 7, 9.

\* FLAX-COMB. *n. f.* [*flax* and *comb.*] The instrument with which the fibres of flax are cleaned from the brittle parts.

\* FLAX-DRESSER. *n. f.* [*flax* and *dress.*] He that prepares flax for the spinner.

(1.) FLAX-DRESSING, *n. f.* For many ages it was the practice to separate the boon or core from the flax, which is the bark of the plant, by the following simple *hand methods*. First, for breaking the boon, the stalks in small parcels were beat with a mallet; or, more dexterously, the *break* (Plate CLII, fig. 3. & 4.) was used thus: The flax being held in the left hand across the 3 *under teeth*, or *scavards* of the break (A, fig. 3. and a, fig. 4.) the *upper teeth* (B, fig. 3. and b, fig. 4.) were with the right hand quickly and often forced down upon the flax, which was artfully shifted and turned with the left hand. Next, for clearing the flax of the broken boon, the workman with his left hand held the flax over the *stock* (fig. 5, and 6.) while with his right hand he struck or threshed the flax with the *scutchers*, (fig. 7.) These methods of breaking and scutching the flax being slow and very laborious, a *water mill* was invented in Scotland about 50 years ago; which, with some late improvements makes great dispatch, and in skilful and careful hands gives satisfaction. It has been generally constructed to break the boon by 3 dented rollers, placed one above the other. The middle one, being forced quickly round, takes the other two along with it; and one end of the handfuls of the flax being by the workmen directed in between the upper and middle rollers, the flax is immediately drawn in by the rollers; a curved plate of tin behind the rollers directs the flax to return again between the middle and undermost rollers;—and thus the operation is repeated until the boon be sufficiently broke. Great weights of timber or stone at the ends of levers, press the upper and under rollers towards the middle one. The scutching is next carried on by the mill in the following manner: Four arms, something like the hand scutchers, project from a perpendicular axle; a box around the axle incloses these projecting scutchers; and this box is divided among the workmen, each having sufficient room to stand and handle his flax, which, through slits in the upper part and sides of the box, they hold in to the stroke of the scutchers; which moving round horizontally, strike the flax across or at right angles, and so thresh out or clear it of the boon. The breaking of the flax by *rollers* is scarcely subject to any objection, but that it is dangerous to workmen not sufficiently on their guard, who sometimes allow the rollers to take hold of their fingers, and thereby their whole arm is instantly drawn in; thus many have lost their arms. To avoid this danger, a break, upon the principle of the hand break, has been lately adapted to water machinery, and used in place of rollers. The horizontal stroke of the scutchers was long thought too severe, and wasteful of the flax; but very careful experiments have discovered that the waste complained of must be charged to the unskilfulness or negligence of the workmen, as in good

good hands the mill carries away nothing but what, if not scutched off, must be taken off in the heckling with more loss both of time and flax. But to obviate this objection of the violence of the *horizontal scutchers*, an imitation of hand scutching has lately been applied to water. The scutchers then project from an horizontal axle, and move like the arms of a check reel, striking the flax neither across nor perpendicularly down, but sloping in upon the parcel exactly as the flax is struck by the hand scutcher. This sloping stroke is got by raising the scutching stock some inches higher than the centre of the axle; and by raising or lowering the stock, over which the flax is held, or screwing it nearer to or farther from the scutchers, the workman can temper or humour the stroke almost as he pleases. A lint mill, with horizontal scutchers upon a perpendicular axle, requires a house of two stories, the rollers or break being placed in the ground story, and the scutchers in the loft above; but a mill with vertical scutchers on an horizontal axle, requires but one ground story for all the machinery. Another method of breaking and scutching flax, more expeditious than the old hand methods, and more gentle than water mills, has also been lately invented in Scotland. It is much like the break and scutcher giving the sloping stroke last described, moving by the foot. The treddle is remarkably long, and the scutchers are fixed upon the rim of a fly-wheel. The foot-break is also assisted in its motion by a fly. These foot machines are very useful where there are no water mills, but they are far inferior to the mills in point of expedition. The next operation that flax undergoes is heckling. The *heckle* (*fig. 3.*) is firmly fixed to a bench before the workman, who strikes the flax upon the teeth of the heckle, and draws it through the teeth. To persons unacquainted with that kind of work this may seem a very simple operation; but, in fact, it requires as much practice to acquire the slight of heckling well, and without wasting the flax, as any other operation in the whole manufacture of linen. They use coarser and wider teathed heckles, or finer, according to the quality of the flax; generally putting the flax through two heckles, a coarser one first, and next a fine one.

(2.) FLAX-DRESSING FOR CAMBRIC, FINE LAWN, &c. Flax for cambric and fine lawn, thread, and lace, is dressed in a manner somewhat different. It is not scutched so thoroughly as common flax; which from the scutch proceeds to the heckle, and from that to the spinner: whereas, this fine flax, after a rough scutching, is scraped and cleaned with a blunt knife upon the workman's knee covered with his leather apron; from the knife it proceeds to the spinner, who, with a brush made for the purpose, straightens and dresses each parcel just before she begins to spin it.

\* FLAXEN. *adj.* [from *flax*.] 1. Made of flax.—

The matron, at her nightly task,  
With pensive labour draws the *flaxen* thread.

*Tbomson's Winter.*

—The best materials for making ligatures are the *flaxen* thread that shoemakers use. *Sharp's Sur-*

*gery.* 2. Fair, long, and flowing, as if made of flax.—I bought a fine *flaxen* long wig. *Addison.*