

FLAX.

FLAX (*Linum*), a genus of plants comprising the greater part of the natural order *Linaceæ*; an exogenous order allied to *Geraniaceæ* and *Oxalidææ*, and consisting of annual and perennial herbaceous plants, with a few small shrubs. There are about ninety known species of this order scattered over the globe, but most abundant in Europe and the north of Africa. Their leaves are simple, entire, without stipules, and generally alternate. The **COMMON FLAX** or **LINT** (*L. usitatissimum*) is an



Common Flax (*Linum usitatissimum*).

annual; a native of Egypt, of some parts of Asia, and of the south of Europe, not truly indigenous in Britain, although now naturalised, and often occurring in cornfields, which is the case also in many parts of the world. The most common variety of the flax plant has a very slender erect stem, two or three feet high, branching only near the top, so as to form a loose corymb of flowers. The leaves are small, distant, and lanceolate; the flowers of a beautiful blue, rarely white, rather broader than a sixpence; the petals slightly notched along the margin; the sepals ovate, 3-nerved, ciliated, destitute of glands; the capsules scarcely longer than the calyx, not bursting open elastically, but firmly retaining their seeds, which are dark brown, glossy, oval-oblong, flattened, with acute edges, pointed at one end, and about a line in length. Another variety, however, is cultivated to some extent in many parts of Europe, so different, that some botanists account it a distinct species (*L. humile* or *L. crepitans*), which is less tall, is more inclined to branch, and is particularly distinguished by its capsules, twice as long as the calyx, and bursting open

elastically when ripe. The seeds are also larger and paler. This variety is called *Springlein* and *Klanglein* by the Germans, the one name referring to the elastic bursting of the capsules, the other to the sound which accompanies it. The former variety is known to them as *Winterlein*, being often sown in the end of autumn in elevated districts where the summer is too short for spring-sown flax, and also as *Schlieslein* and *Dreschlein*, from its close capsules and the thrashing needed to separate the seed. The *Springlein* produces a finer, whiter, and softer fibre than the other, but shorter, and it is therefore not so extensively cultivated. There are many sub-varieties, to which and their different qualities no such attention has been paid, in Britain at least, as to those of other important cultivated plants.

This plant is highly valuable both for the fibres of its inner bark and for its seeds. The fibres of the inner bark, when separated both from the bark and from the inner woody portion of the stem, are **FLAX** or **LINT**, the well-known material of which **LINEN** thread and cloth are made, and used equally for the finest and for the coarsest fabrics, for the most delicate cambric or exquisite lace, and for the strongest sail-cloth. The seeds yield by expression the *drying* fixed oil called **LINSEED OIL**, so much used for mixing paints, making varnishes, &c.; whilst the remaining crushed mass is the **Linseed Cake**, or **OIL-CAKE**, greatly esteemed for feeding cattle, and when ground to a fine powder, becomes the **LINSEED MEAL** so useful for poultices. Linseed is sometimes used in medicine, as an emollient and demulcent in irritations of the pulmonary and of the urinary organs, and of the mucous membranes generally, deriving its value for this purpose from a mucilage which it contains, and which is extracted by hot water, making *linseed tea*. The fibre of flax is the ultimate material from which paper is made, and linseed oil is used in the manufacture of printers' ink. No plant not yielding food is more useful to man than the flax plant.

It has been cultivated from the earliest historic times. It is mentioned in the book of *Exodus* as one of the productions of Egypt in the time of the Pharaohs; and it has been recently ascertained by microscopic examination, that the cloth in which the mummies of Egypt are enveloped is linen. Solomon purchased linen yarn in Egypt. Herodotus speaks of the great flax trade of Egypt. Great quantities of flax are grown in that country at the present day; its cultivation is also very extensively carried on in some parts of Europe and of North America. The proportion of flax to other crops in Britain is probably smaller at present than it was at a former period, but an increase of its cultivation has been strongly recommended by persons whose opinion is entitled to great regard, and particularly in Ireland, where, however, it is more extensively cultivated than either in England or Scotland. It has the advantage of giving employment not only to an agricultural but to a manufacturing population. Flax is more extensively and more successfully cultivated in Belgium than in any other European country, particularly in Southern Brabant, Hainault, and West and East Flanders, in which the most beautiful flax in Europe is produced, employed for the manufacture of the famous Brussels lace, and sold for this purpose at about £100 to £180 per ton, the crop when prepared for the market sometimes exceeding in value the land on which it was produced. The village of Rebeque is distinguished for the production of this precious flax. The greatest care is bestowed on its cultivation, and to this its excellence is probably in a great measure to be ascribed. Not a weed is to be

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seen, and the care and labour are equal to those of gardening. Flax is extensively grown in the countries on the southern shores of the Baltic, and both the fibre and seed are largely imported from them into Britain. Besides the flax raised at home, the United Kingdom imported, in 1875, 88,253 tons, dressed and undressed.

Flax has been cultivated from time immemorial, as a winter crop, in India, but only for its seed, and not at all for its fibre. This remarkable circumstance is supposed by Dr Royle to be owing to the existence of the cotton plant in that country, the fibre of which more readily offers itself to view on the bursting of the pod. But Dr Royle also states his opinion, that the climate of the greater part of India is unsuitable for the production of the fibre of flax; and the variety cultivated in India is only about a foot or eighteen inches in height, much branched, and yielding a very worthless fibre, whilst it is loaded with capsules, and the seeds yield a larger proportion of oil than those of flax grown in Europe. It is sometimes sown as an edging around fields.

Much depends on the thickness of sowing. Flax must be sown thick to yield a fine fibre; but when intended to produce a fibre for coarser purposes, the plants ought to have more room. For the finest fibre, also, they must be pulled before the seed is ripe; but a coarser fibre and a crop of linseed are often much to be preferred by the farmer. The crop is always *pulled* up by the roots.

The diminished cultivation of flax in Britain, after agriculture began to improve, is to be ascribed in part to the prevalence of the opinion, that it is a very exhausting crop for the land. This has been said to be particularly the case when the seed is ripened. But the introduction of new manures has rendered this objection less important than it formerly was; and it has been found that the refuse of flax itself is not a bad manure, and that the water in which it has been steeped is a good liquid manure. The water of flax-steeping pits or ponds is often strong enough to kill the fish of rivers into which it is allowed to flow.

The capsules (*bolles*) of flax are torn off, after it is pulled, by a sort of combing called *rippling* (see FLAX-DRESSING). Great care is requisite to dry them, and to keep them perfectly dry. For the subsequent processes, see LINSEED.

Besides the common flax, several other species are occasionally cultivated for their fibre, but are comparatively of very little value.

The *Linaceæ* are, in general, plants of elegant appearance and with flowers of much beauty; some of them have flowers larger than common flax, and some are not unfrequent ornaments of our green-houses. *Radiola millegrana*, All-seed, is one of the smallest of British phanerogamous plants.

PURGING FLAX (*Linum catharticum*) is a graceful little annual with branching stem, opposite leaves, and small white flowers, common in fields and meadows throughout Britain and most parts of Europe. It possesses purgative and diuretic properties, owing to the presence of a substance which has been called *linin*. As a domestic medicine, a handful of the fresh herb is often administered, infused in whey; and it has a popular reputation in rheumatism.