THE FULLER'S TEASEL

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Two subspecies of *Dipsacus fullonum* L. are generally recognised (Clapham, Tutin & Warburg, 1962):

1. subsp. *fullonum*, the Wild Teasel, Cardère Sauvage (French), Wilde Karde (German), with the involucral bracts curving upwards and the receptacular bracts exceeding the flowers and ending in a long straight spine. The receptacular bracts are too flexible for the heads to be used for combing cloth. It is found as a native plant in Britain growing on clay soils in the south and east where it is to be seen frequently in copses and in rough pastures by roadsides.

2. subsp. *sativus* (L.) Thell., the Fuller's or Cultivated Teasel, Cardère Cultivée (French), Weber Karde (German), with the involucral bracts spreading more or less horizontally and the receptacular bracts almost equalling the flowers and ending in a stiff recurved spine. The heads are used for raising the nap on some kinds of cloth. It is an introduced plant in Britain and is usually found in a wild state only on rubbish dumps.

It may not occur immediately to those who have not examined this subject that Rural Studies provides an intellectual exercise and the opportunity to develop practical skills, and can be the focus in an area of work integrating other subjects of the curriculum. To illustrate this we selected the Fuller's Teasel as a starting point and brought in the full resources of all our departments to develop the subject. Discovering the Fuller's Teasel has proved fascinating. Little has been written on the subject and therefore all our work has had to be carried out 'in the field.'

Teasels play a little known part in the manufacturing of many textile fabrics. The stiff needle-like bracts which form just below the flowers in the head or burr are used to raise the 'nap' or 'pile' of the cloth to produce desired finishes on specific fabrics. The cultivated form of this plant is commonly called Fuller's Teasel, because the gigging or napping operation in a mill is done under the supervision of the fuller, who supervises the fulling, or felting of the fabric. Teasel occurs in Anglo-Saxon, before the English Language as we use it had evolved, and is directly related to the word 'tease'—not in the later sense of annoying but referring to the act of disentangling fibres. *Dipsacus* comes from the Greek and means a little cup for holding water. This little cup is to be found at the base of the leaves, and girls used to believe that the drops of water collecting there had cosmetic properties. They would dab the water on warts, wrinkles and freckles in the hopes of removing these blemishes and making the 'face fair.' Venus' Basin, the girls of long ago termed the connate base

of the teasel leaves where the water collected. The drops of water were also considered, by some, as a remedy for bad eyesight (Johnson, 1862). One would assume that this water also played a part in the life of the plant perhaps by being absorbed in case of necessity. From observations on our own cultivated plants we noticed that the leaf-cup forms a death trap for numbers of insects. Flies of various kinds were drowned in these cups and one would conclude that the teasel is partly insectivorous and derives a certain amount of nourishment from their decomposing bodies. Other authorities have made such deductions but we were unable to find any experimental evidence to support our supposition. Gerard (1597) refers, in his *Herbal*, to an old superstition that the little worms or maggots found in the heads of the wild teasel, if worn round the neck of a sick person will act as a charm and restore him to health.

The use of the teasel is centuries old and references to its use can be found in Roman history where it was used equally with hedgehog skins for the raising of the nap on cloth. In English history we found records of cultivation going back as far as Richard I (1189) and references to it being a 'popular crop' in the time of Edward III (1327). There is even a record of tithes being paid on teasel plants grown at Winscombe, in the County of Somerset, in the early part of the eighteenth century.

The cultivated teasel was at one time grown in large quantities in England, mainly in Somerset, Essex and the East Riding of Yorkshire. Nowadays, because of the uncertainty of the English climate and rising labour costs, the teasel buyers now obtain their supplies from France, Spain or Italy. Teasels are also cultivated as a crop in the State of Oregon and until recent years were also raised near the town of Skaneateles, New York (Nelson, 1960).

In step with progress a 'metal teasel' has been manufactured but the quality of nap raising produced is inferior to the quality of raising given by the natural teasel. Economically, however, the metal teasel is far in front of the natural one. In view of this development many mills have installed machines using the 'metal teasel' for carrying out the initial raising of the 'nap' but still finish their 'pieces' of cloth on a machine using the natural teasel. It is gratifying to know that the natural teasel is still ahead of any invention for the raising of the 'nap' on cloth.

Much of our field study work was carried out in Somerset which is now practically the last home of the teasel-growing industry, the area of production being almost entirely that of Curry Rivel, Fivehead and Curry Mallet. The 'Somerset Teasel' is thought by some to owe its survival to the Huguenots, the French Protestants of the sixteenth and seventeenth centuries, who as refugees settled in the West of England and were probably responsible for the resurgence in the West of England cloth industry.

THE ENGLISH INDUSTRY

Teasel seed is sown during April or early May on a very fine seed bed. Seed should be sown at a depth of about one and one-half inches in rows set at ten inches apart. After sowing the ground benefits from the treatment of a roller. When the plants appear they are kept weed-free by hoeing. During the summer months spraying is carried out at fourteen day intervals to prevent 'teasel fly attack' caused by *Phytomyza ramosa* Hd. (Agromyzidae) to counteract which Malathion and D.D.T. have both proved successful.

By November the young plants will have produced a tap root; this is cut through some three inches below ground level, the plant lifted and transplanted in freshly ploughed land, in rows two feet six inches apart and about fourteen inches between each plant. Teasels are biennials and in their second year of growth will throw up a main stem with numerous side branches. These are crowned with prickly cylindrical flower heads, blue in colour. There will be between ten to forty flower heads to each teasel plant. To a stranger a field of teasels in flower has often been taken for a field of thistles. The teasels should have lost all their flowers before the heads are reaped. This is helped by thousands of bees of all types. Some apiarists consider teasels as a very good crop for honey production, and delicious honey it is too. Cutting, as with all teasel work, is done by hand using a crescent shaped knife held in the palm of the hand and tied to the leather, protective glove. As they are cut the teasels are made up in bunches of forty or fifty heads then bound round with a long teasel stem. An experienced cutter can cut up to ten thousand teasels per day. For this he would earn about four pounds as this part is done on a piecework basis only. At the end of the cutting day the bundles are placed on eight to ten feet poles in a criss-cross fashion. A nail or peg is driven through the ground end to keep the teasels off the damp ground and also prevent them from sliding off the poles. The next job is drying. This must be done very carefully or moulding will result. One of the best ways is to use an open shed with a sound roof but with no sides. This type of structure will allow the air to flow freely round the poles when they are stacked in it. Teasel cutting, which usually commences in the first week in August, lasts about three weeks or more. This is due to the fact that the smaller teasel flowers flower later than the main larger ones which means that the field has to be cut over three or more times to reap the full crop. An average crop would yield about two hundred thousand heads per acre, or, as is known by teasel growers ten 'Packs' per acre. During October the teasel buyers arrive from the north of England, but they are very limited today and the industry barely remains. After a short time spent bartering over a price a deal is made. The teasels are then taken off the poles and packed in very large sacks, supplied by the buyers, and sent to the north of England, where they are trimmed, graded and sold again to the cloth mills.

The main stalk produces the largest and strongest teasel, known as the King; the terminal of the main branches produces the Queen teasels of medium size and the secondary branches produce the button teasels. The quality of the teasel is measured in its elasticity or 'give', retention of spines, weight or size, wearing qualities and brittleness. It is believed that these characteristics are greatly influenced by soil and climatic conditions and the kind of seed planted. Dry harvest seasons are generally preferred wherever teasels are grown, as such weather insures not only the proper maturing of the burrs on the plant but curing after harvest. Long periods of incessant rains or damp weather cause water to collect in the bracts of the burr, which weakens or rots it. With variable weather, the quality of the teasels is not uniform from year to year.

In use, the teasels are arranged on a cylinder in such a way that the cloth passes slowly over them while the cylinder revolves. Thus the recurved hooks catch the fibres of the cloth causing them to stand up from the surface of the cloth to form a pile or 'nap' which, if desired, may be sheared to cut the fibres down to a uniform length. Great care has to be taken when mounting the

teasels in the frames to be fastened on the cylinder of the teasel 'gig' machine. It is the work of a craftsman to mount the teasel so that they will work uniformly, and not produce an uneven raising by bearing heavier on the fabric at one point than at another. The teasel 'hook' is strong enough for the work and yet elastic enough to 'give' before the fibres break. Broad Cloths, Face Cloths, some Worsteds, Mohair Fabrics and blankets are examples of fabrics which are raised.

THE INDUSTRY ABROAD

From here our studies made an assessment of Fuller's Teasel in Italy, France, Spain and in the United States. Here much of the work was done by our Language Department. It was an extremely interesting exercise to compare methods of cultivation and use together with the economics of its cultivation. The Departments of Agriculture in the above countries were most helpful and interested in our work. A noteworthy feature in France is 'The Society For The Protection Of The Teasel' founded in 1962 (Bastide, 1964). An interesting historical fact is that the 'Popes' of Avignon awarded prizes to the grower cultivating superior teasels which were then used in the manufacture of the cloth for their vestments.

We introduced weaving, as a craft subject, in the school through our investigations into the use of the teasel and are still producing handwoven stoles, skirt lengths, tie and waistcoat lengths, the 'nap' of which we raise by hand, using a 'teasel cross'. The shape of the teasel head inspired many designs for hand made pottery and embroidery work. Investigations into the use of the seed in bird-seed mixtures occupied our young ornithologists, with various experiments and seed analysis, for many months. Our chemists were also kept fully occupied looking into the medicinal properties of the root.

Most people are familiar with the use of teasels either in their natural state or dyed in flower decorations but an interesting idea came out of our research into German customs. During the winter months in Germany, when flowers are in very short supply and extremely expensive, teasels are used woven in with small branches of fir and laurel in the making of mortuary wreaths.

Some three hundred children were involved in our work which took eleven months to complete. Many week ends and holidays were spent in the 'teasel field'. If only through this work in the school we have introduced a greater number of children, than take Rural Studies as a subject of study, to the 'wonders of nature' we have widened their appreciation of the practical world in which we live.

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