

The Clinical Cancer Research Committee of the Campaign presents a report in which material collected in 1938 and 1939, particularly with regard to uterine cancer, is considered in detail.

The body of work which is reported indicates that the impetus of cancer research in Great Britain even in war-time is considerable, and that with a return to peace-time conditions extremely rapid progress should be made.

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ECONOMIC VALUE OF THE COMMON STINGING NETTLE

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IT is a well-known fact that the common nettle (*Urtica dioica*) yields a very strong bast fibre which was used in Great Britain until about 1860 for the manufacture of cloth. Since then its use has been discontinued because other cheaper, imported materials became available. In the past, nettles have been cultivated also in France and other parts of Europe for the production of fibre.

During the War of 1914-18, the Germans were quick to recognize the value of the nettle as a source of fibre. According to published information, 10,000 tons of wild nettles were estimated to be available in Germany. The collection of these was undertaken largely by children; transport being arranged in collaboration with the military authorities. The whole organization was controlled by the "Nessel-faserverwertungs-Gesellschaft" and the "Nesselbau-Gesellschaft" which operated from Berlin, while the "Bayerische Nesselfaser-Gesellschaft" had offices at Munich. The estimated yield was between 1,500 and 2,000 tons of fibre, valued at between two and three million marks. This was to be used chiefly in the manufacture of textiles. At the same time, 3,000 tons of food from the leaves and 3,000 tons of by-product material suitable for use in paper and chemical factories were to be extracted. Other extracts included lignin, chlorophyll and potassium nitrate, while nettle products were even used in the manufacture of gas mantles¹.

At the outbreak of the present War, the German Government immediately appealed to the general public to collect nettles once again². Apparently the nettles are still being used with success, for it was reported from Stockholm in the *Daily Express* on June 8, 1942, that about 5,000 railway carriage loads of stinging nettles will be collected in Hungary this summer for use as raw material for textiles.

Although most of these facts have been known in Great Britain for many years, it is only recently that it has been possible to arouse any interest in nettle fibre in commercial circles. The availability of more familiar fibres, and other causes, have closed our eyes to the possibility of making use of a very common and troublesome weed. About two years ago, however, samples of nettle bast fibre were extracted at the Royal Botanic Gardens, Kew, and sent to another institution for certain experiments which were then in progress. Tests, which were then made, fully confirmed that the bast fibre is remarkably strong and that it consists of a very pure form of cellulose. Other tests on fibre extracted at Kew were also made at the Imperial Institute, where it was demonstrated

that good-quality paper can be made from the bast fibre. Larger samples of nettle fibre were prepared in 1941, which were examined by paper-making firms in Scotland, and pronounced to be very satisfactory. From the *World's Paper Trade Review* of May 15, 1942, it is learned that a Renfrewshire firm of paper-makers is prepared to purchase 1,000 tons of nettles this summer at a minimum price of £10 per ton, and that another firm in Fife is willing to buy 200 tons for experimental purposes. In the same journal it is also stated that steps have been taken to cultivate several acres of nettles for the same purpose, care being taken to do this only on land which is unsuitable for other crops.

It must be emphasized that the samples extracted at Kew consisted only of the bast fibre; the wood fibre, which possesses quite different properties, was a waste product. Unfortunately, it is difficult to reduce the wood fibre to pulp, so that this material cannot be used unless new and less expensive methods of treating it can be devised. The bast fibre represents only about 8-10 per cent of the dry weight of the nettle stem, so it can be seen at once that a considerable amount of material is likely to be wasted unless methods of preparation can be improved, or an alternative use found for the by-products. It is also important to emphasize that the quantity of available nettles is never likely to be sufficient to satisfy more than a small fraction of the paper requirements of Great Britain. The most promising line, therefore, would appear to be to make good-quality paper for special purposes. Whether it would be economically possible in Great Britain to use nettle fibre for textiles as in Germany needs further investigation.

It is not generally known that differences in the standard of living in Great Britain and Central Europe respectively made it economically possible to import dried stinging nettles from the Continent before the War. This material was used for the extraction of chlorophyll, which is employed to give a green colour to soap and other toilet preparations and, to a limited extent, in medicine. Nettles are more favourable than other plants as raw material for this purpose owing to the ease with which the chlorophyll may be extracted, as well as to the desirable shade of green which it exhibits. A great deal of the chlorophyll used in Great Britain before the War was imported ready-made from the Continent. It will be interesting to see whether, after the War, economic conditions will be such as to enable or make it desirable for us to import this material again.

There is, meanwhile, an admirable opportunity to extract chlorophyll for export to those countries which, like ourselves, were previously supplied from the European Continent. The desirability of effective collaboration between those who cultivate nettles for fibre and those who wish to use the leaf for the extraction of chlorophyll is clear for all to see. We might also emulate the German skill in using *Ersatz* material by devoting any excess of leaves to the feeding of cattle, even if the well-known value of young nettles as human food fails to command much popular respect. It is interesting to note in this connexion that the protein content of the nettle is high.

¹ Ulbrich, E., "Fasern" in "Ersatzstoffe aus dem Pflanzenreich", edited by L. Diels, Stuttgart, 1918, 318-37. Pp. 355-63 deal with the fibre of *Urtica dioica*.

² Anon., *Jute Abstracts*, 3, 9, 235.