PHENOTHIAZINE FOR CATTLE LICE CONTROL

SUCCESSIVE trials using phenothiazine as a dust has proven this compound to be very effective against the short-nosed cattle louse, *Haematopinus eurysternus* (Nitzsch), and the long-nosed cattle louse *Linognathus vituli* (Linné). The insecticide, diluted with equal parts of white flour, was applied to twelve infested animals located in various parts of North Dakota. A 100 per cent. mortality of these sucking lice was obtained in every trial. It failed to kill, however, the chewing cattle louse, *Bovicola bovis* (Linné). Twelve hours after applying this mixture to two heavily infested bulls the chewing lice had discontinued feeding and were scattered throughout the hair; however, when the animals were examined the following day the lice had moved to the skin and were actively feeding. A mixture of sodium fluosilicate two parts, phenothiazine one part, and white flour one part, gave excellent control of both sucking and chewing types of lice. It is entirely possible that effective control may be achieved by increasing the diluent and decreasing the amount of phenothiazine or sodium fluosilicate. This phase of experimentation is now under way at the North Dakota Agricultural Experiment Station. In view of the limited supplies of rotenone and pyrethrin, both effective louse powders, this phenothiazine dusting mixture may replace these imported insecticides.

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EARLY AND LATE EASTER DATES

MARCH 24 is the most unusual Gregorian Easter date. Three years ago, in 1940, it occurred for the second time since the Gregorian calendar reform (1582). An interval of 451 years separates 1940 from 2391, the next year having March 24 as the Gregorian Easter date.

March 22 is the earliest possible Easter date. Although it occurred four times since the calendar reform, a record interval of 467 years will elapse between 1818 and 2285, the years of the latest and of the next return of March 22 as the Gregorian Easter date.

April 25 is the latest possible Easter date. Between the time of the Gregorian reform and the end of the nineteenth century, all the possible Easter dates—except March 24 and April 25—had occurred at least four times. In 1943, Easter Sunday will fall, for the fourth time, on April 25 in the Gregorian calendar. If one of the current calendar reform projects—all of which object to late Easter dates—should be adopted within the lifetime of the next two or three generations, April 25, 1943, may mark the last occurrence of this latest possible Easter date.

GREGORIAN EASTER DATES[1]

March 22	March 23	March 24	April 24	April 25
1598				
1693	1636		1639	1666
	1704		1707	1734
1761	1788	1799	1791	
1818	1845		1859	
	1856			1886
	1913	1940		1943
	2008		2011	2038
			2095	
	2160		2163	2190
2285	2228		2231	2258
2353	2380	2391	2383	2326

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SPECIAL CORRESPONDENCE

THE WORK OF SOVIET BOTANISTS[1]

THE war, demanding a tremendous concentration of the forces of the whole people of the U.S.S.R., has also put forward a number of problems to be solved by the botanists. First and foremost, the huge expenditure of bandaging materials made it necessary for us to search for other than the raw materials ordinarily used for this purpose. In Russia and in a number of other countries during the World War of 1914–1918, sphagnum (peat bog moss) was used for this purpose.

At the very beginning of this war, work on the study and preparation of sphagnum was begun by the Institute of Botany of the Academy of Sciences of the U.S.S.R. situated in Leningrad. Large quantities of sphagnum were easily available in numerous peat bogs in the Leningrad district. Sphagnum, thanks to the peculiar structure of its cells, has excellent absorbent qualities. The moss is carefully cleaned of all extraneous matter, dried, steam sterilized and made into gauze-covered pads of various sizes.

Experience has shown that wounds heal much more

[1] Radioed to the American Association of Scientific Workers by Sergei Pilipchuk, secretary of the Soviet Scientists Antifascist Committee and forwarded to SCIENCE by Dr. Harry Grundfest, of the Rockefeller Institute.

[1] In the table published in SCIENCE, 91: 292, 1940, two dates have been inadvertently omitted.

quickly with sphagnum bandages than with cotton-batting bandages. This is explained by the fact that, in addition to its draining qualities, the moss also contains certain disinfecting substances.

Under the guidance of botanists, large quantities of sphagnum bandages were prepared for the Leningrad front, and a short pamphlet on the gathering and preparation of moss was printed. Sphagnum is now prepared on a large scale in the northern regions of the Soviet Union.

Another item of interest to botanists was the preparation of fir balsam from the sap of fir trees. This balsam, mixed with other substances, has been used in many Leningrad hospitals for treatment of fresh wounds. The demand for this balsam is increasing rapidly as doctors are becoming acquainted with its use and its qualities. The number of fir trees in Siberia and the northern regions of European Russia is enormous and fir balsam can be prepared in unlimited quantities.

The search for vitamin-bearing plants has also given botanists a large amount of wartime work. Everybody knows the value of vitamins to the human organism, but in wartime these substances are more than ever essential. One of the most important of these substances is vitamin C. Even before the war it was known that one of the richest sources of vitamin C is the wild rose hip. Since the war, vitamin contents of hips in the eastern and northern districts of the U.S.S.R. have been studied to discover where the vitamin content is greatest. In some places wild roses have been planted in order to produce hips rich in vitamin. The collection and delivery of hips has been organized on a large scale. Hips of certain roses of Central Asia have been found particularly rich in vitamins and these sorts are being specially cultivated.

It has recently been discovered that green unripe walnuts growing in dense forests in Central Asia also contain vitamin C. Collection of these nuts and manufacture of vitamin-bearing preparations had been organized.

Quite recently it was discovered that needles of ordinary pine trees contain large quantities of vitamin C. Biochemists in Moscow and Leningrad have organized mass production of vitamin C concentrate from pine needles. Despite the fact that the percentage of vitamin contained in needles is very small, this source of vitamin C is of particular value to us on account of the huge pine forests throughout the whole territory of the Soviet Union with the exception of the Arctic and desert regions.

During the long siege of Leningrad lack of vitamin C made itself particularly felt, and the decoction made from pine needles played an important role in the prevention of scurvy. In its impure state the liquid has a bitter flavor, but a number of proposals have already been made for freeing the liquid of its bitterness. Since the war began, a number of grasses have also been discovered to contain vitamin C.

Botanists have taken an active part in gathering wild medicinal plants; in cultivation of plants for the manufacture of insecticides; and in the discovery of new plants which might be used medicinally.

Attention has also been paid to a number of wild plants which can be used as salads, for example, the dandelion, primrose, etc. Attention has also been devoted to the roots of other plants rich in starch and inulin, and to fruits of a number of wild trees and shrubs such as bird cherry, hawthorn and rowan. A flour is produced from dried rowan berries which may be added to ordinary flour in proportion up to 25 per cent. and used for baking pastry, etc. Flour made from bird cherries gave excellent results in cakes. These are all results of work done by botanists to help the inhabitants of Leningrad during the siege of last winter.

Much has also been done to find substitutes for tea and coffee among wild-growing flowers. One item of particular interest is the publication of an illustrated pamphlet for guerillas and raiding troops operating behind enemy lines, giving details of all wild-growing edible plants.

These are some of the ways in which botanists are employing their science in the service of the great cause of the war against Hitlerism.

B. SHISHKIN

DIRECTOR OF THE INSTITUTE OF BOTANY OF THE ACADEMY OF SCIENCE OF THE U.S.S.R.

SCIENTIFIC BOOKS

ORGANIC CHEMISTRY[1]

Organic Chemistry. By W. T. CALDWELL. 760 pp. Houghton, Mifflin Company. $4.25.

THIS is an excellent text. It is carefully written and each subject is dovetailed into the following one with clear argument, proper insistence, repetition and reference, and with a cunning use of items of historical interest, a use which argues authorship by a person who delights in exposition as an art. The printing is well done, the formulae are clear, the pages please the eye and the reading pleases the mind. It is remarkable not only for the arrangement and style but also for its comprehensiveness and accuracy. It is thoroughly up-to-date and yet never fails to place the newer items of theoretical or practical interest in

[1] Corrected proof was received shortly before the recent death of Dr. Powell.