CULTURE OF THE GLOBE ARTICHOKE.

J. W. WELLINGTON
UNDER DIRECTION OF
U. P. HEDRICK.

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SUMMARY.

The Globe artichoke has been successfully cultivated on the Station grounds for several years. Altho generally known as *Cynara scolymus* Linn., this vegetable is really a variation of cardoon, *Cynara cardunculus* Linn. The horticultural varieties are not clearly defined as is shown by the differences between seedlings of a named sort.

The plant is not fully hardy in our latitude and requires covering to endure the winter. Coal ashes proved to be a satisfactory material with which to cover the artichoke, affording sufficient protection without causing decay of the crowns.

From records taken, it is evident that marked variations exist in the producing capacity of individual plants of a variety.

Consequently the separation of the offshoots from the old main root of the plant is the most reliable method of propagation and should materially assist in the establishment of uniform and meritorious strains.

The edible portion of the artichoke is the flower bud. The plant itself is remarkably thrifty in growth and is practically free from fungus and insect pests. One insect, a black aphid or louse, becomes troublesome at times but is satisfactorily controlled by spraying with a properly prepared dilution of Black Leaf 40 and whale-oil soap.

GENERAL INFORMATION.

The Globe artichoke (*Cynara cardunculus* Linn.) is a perennial plant which under favorable environment may produce profitable crops for several years. It has been successfully grown on the Station grounds for several seasons. Special attention has been given to winter protection and to a study of variations within a
horticultural variety. The Globe artichoke, altho widely distributed in this country, has never become a general favorite among vegetables because of its varying ability to survive our Northern winters and also because of the prejudice against uncommon foods.

BOTANICAL CLASSIFICATION.

Index Kewensis\(^1\) classifies the Globe artichoke as Cynara cardunculus Linn., making it a variation of cardoon and not a distinct species. The commonly used and accepted species designation, Cynara scolymus Linn., is given as a synonym. From observation of the two vegetables as they grew on the Station grounds this past season one readily accepts the supposition that the two are closely related — cardoon with spiny leaves and flower buds seeming to be but crude forms of Globe artichoke. At a short distance the two cannot be distinguished. Jerusalem artichoke, Helianthus tuberosus Linn., is a distinct species belonging to another genus of the Compositae family. In the Jerusalem artichoke the edible portion consists of the underground tubers. Because of their common name — artichoke — the two vegetables are often confused in the minds of those who know only one or neither of the two species.

HISTORY.

De Candolle\(^2\) believed the artichoke to be derived from the cardoon and, since the latter is indigenous to the sandy shores of the Mediterranean Sea, there must also be the home of the artichoke. Sturtevant\(^3\) came to the conclusion that the artichoke was not utilized as food until the fifteenth century. It is asserted that the artichoke was first introduced into England in 1548.

VARIETIES.

The horticultural variations of the Globe artichoke are not sharply defined, due undoubtedly to the ease with which the flowers are naturally crossed. Hence seedlings do not always come true to type. Vilmorin\(^4\) mentions thirteen varieties differing in shape and color of the flower buds and in the presence or absence of spines.

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\(^1\) Hooker & Jackson. Index Kewensis 1:686. 1895.
| Plant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1916  |   |   |   |   |   | 1 |   |   |   | 1  |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| June 30| 2 |   | 1 |   |   |   |   |   |   |   | 1  |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| July 1 | 3 |   | 1 |   |   | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5     | 4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7     | 8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5     | 9 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 10    | 11|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 12    | 13|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 14    | 15|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 16    | 17|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 18    | 19|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 20    | 21|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 22    | 23|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 24    | 25|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 26    | 27|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Totals| 0 | 1 | 3 | 13| 5 | 4 | 0 | 2 | 3 | 13| 5  | 4  | 0  | 2  | 3  | 5  | 4  | 2  | 2  | 0  | 0  | 4  | 2  | 0  | 0  | 4  | 11 | 7  | 11 | 13 | 7  | 3  | 13 | 6  | 9  | 10 | 18 | 3  | 2  | 14 | 16 | 11 | 13 | 12 | 0  | 18 | 2  | 8  |
However, there are only a very few sorts listed in our American seed catalogs, prominent among which are the Green Globe and the Purple Globe. The lack of distinctive names implies that the varieties have not been carefully standardized.

STATION STUDIES.

In February, 1913, two hundred fifty Green Globe artichoke plants were bought from a Southern firm. One hundred of the best plants were set in the garden in April. About twenty plants fruited that fall and these, together with twenty non-producers, were dug and stored in a cold house. In the spring of 1914 suckers from these old roots were potted and two rows placed in the garden. Ten of the fifty plants bore fruit. In 1915 the two rows yielded an abundant crop, some plants being peculiarly prolific, while others bore very few edible buds. These variations suggested taking careful records. During the first two or three years it was discovered that the artichoke not only needs winter protection but that it is particular in its requirements. A non-heating material — coal ashes — proved very satisfactory:

In the season of 1916 the plants of the two rows were given individual numbers and records kept of their performance. Table I shows at once the great variations that exist in the yielding capacity of different plants. The season was, however, peculiarly unfavorable to the artichoke, a crop which requires ample moisture during its fruiting season. The records do not, therefore, give a fair interpretation of the Globe artichoke’s value. In normal seasons the yield is not only greater but also extends over a much greater period. Plate I gives a view of the plants as grown at the Station.

CULTURE.

The Globe artichoke may be easily grown from seed either by starting the plants in a frame under glass or sowing the seed directly in the open ground. The seeds are large and germinate quickly, consequently young plants are easily grown. A pan of seedlings of the Green Globe variety is shown in Fig. 1. The objection to the seedage method of propagation is that it produces a great number of strains, similar in external appearance but differing in productivity. Propagation by means of suckers is the more satisfactory method of
Plate II.—Winter Protection of Globe Artichoke.

Two plants in foreground trimmed and ready for covering with coal ashes, as shown by mounds in background.
reproduction, for in this way fine yielding strains may be maintained and the varieties ameliorated. In a well-cared-for bed each plant may have sixteen to twenty of these suckers about the old root. In ordinary course of operation it is advisable to remove all but five or six of these young plants so that there is always abundant material for young stock. This method of propagation is best performed in the spring when the leaves have attained a length of twelve to fifteen inches. It is advisable to shovel away enough earth from the base of the plants so that the point of attachment to the old root may be seen. Then with a sharp spade or knife it is possible to cut away the young plant, together with a few roots (Fig. 2). These plantlets may be then set directly into a permanent row or may be nurtured under more favorable conditions and later transplanted.

The distance between rows should be at least four feet and the distance between plants about three feet. In planning a bed it is well to provide for a three- or four-year duration; that is, renewing one row each year. The object of this arrangement is to dispose of
the old plants as they become less fruitful and, more important still, to provide young plants which, with favorable environment, will send up fruiting stems in the later portion of the same season in which they are set, thus greatly prolonging the harvest period of the bed.

![Diagram of plants](image)

**Fig. 2.—** New plants from suckers. Strong leaves have been trimmed back to prevent drying. Small rootlets must be preserved in removing plants from parent.

The Globe artichoke is a gross feeder and requires an abundant supply of rotted manure in order to promote large crops. This manure should be dug into the soil between the rows and plants. Moisture is particularly essential during the fruiting season, but in
normal seasons is plentifully supplied by rain and good tillage. Undoubtedly the artichoke would respond handsomely to irrigation.

The edible portion of the Globe artichoke is the globular flower bud which is produced on the terminal and side branches of a strong, upright fruiting stalk. This stalk stands above the foliage in height and, combined with the large ash gray leaves, gives the plant an attractive appearance. The heads are cut when they have attained their greatest size, prior to the actual appearance of the floral parts (Fig. 3). Exhibition heads may be secured by removing all except the terminal one and by supplying the plant abundant food and water. The fruiting stalks should be removed when all heads have been cut.

Fig. 3.—Edible portion of globe artichoke,—the flower bud. Bases of bracts and solid center, except spiny core, are eaten.
WINTER PROTECTION.

The Globe artichoke needs protection during the coldest part of the winter. Fresh manure was tried on the Station beds but with disastrous results in that, either by heating or by retaining too much water, it caused the heart of the crowns to rot, with consequent death of the plant. Coal ashes were then used, with success. The foliage is semi-hardy and should not be covered until late in November, and the covering removed in spring in late March or early April. Before mounding with ashes (Plate II) the leaves must be cut back to within a foot of ground and drawn in about the crown. In the spring when the covering is removed the small leaves will be found to be in a blanched condition, but soon turn green and are followed by new leaves from the crown.

INSECT AND FUNGUS TROUBLES.

The plants on the Station grounds have been free from all fungus attacks.

A black aphid or louse is troublesome at times, literally covering the undersides of the leaves, and occurring especially during midsummer. This insect may be controlled by spraying thoroly with a dilution of Black Leaf 40 and whale-oil soap, the formula being 1 ounce of Black Leaf 40 and 4 ounces of whale-oil soap to 8 3/4 gallons of water. It is necessary to spray the lower surfaces of the leaves and about the crown of the plant.

USE OF THE GLOBE ARTICHOKE.

The artichoke must be considered a luxury rather than a staple. Both on account of this fact and on account of the large amount of ground space required per plant — 16 square feet — this vegetable has no place in a very small garden, especially in years of shortage of staple foods. However, to many people the artichoke is a much-desired delicacy and is eaten almost every day during fruiting season. The edible portion is the immature flower bud and which may be prepared for the table in many different ways. The following recipe is very satisfactory.

BOILED ARTICHOKE.

Whatever portion of the stem remains should be cut away from the bud, the large outside bottom leaves or bracts removed and
imperfect ones trimmed. The heads should then be placed in cold water for one-half hour. Drain and cook one-half to one hour in salted boiling water to which has been added one tablespoonful of lemon juice or vinegar for each quart. When tender, drain and serve with melted butter, pepper, salt or any of the salad dressings. Of the large outer leaves only the small fleshy base is useful but the center leaves are tender almost to the tip. The spiny center called the "choke" is not edible. After the bracts and "choke" are removed the fleshy base remaining may be eaten.