

Marx Hardy Machiavelli Joyce Austen
Defoe Abbot Melville Montaigne Cooper Emerson Hugo
Stoker Wilde Christie Maupassant Haggard Chesterton Molière Eliot Grimm
Garnett Engels Schiller Byron Maupassant Schiller
Goethe Hawthorne Smith Kafka
Cotton Dostoyevsky Dostoyevsky Smith Willis
Baum Henry Kipling Doyle Henry Willis
Leslie Dumas Flaubert Nietzsche Nietzsche
Stockton Turgenev Balzac Vatsyayana Crane
Burroughs Verne Verne
Curtis Tocqueville Gogol Gogol Busch
Homer Tolstoy Tolstoy Gogol Busch
Darwin Thoreau Thoreau Twain Plato Scott
Potter Zola Lawrence Lawrence Lawrence Harte
Kant Jowett Stevenson Dickens Hesse Harte
Andersen Andersen Andersen Burton Hesse Harte
London Descartes Cervantes Cervantes Cooke
Poe Aristotle Wells Wells Wells Cooke
Hale James Hastings Hastings Hastings Cooke
Bunner Shakespeare Shakespeare Shakespeare Irving
Richter Chambers Chambers Chambers Irving
Doré Chekhov Chekhov Chekhov Alcott
Swift Dante Shaw Shaw Shaw Alcott
Pushkin Pushkin Pushkin Alcott
Newton Newton Newton Alcott
Wodehouse Wodehouse Wodehouse



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The Cauliflower

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Imprint

This book is part of TREDITION CLASSICS

Author: A. A. (Arthur Alger) Crozier
Cover design: Buchgut, Berlin - Germany

Publisher: tredition GmbH, Hamburg - Germany
ISBN: 978-3-8472-1788-6

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THE
CAULIFLOWER

BY

A. A. CROZIER.

The Rural Publishing Company,
Times Building,
New York.

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By A. A. CROZIER.
Ann Arbor, Mich.



EARLY ALABASTER. — (See Page 127).

"There has undoubtedly been more money made by the cultivation of the cauliflower per acre than by any other vegetable yet discovered."

Isaac F. Tillinghast,
Pennsylvania.

"There is no vegetable, the cultivation of which is more generally neglected than that of the cauliflower. This is not because it is not considered a valuable addition to any garden, but from a mistaken notion that it is a very difficult vegetable to raise."

H. M. Stringfellow,
Texas.

"I incline to think that there is a fortune in store for the energetic young man who finds a favorable locality for growing this vegetable near any one of our large cities and who makes a specialty of the work."

Prof. E. S. Goff,
Wisconsin.

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INTRODUCTION.

The cauliflower is one of the minor vegetables which is now attracting more than ordinary attention in this country, and being grown with remarkable success and profit in a few localities which have been found to be particularly adapted to it. With most of our gardeners, however, it is still considered a very uncertain and unprofitable crop. This is due not only to the peculiar requirements of the cauliflower as to soil and climate, but also to the want of familiarity on the part of most American gardeners with modern varieties and with methods of cultivation adapted to our climate.

For a number of years, while engaged in market gardening and fruit growing in Western Michigan, the writer made a specialty of raising cauliflowers for the Grand Rapids and Chicago markets, planting from three to five acres a year. During this time most of the varieties offered by American seedsmen were tested, and the best methods of cultivation sought. On the whole, the cauliflower crop was found more profitable than any other, with the possible exception of peaches. There were partial failures, but these were due to causes which might [Pg 6] have been foreseen and prevented. The experience gained at that time, and subsequent observation, have convinced the author that there are many parts of the country in which the climate and soil are adapted to this vegetable, but where its cultivation is yet practically unknown. The requirements for success with cauliflower will be found to be simple but imperative.

A few direct experiments may be needed after one has gained the general information herein set forth, to enable one to determine whether it is best to continue or abandon its cultivation in his own locality.

I have endeavored to treat the subject in a manner adapted to the diversity of conditions found within the limits of the United States. With no vegetable is it more important to have fixed rules for one's guidance than with the cauliflower; but these rules must of necessity be of the most restricted application; in fact, they require to be adjusted to almost each individual case. So, while I have not omitted to give minute, practical directions where they seemed necessary, I have endeavored to call attention to the circumstances under which they are to be employed, and must here caution the grower against following them too implicitly under different circumstances. This remark applies particularly to the selection of varieties and the dates of planting.

[Pg 7] Under the head of "Management of the Crop" will be found the most important information of general application, while in the chapter on "Cauliflower Regions" are given numerous records of experience from growers in all parts of the country, which will be found of special value for each locality.

Those who desire direct information on particular points will consult the index and turn at once to the paragraphs which treat of soil, culture, enemies, marketing, best varieties, etc. It is unfortunate that confusion exists in regard to some of the varieties, but it seemed best to make the list as complete as possible, even at the risk of introducing a few errors. The confusion (which is more apparent than real), arises, in part, from seeds of certain varieties having been sold at times for those of others, and in part from the extreme liability of the varieties of the cauliflower to deteriorate or change. Errors from both these sources, when reduced to a minimum by the accumulation of evidence, reveal the fact that there are varieties and groups of varieties which have acquired well defined characters, and that the differences between the varieties are increasing rather than otherwise as time goes on. The selection of varieties for planting is a matter to be determined largely by the locality where they are to be grown. The [Pg 8] differences between them lie mainly in

their adaptation to particular purposes. There are almost none but what are good somewhere.

I cannot omit to emphasize here the fact that the fall crop should be mainly relied upon in this country. It is a waste of time to attempt to have cauliflowers head in our hot summer months, and until our markets are better supplied than they now are with this vegetable, it will not often pay to do much with the spring crop. The time may come when, as in England, we may expect to have cauliflower and broccoli the year round, but it has not come yet.

The chapter on cooking cauliflower should not be overlooked. One reason why there is such a limited demand for this vegetable in this country is that so few here know how to cook it. The methods of cooking it are simple enough, but there are many persons who always hesitate to try anything new, and as cauliflowers do not appear regularly in the market these people never learn how to use them.

Those interested in extending the market for this vegetable will do well to devise special means for introducing it into families not familiar with it. The writer found that foreigners who had been accustomed to the use of cauliflower in the "Old Country" were his best customers.

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THE CAULIFLOWER.

CHAPTER I.

ORIGIN AND HISTORY.

On the sea-coasts of Great Britain and other countries of western Europe, from Norway around to the northern shores of the Mediterranean (where it is chiefly at home) grows a small biennial plant, looking somewhat like a mustard or half-grown cabbage. This is the wild cabbage, *Brassica oleracea*, from which our cultivated cabbages originated. It is entirely destitute of a head, but has rather succulent stems and leaves, and has been used more or less for food from the earliest historic times. The cultivated plants which most resemble this wild species, are our different sorts of kale. In fact this wild plant is the original, not only of our headed cabbage in its different varieties, but also of all forms of kale, the kohl-rabi, brussels-sprouts, broccolis and cauliflowers. No more wonderful example than this exists of the changes produced in a wild plant by cultivation. Just when the improvement of the wild cabbage began is unknown, probably at least 4000 years ago. Of the [Pg 10] cultivated forms of this species Theophrastus distinguished three, Pliny, six; Tournefort, twenty; and De Candolle, in 1821, more than thirty. For a long time this plant was used for food in a slightly improved state before heads of any kind were developed. Sturtevant, quotes Oliver de Serres, as saying that, "White cabbages came from the north, and the art of making them head was unknown in the time of Charlemagne." He adds that the first unmistakable reference to our headed cabbage that he finds is by Rullius, who in 1536 mentions globular heads, a foot and a half in diameter. It was probably about this time that the cauliflower, and several other forms of the species made their appearance. There is difference of opinion as to whether our

cauliflowers or the broccolis were first to originate. London believed that the broccolis, which Miller says first came to England from Italy in 1719, were derived from the cauliflower. Phillips, in his "History of Cultivated Vegetables," said, in 1822, that the broccoli appears to be an accidental mixture of the common cabbage and the cauliflower, but of this he gives no proof.

Sturtevant says: "It is certainly very curious that the early botanists did not describe or figure the broccoli. The omission is only explainable on the supposition that it was confounded with the [Pg 11] cauliflower, just as Linnæus brought the cauliflower and the broccoli into one botanical variety." When broccolis came to England from Italy, they were at first known under the names "sprout-cauliflower," or "Italian asparagus." This, however, is not sufficient reason for believing that the broccolis are derived from the cauliflowers, as the word broccoli was, and still is, applied in Italy to the tender shoots of various kinds of cabbages and turnips.

Some recent authorities have believed, since the broccoli is coarser than the cauliflower, more variable in character, more robust in habit, and requires a longer season, that it is the original form, of which the cauliflower is only an improvement. Thus, Vilmorin says: "The sprouting or asparagus broccoli represents the first form exhibited by the new vegetable when it ceased to be the earliest cabbage, and was grown with an especial view to its shoots; after this, by continued selection and successive improvements, varieties were obtained which produced a compact white head, and some of these varieties were still further improved into kinds which are sufficiently early to commence and complete their entire growth in the course of the same year; these last named kinds are now known by the name of cauliflowers."

At the Cirencester Agricultural College, England, about 1860, broccolis were produced, with [Pg 12] other variables, directly from seeds of the wild cabbage. These, and other considerations, make it seem doubtful that our broccolis have originated from our cauliflowers. Whatever the original form of the cauliflower may have been, it seems more probable that the broccolis now grown had a separate origin, either from the wild state or from some form of

kale. Nearly all our present varieties of broccoli originated in England from a few sorts introduced from Italy.

Cauliflowers, in name at least, are older than the broccolis, and were brought to a high state of development and widely distributed before the latter are mentioned in history. They were grown in the Mediterranean region long before they became known in other parts of Europe.

Sturtevant finds no mention of the cauliflower or broccoli in ancient authors, the only indication of the kind being the use of the word *cyma* by Pliny for a form of the cabbage tribe, which he thinks may have been the broccoli. Heuze states that three varieties of cauliflower were known in Spain in the twelfth century. In 1565 the cauliflower is reported as being extensively grown in Hayti in the New World.

In 1573-5, Rauwolf, while traveling in the East, found the cauliflower cultivated at Aleppo, in Turkey. [Pg 13] It seems to have been introduced into England from the Island of Cyprus, and it is mentioned by Lyte, in 1586, under the name of "Cyprus coleworts."

Alpinus, in his work on the "Plants of Egypt," published in 1591, states that the only plants of the cabbage tribe which he saw in that country were the cauliflower and kohlrabi. Cauliflower was also well known in Greece at an early day.

Gerard published a figure of it in England in 1597. In 1612 it is reported as being cultivated in France, and in 1619 as being sold in the London market. In 1694 Pompos, a French author, is quoted as saying that, "It comes to us in Paris by way of Marseilles from the Isle of Cyprus, which is the only place I know of where it seeds."

From this time on, its cultivation gradually extended throughout Europe. In England, especially, the cauliflower, as well as the broccoli, became a popular garden vegetable. Philip Miller, in his "Gardener's Dictionary," published in 1741, gives a long description of the method of growing this vegetable, though mentioning but one variety, while several varieties of broccoli are described. He says, however, that "cauliflowers have of late years been so far improved in England as to far exceed in goodness and magnitude what are produced in most parts of Europe." Prior to the French Revolution,

(which began in 1778) cauliflower had, in fact, come to be [Pg 14] largely exported from England into Holland, Germany and France; but soon after this it came to be more generally grown in those countries and was no longer imported, though English seed was still used.

The numerous varieties of cauliflower now cultivated are of comparatively recent origin. Although some of the earliest writers on this vegetable mention two or more varieties, these were in some cases merely different crops produced by sowing the seed at different periods. In 1796, Marshall, in his English work on gardening, says that "cauliflower is sometimes distinguished into an early and late sort; though in fact there is no difference, only as the seed of that called 'early' is saved from the foremost plants." Phillips, in 1822, said: "Our gardeners furnish us with an early and a late variety, both of which are much esteemed."

In 1831, Don, of England, in his work on botany and gardening ("History of Dichlamydeous Plants") describes fifteen varieties of broccoli and three of cauliflower. The latter were known as Early, Later or Large, and Red, the last being the most hardy. These three kinds differed but little in general character, and were all inclined to sport into inferior varieties.

In 1832 there was still a discussion in England as to whether the early and late cauliflowers were really distinct, or differed only in time of sowing.

[Pg 15] John Rogers, in his "Vegetable Cultivator" (London, 1843), said: "There are two varieties of the cauliflower, the early and the late, which are alike in their growth and size, only that the early kind, as the name implies, comes in about a week before the other, provided the true sort has been obtained. There is, however, no certainty of knowing this, unless by sowing the seed from the earliest sorts, as is the practice of the London kitchen gardeners. The early variety was grown for a number of years in the grounds called the Meat-house Gardens, at Millbank, near Chelsea, and was of a superior quality, and generally the first at market. The late variety is supposed to have originated from a stock for many years cultivated on a piece of ground called the Jamaica level, near Deptford, and which produced uncommonly fine heads, but later than those at

Millbank. Both soils are nearly similar, being a deep rich loam, on a moist subsoil, and continually enriched with dung. Both the varieties are of a delicate nature, being generally too tender to resist the cold of the winter season without the occasional aid of glasses or other means; and the sight of many acres overspread with such glasses in the vicinity of London gives a stranger a forcible idea of the riches and luxury of the capital."

In France, in 1824, three varieties, differing mainly in earliness, were recognized, *le dur*, *le [Pg 16] demi-dur* and *le tendre*. These names are still applied to well known French sorts.

Victor Paquet, in his *Plantes Potagers*, published at Paris in 1846, says: "The greater number of varieties of cauliflower are white, but some are green or reddish. They are cooked in water, and dressed with oil or white sauce. We cultivate two distinct varieties, *tendre* and *demi-dur*. The sub-varieties *gros* and *petit Solomon* are sorts of the *tendre*."

Thus we see that early in the present century there were sorts differing at least in time of maturity which had originated by selection; and, although history does not show it, we must infer that even then there were distinct differences in the cauliflowers cultivated in different parts of Europe. From this time on cauliflowers from various localities were brought more into public notice and greater efforts were made toward their improvement.

In 1845, C. M. Hovey, of Boston, said, that "the varieties of cauliflower have been greatly improved within a few years, and now not less than a dozen kinds are found in the catalogues." The most noted of those mentioned by him are Walcheren and Large Asiatic—varieties still in cultivation. Burr described ten sorts in 1863, and Vilmorin sixteen sorts in 1883. There are recorded in the present work the names of one hundred and forty [Pg 17] varieties besides synonyms. Some of these varieties are no longer cultivated, and a few are too near other sorts to be considered worthy of a separate name; so that of the cauliflowers proper there may be said to be now in cultivation about one hundred distinct varieties.

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CHAPTER II.

THE CAULIFLOWER INDUSTRY.

In the United States, as already stated, the cauliflower industry is but little developed. This vegetable receives, for example, far less attention than is given to celery, though it is more easily grown. One may look over the recent files of some of our agricultural and horticultural papers for several years together and not find the cauliflower mentioned. In fact, more general attention was given the cauliflower in this country forty years ago than to-day. The disappointments of those who attempted to grow cauliflower at an early day, expecting to grow it, as in Europe, with as little trouble as cabbage, have led to an almost universal belief that the cauliflower is peculiarly unreliable in the United States. This, for a large portion of the country, is true; but it is beginning to be known that there are localities where, with proper management, it is almost as safe as any crop.

It is by no means true that in Europe the cauliflower is everywhere grown with success. There are comparatively small areas, even in the most favorable portions of that continent, where it can be profitably grown. Although the climate of [Pg 20] Europe, as a whole, is better for this vegetable than that of the United States, the greater success with the cauliflower there is due largely to the greater care exercised in choosing proper soil, in fertilization, and in irrigation. The area of cauliflower growing has largely increased in Europe within the past few years. In the vicinity of Angiers, France, the growing of cauliflower for market began about 1880. In a short time it reached an extent of several thousand hectares (a hectare is two and one-half acres). There is found in this region a loamy soil, such as is especially suitable for this vegetable. The land is thrown up into beds twenty-five or thirty feet wide, with ditches between for irrigation. The rows are placed two and one-half feet apart, and

the plants one and one-half feet apart in the rows. On the approach of winter the plants which are still unheaded are ridged up with earth for protection in the same manner as celery. The crop fails from too cold or too wet weather, about one year in five. The heads are mostly sent to Paris, and sell there at from forty cents to \$1 per dozen. Even at these rates the crop is a profitable one, often bringing \$300 per acre after paying the cost of marketing. Land is worth from \$24 to \$40 per acre. For three or four weeks in spring there are sent from Angiers to Paris, on an average, forty car-loads per day. In [Pg 21] the immediate vicinity of Paris large quantities of cauliflower are grown for market.

In some parts of Germany the cauliflower is a very popular crop. Around Erfurt, which is nearly in the center of the empire, greater care is taken with its cultivation than probably anywhere else in the world, and large quantities are grown for seed. The late James Vick has told (Report Mich. Pom. Soc., 1874, p. 206,) how the low swampy land around Erfurt is thrown up into wide beds with ditches between, from which, every dry day, the water is dipped upon the plants. In Austria, also, cauliflower is a well-known vegetable, and several valuable varieties have originated in that country. Few seedsmen offer a more complete list of varieties than those of Vienna. In Italy the cauliflower has long been known, and in some places is a staple food of the poorer classes. Most of our standard late varieties are of Italian origin.

In Holland, cauliflowers are grown not only for home use and for seed, but also for the early London market. Around London the cauliflower has been extensively grown for a longer time than anywhere else, and it is there regarded as one of the most important garden crops. A recent English writer says: "With the exception of the potato, I question whether there is another vegetable to be compared with the cauliflower for general [Pg 22] usefulness." Hundreds of acres are devoted to it near London, a large portion being under glass for the early crop. Formerly the cauliflower crop was all cut and sent to market, with the exception of a small portion saved for seed; but of late, extensive fields are purchased entire by Crosse and Blackwell for pickling purposes.

In the United States there are a few points where the growing of cauliflower for market is assuming considerable importance. On Long Island, in 1879, the crop was estimated by Oemler at 100,000 pounds, besides what was used for pickling. In 1885 Brill estimated the total crop of Suffolk County at about 125,000 barrels. In 1889, the value of the crop sold from Suffolk County was estimated at \$200,000, nine-tenths of all the cauliflowers sent to the New York market being grown in that county. At Farmingdale and Central Park, in 1888, two pickle factories used five hundred barrels of cauliflowers, besides the usual proportion of other vegetables. Much of the crop from Long Island is now sent to markets beyond New York. Philadelphia receives but little good cauliflower except that which comes from Long Island. The same is true of the city of Washington. The receipts in the latter city from Long Island for the three fall months of 1890 were about 20,000 barrels.

The Chicago market is seldom fully supplied [Pg 23] with cauliflowers and the price there averages fully as good as anywhere in the country. Considerable amounts are grown near the city, and small quantities are shipped in from Michigan, Wisconsin, Central Illinois, and even from California. One pickle factory at Crystal Lake, near Chicago, contracted, in 1874, for 16 acres of cauliflowers, besides other produce. The pickle factories always furnish a market for any surplus when the price is low, or the heads have become disfigured in any way. In fact, the supply of home grown cauliflowers is always insufficient for pickling purposes, and large amounts have to be annually imported, notwithstanding the tariff, which, formerly ten per cent., ad valorem, is now forty-five per cent. Imported cauliflowers are brought mainly from Germany and Holland, and come packed in brine in 60 gallon casks. Large quantities of mixed pickles containing cauliflower are also imported.

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CHAPTER III.

MANAGEMENT OF THE CROP.

SOIL.

Almost any soil will do for the cauliflower, providing it is moist and fertile. The requirements of this vegetable as to soil are practically the same as those for the cabbage, except, that as the cauliflower will stand less drouth, it should generally have a heavier and richer soil, and rather more room. A soil which produces cabbages with large and rather soft heads is likely to be good for cauliflowers; that is, it contains more vegetable matter than the right amount for producing hard heads of cabbage. Muck will answer for cauliflowers if it is not too wet or too dry; it should like any other soil be treated to a good coat of barn-yard manure—horse manure being preferable on such land, as it promotes fermentation. Small quantities of lime may also be applied for the same reason.

The best soil is generally a strong sandy loam. Light sand or gravel is the poorest; and unless made very rich and artificially watered, it is useless to attempt to grow cauliflowers on such a soil in ordinary seasons. Heavy clay is less suitable for cauliflower than for cabbage, chiefly because on [Pg 26] such a soil the plants are apt to be small and late. In a warm climate a heavier soil is required than in a cool one. The ground should, if possible, be fresh sod-land (preferably pasture) or at most one year removed from the sod. It is unsafe to plant cauliflowers after cauliflowers, or any other plant of the cabbage tribe, though it is sometimes successfully done. Newly cleared land, or land fresh from the sod, is even more desirable for cauliflowers than for cabbages. On new land the crop is not only less subject to disease and the attacks of insects, but its growth is likely to be more satisfactory, even without manure, or with only a moderate amount, than it is on old land, however well manured.

FERTILIZERS.

The cauliflower is a gross feeder, and land intended for this crop can hardly be made too rich. Barn-yard manure is usually employed, and there is nothing better for general use. Commercial fertilizers—potash, soda and phosphates—are also good, especially to promote heading. The wild plant from which the cauliflower is derived being a native of the sea-shore, common salt seems particularly adapted to it. Kelp, or sea-weed, is used with advantage where it can be obtained.

If barn-yard manure is not too coarse, plowing it under in moderate amount will, in addition to its [Pg 27] fertilizing effect, help to keep the land moist. Where the cabbage maggot is troublesome the use of fresh stable manure is thought to promote the attack of that insect, and therefore only well rotted manure is recommended. Of course a larger amount of manure may be safely applied if it is well rotted than if it is coarse and strawy. Liquid manure is used by many growers, being applied a few weeks before planting, and from time to time during the season. Water-closet contents, diluted or composted, and applied either in the liquid or powdered form, is one of the best of fertilizers for the cauliflower, but it should not be used too freely, or too late in the season. All coarse or concentrated fertilizers should be applied at least two weeks before the time for transplanting, and such as are applied on the surface should be well mixed with the soil.

SOWING THE SEED.

The preparation of the seed-bed will vary according to circumstances. I formerly grew the plants for the fall crop in beds elevated two or three feet above the ground, in order to escape the flea beetle, but in later years I have grown a portion of the plants in the open ground. This method requires less care, and is now usually practiced by large growers, though it sometimes fails, for the reason stated. Remedies for the flea beetle will be found in another [Pg 28] chapter. The soil in which the plants are to be grown should be rich and fine, rather light, and improved, if necessary, with a little of the finest old rotted manure. A small amount of lime or ashes raked into the soil is a benefit, and is thought to prevent the attack of the