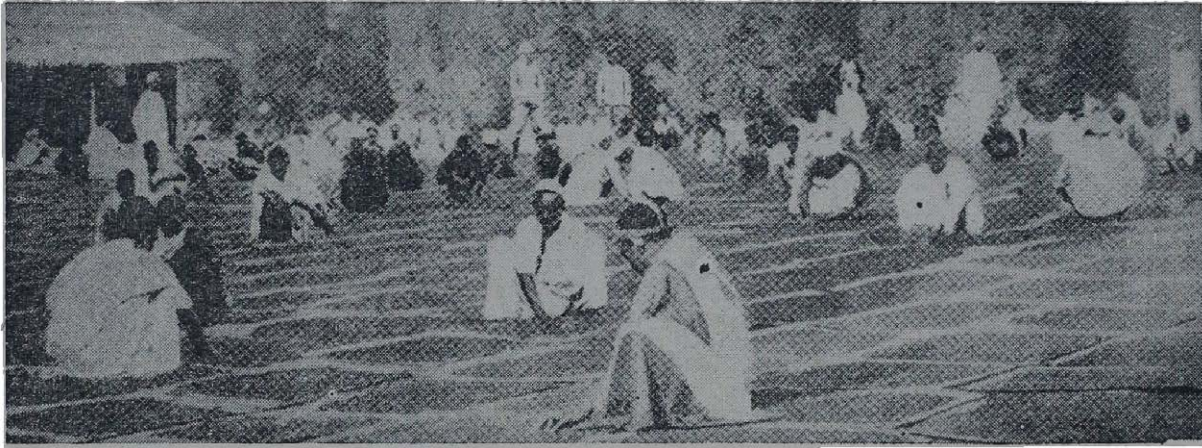


ELEMENTARY SCIENCE SECTION

SPICES AND HERBS



Drying Cloves .

IF modern cold storage had been known in the days of Columbus, the New World might not have been discovered until centuries later. For without our modern means of keeping food palatable throughout the year, the Europe of the Middle Ages and later times found spices and herbs almost indispensable to flavor its poor and often half-spoiled food.

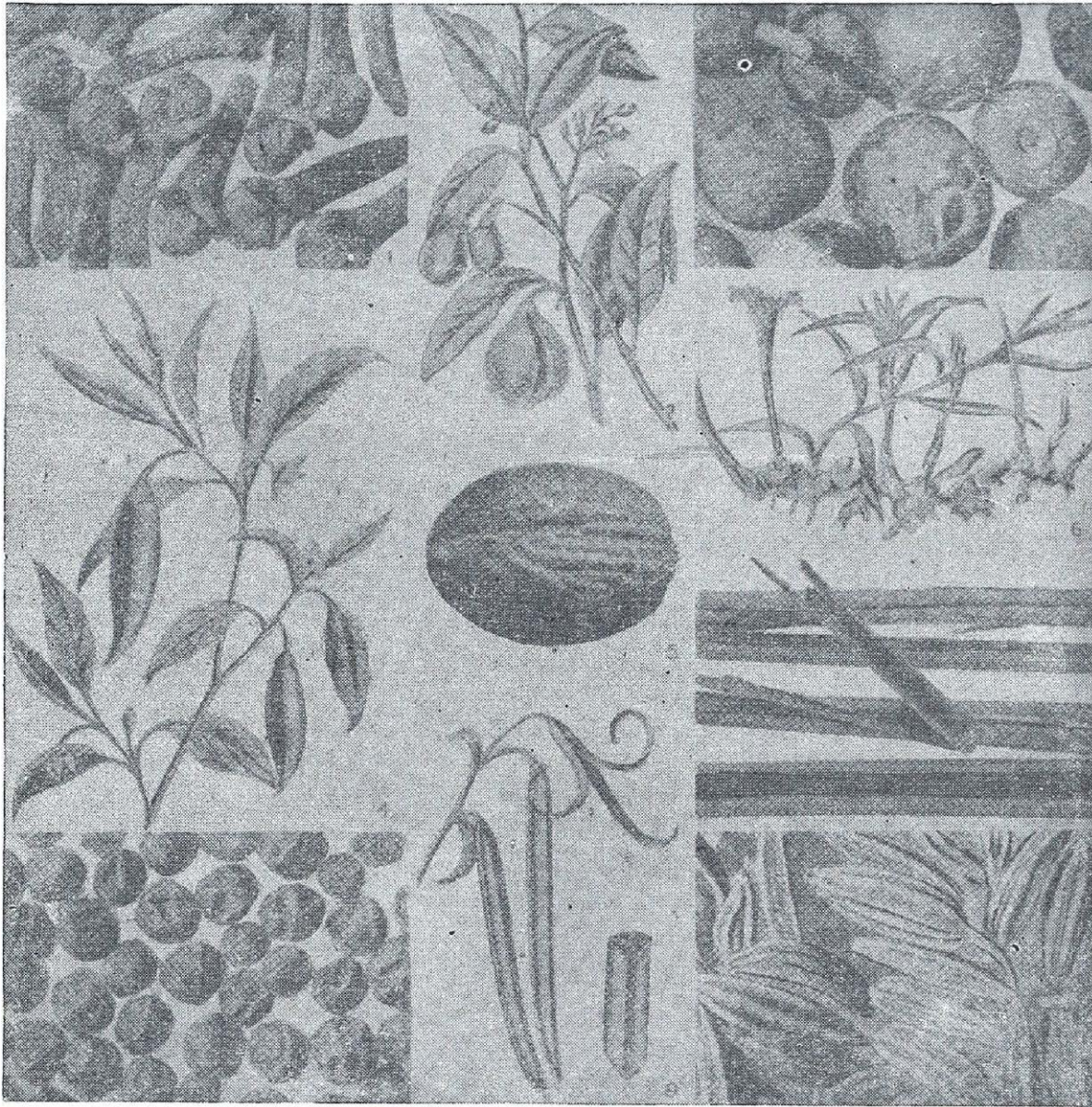
In medieval England, for example, the usual winter diet consisted of meal (not made from Indian corn, however) and coarse salt meat, which became half-rotten before the winter was over. So spices were in enormous demand to lend some savor to this monotonous and pleasureless fare. Cinnamon, cloves, and pepper were worth their weight in gold and men risked their lives and fortunes in seeking new routes to the land of spices—the East Indies and the neighboring parts of Asia.

For centuries spices, so common with us that we scarcely give them a thought, were among the most important articles of commerce. The spice trade was a

leading factor in determining the rise and fall of states, in provoking wars, and in discovery and exploration. It was chiefly the desire to find new ways of access to this vastly profitable trade that led to the discovery of sea routes to the east and the discovery of America.

Arabia was at first the great distributing center for spices, which were brought overland in great caravans. Venice rose to world power through her control of the Mediterranean trade in spices and other imports from the East. When Venice lost command of the trade through the discovery of new sea routes to the East, first Portugal, then Holland, rose to wealth and power largely through the spice monopoly.

In the days of Queen Elizabeth the Dutch went so far in their efforts to keep all the spice trade in their own hands that they cut down clove, cinnamon, and pepper trees in districts not directly under their control and inflicted the severest punishments on anyone who attempted to infringe on their monopoly.



SOME WELL-KNOWN SPICES AND HERBS

1. Cloves (twice the natural size) (2) Branch of a nutmeg tree (reduced in size), showing flowers, leaves, and fruit (3) Allspice berries (highly magnified) (4) Branch of red pepper (5) Nutmeg (6) A growing ginger root (7) Cinnamon bark (8) Black pepper berries (9) Pods of vanilla branch (reduced in size) (10) Caraway seeds (highly magnified).

In Ceylon, the great cinnamon center, death was the penalty for the illegal sale of even a single stick of cinnamon; and this law remained in force until the English took the island in 1796. It was largely to break the grip of the Dutch on the profitable spice-trade that the East India

Company was formed in England, thus laying the foundations for British rule in India.

Most of the spices are still produced in the East Indies, the Philippines, and the neighboring lands. Pepper and cin-

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SPICES AND HERBS

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namon are native to India and Ceylon, but is also produced in nearby countries. Nutmeg and mace, cloves, turmeric, and ginger come from the Malay Archipelago, and cassia bark from China. The American tropics have supplied vanilla, red peppers, and allspice. The colder climates of Europe and Asia have produced caraway seed, parsley, mustard, and other herbs and roots.

Many of these things have other uses than that of flavoring foods. Some are valuable in perfumery, candies, and scented soaps, as vanilla, clover, and pepper, or in the manufacture of incense, as cinnamon. Many are used in medicine, as ginger, nutmegs, oil of cloves, etc. Turmeric is used in dyeing, especially in India and China, and marjoram serves in dyeing wool. Other spices and herbs are used in various arts.

It is a remarkable fact that a large proportion of the spices are successfully grown only on islands or near the sea. Nutmegs, cloves, vanilla, and cinnamon may be termed island plants.

The flavor of spices is due to the presence of aromatic oils secreted in the plant, but these oils are richest in different parts of various plants. In cloves and the little hot peppers called capers it is the flower buds that are particularly aromatic; in coriander, capsicums, and pepper, it is the fruit. Ginger, licorice, and turmeric are roots and underground stems. Cinnamon and cassia are the inner bark of a tree. In most of the savory herbs such as sage, mint, thyme, marjoram, catnip, *et cetera*, the leaves are richest in these essential oils, while nutmegs, caraway, and anise are seeds.

When the flower buds are utilized, they are plucked just before they are ready to break into blossom. The whole clove, as we buy it in a grocery store, is the dried flower bud of a small, bushy tree. One of the early uses of cloves is recorded in an ancient Chinese court order, wherein the officers of the court were required to hold cloves in their mouths while addressing the sovereign.

Capers, which are used in seasoning, are the salted and pickled buds of a bushy plant. Cinnamon is the dried inner bark of several species of trees, some of which grow in the Philippines. This aromatic bark has long been popular, having been prized even in Biblical times.

Allspice consists of the little unripe fruits of a tree which resembles the clove. The spice takes its name from a resemblance to a mixture of cinnamon, cloves, and nutmeg.

Coriander is one of the oldest spices, being mentioned in early Sanskrit and Egyptian writings. It is the fruit of a small herb, and is largely cultivated in India. It is valued as an ingredient in confectionery, to disguise the unpleasant taste of medicines, and as an ingredient in curry powder, which is a mixture of various spices. One of the spices often used in curry is the cumin, which is also used as a substitute for caraway seeds. Dill is the dried fruit of a plant. It is used in pickling, the most familiar use being for "dill" cucumber pickles which may be bought in any grocery store.

Another group of seasoning plants are cultivated in gardens as kitchen herbs. Among these are the sweet-smelling marjoram, thyme, sage, parsley, bay, and others.