VARIOUS

BIRDS AND ALL NATURE, VOL. V, NO. 2, FEBRUARY 1899

Various
Birds and all Nature, Vol. V, No. 2, February 1899

http://www.litres.ru/pages/biblio_book/?art=25569031
Birds and all Nature, Vol. V, No. 2, February 1899:

Содержание

Various Birds and all Nature, Vol. V, No. 2, February 1899

GINGER

Zingiber officinale Roscoe

DR. ALBERT SCHNEIDER,

Northwestern University School of Pharmacy

"And ginger shall be hot i' the mouth, too."

– *Shakespeare, Twelfth Night, II., 3.*

THE well-known spice ginger is the underground stem (*rhizome*) of an herbaceous reed-like plant known as *Zingiber officinale*. The rhizome is perennial, but the leaf and flower-

bearing stems are annual. The stems are from three to six feet high. The leaves of the upper part of the stem are sword-shaped; the lower leaves are rudimentary and sheath-like. The flowers occur in the form of conical spikes borne upon the apex of stems which bear only sheath-like leaves.

The ginger plant is said to be a native of southern Asia, although it is now rarely found growing wild. It is very extensively cultivated in the tropical countries of both hemispheres, particularly in southern China, India, Africa, and Jamaica. The word ginger is said to have been derived from the Greek "Zingiber," which again was derived from the Arabian "Zindschabil," which means the "root from India." It is further stated that the word was derived from Gingi, a country west of Pondecheri where the plant is said to grow wild.

True ginger must not be confounded with "wild ginger," which is a small herbaceous plant (*Asarum canadense*) of the United States. The long, slender rhizomes of *Asarum* have a pungent, aromatic taste similar to ginger. According to popular belief this plant has a peculiar charm. Friends provided with the leaves are enabled to converse with each other, though many miles apart and speaking in the faintest whisper.

The early Greeks and Romans made extensive use of ginger as a spice and as a medicine. During the third century it was apparently a very costly spice, but during the eleventh century it became cheaper, owing to extensive cultivation, and was quite generally used in Europe. Dioscrides and Plinius maintained

that this spice was derived chiefly from Arabia. The noted traveler and historian, Marco Polo (1280-1290) is said to have been the first European who saw the wild-growing plant in its home in India. As early as the thirteenth century a considerable number of varieties of ginger were under cultivation, which received distinctive names as Beledi, Colombino, Gebeli, Deli, etc., usually named after the country or locality from which it was obtained.

At the present time Jamaica supplies the United States with nearly all of the ginger, and this island is, therefore, known as "the land of ginger." Cochin-China and Africa also yield much ginger. In Jamaica the process of cultivation is somewhat as follows: During March and April portions of rhizomes, each bearing an "eye" (bud), are placed in furrows about one foot apart and covered with a few inches of soil. The lazy planter leaves portions of the rhizomes in the soil from year to year so as to avoid the necessity of planting, such ginger being known as "ratoon ginger" in contradistinction to the "plant ginger." The planted ginger soon sprouts, sending up shoots which require much sunlight and rain, both of which are plentiful in Jamaica. The field should be kept free from weeds which is not generally done for several reasons. In the first place pulling the weeds is apt to loosen the soil about the rhizomes which induces the development of "ginger rot," perhaps due to a fungus. Secondly, the Jamaica ginger planter is naturally lazy and does not like to exert himself. The careful planter burns the soil over before

planting so as to destroy the seeds of weeds. In brief it may be stated that ginger is planted, tended, and gathered much as potatoes are in the United States. As soon as gathered the rhizomes are freed from dirt, roots, and branches and thrown into a vessel of water preparatory to peeling. Peeling consists in removing the outer coat by means of a narrow-bladed knife. As soon as peeled the rhizomes are again thrown into water and washed. The object of keeping the "roots" in water and washing them frequently is to produce a white article. To this end bleaching by means of burning sulphur and chlorine fumes has been resorted to. Some ginger, especially that of Jamaica, is dusted over with powdered lime; this colors the ginger white very effectively. The bleaching processes also serve to destroy parasites which may infest the ginger before it is thoroughly dried.

The drying or curing of ginger is done in the sun. A piece of ground is leveled and laid with stone and cement. Upon this the rhizomes are spread from day to day for from six to eight days. At night and during rains they are placed under cover. The small planter does the curing upon mats of sticks, boards, palm or banana leaves raised somewhat above the ground. Very frequently the drying is done upon leaves placed directly upon the ground.

Not by any means all the ginger upon the market is peeled. The Jamaica ginger usually is; the African ginger is usually unpeeled, and hence dark in color; the Chinese ginger is usually partially

peeled. Peeling makes the product appear whiter and hastens drying very materially, but much of the ethereal oil and active principle is thereby lost since it occurs most plentifully in the outer coat.

The ginger crop impoverishes the soil very rapidly; every few years a new field must be planted. Forest soil is said to yield the best crops and in Jamaica thousands of acres of forest are annually destroyed by fire to prepare new ginger fields. Ginger appears upon the market either whole or ground. Unfortunately the ground article is oftentimes adulterated; for instance, with sago, tapioca, potato, wheat, and rice starch, with cayenne pepper, mustard, and other substances.

Ginger has been an important commercial and household article ever since the first century of our era. Poets and prose writers of the past and present have praised ginger and the many preparations having ginger in composition, because of their aromatic pungent taste and stimulating effect. The opening quotation from Shakespeare indicates the properties of ginger. That it was a highly-valued spice during the time of Mandeville (1300-1372) is evident from a quotation from his "travels."

"Be alle that contree growe the gode gyngevere (ginger), and therefore thidre gon the Marchauntes for Spicerye."

Green ginger pickled in sugar was highly prized during the middle ages. There are a number of beverages which contain ginger. Gingerade is water charged with carbonic acid gas and flavored with ginger, being almost identical with ginger-pop.

Ginger-beer is prepared by fermenting cream-of-tartar, ginger, and sugar with yeast and water. Ginger-ale is supposed to be identical with ginger-beer. These ginger drinks are all refreshing, but I believe my readers will agree that there is usually too much ginger present; the hot, burning sensation in the mouth is not very pleasant. It may be that the trouble lies in taking too much of the drink at a time.

In my estimation ginger as used by the baker is most appreciated and here again I believe my readers will agree with me. Who has not heard of ginger-bread? This sweet cake flavored with ginger is not by any means of recent origin. The great English bard Chaucer sang its praises long ago (1328-1400):

> "They fette him first the sweete wyn,
> And mede eek in a maselyn,
> And roial spicerye
> Of *ginge breed* that was full fyn."

Shakespeare also must have valued this bread very highly, for in the play, "Love's Labor Lost," he says:

"An I had but one penny in the world thou shouldst have it to buy *ginger-bread*."

Ginger-bread is often made into fanciful shapes. Cats, dogs, horses, elephants and men are cut out of the rolled dough and then baked. Many of my readers are perhaps familiar with some of the beautiful playtime songs of Alice Riley and Jessie Gaynor.

The following are the words of one of these songs, entitled, "The Ginger-bread Man." It describes the ginger-bread man very beautifully in the first verse. His awful fate, evidently in the hands of a small cannibal, is very graphically described in the second verse. I regret being wholly unable to supply the music. Here are the words by Alice Riley:

"Oh the ginger-bread man, the ginger-bread man,
The round little, brown little ginger-bread man,
He has sugary eyes and a sugary nose,
And he's sweet from his crown to his sugary toes,
Is this dear little, queer little ginger-bread man,
This dear little ginger-bread man.

"Oh the ginger-bread man, the ginger-bread man,
The poor little, sad little ginger-bread man,
For he lost his poor arms, and he lost both his feet,
And he lost his poor head, it was so good to eat,
And his vest buttons tasted uncommonly sweet,
Ah, poor little ginger-bread man."

Gingersnaps are very much liked by many. I used to demolish them by the pound until someone whispered in my ear that "bad eggs were used in making them." Since then my appetite for gingersnaps has lessened. I hope what that man said is not true. Gingernut is another cake containing ginger and sweetened with molasses.

At the present time ginger is not very extensively used as a

medicine. The powder or tincture is effective in some forms of indigestion. It is used to correct a bad breath, in tooth-ache, as a gargle and mouth-wash, in colic, and in dysentery. In a German work on pharmacy I find that it is recommended in catarrh of the stomach and for "Katzenjammer." It will not be necessary to explain Katzenjammer means.

SAP ACTION

FRED. A. WATT

IN order to understand this subject we must first ascertain the conditions under which sap is first produced, what it is, and how it circulates.

To do this we must first know something of the structure of those parts of the tree which serve as channels, or ducts, and those other parts which gather the sap and dispose of the waste after it has completed its mission.

To begin with, the tree is composed of small structures, too small for the naked eye to distinguish. Each structure is, at least for a time, a whole in itself, containing solid, semi-solid, and fluid parts which differ in their chemical nature. These structures are the cells, and when a large number of them are united in close contact they form a cellular tissue through which the sap passes from the roots to the leaves, and from the leaves to the growing parts of the young tree, or shoot.

This cellular tissue is superseded by another tissue which is much stronger and which takes up the work of the cellular tissue, when the tree becomes too large to be supported by the weaker form. It is more solidly formed and is composed of

elongated cells which are joined together in a series with their ends overlapping. This is known as woody fiber. The cellular tissue now exists in the tree stem only in the pith, and in the medullary rays which we see in the grain of any hard wood, radiating from the pith.

With the statement, then, that these tissues form the timber, and that the bark and roots only present a modification of the same structures, we will pass to the tree as we see it with the naked eye.

If we saw the trunk of a tree, of any considerable size, squarely in two, we find three forms which differ in solidity, rigidity, and appearance; namely, the heart-wood, sap-wood, and bark. The heart-wood is the firm, solid wood surrounding the center of the tree, the sap-wood is the softer wood outside the heart-wood, while the bark forms the skin or outer covering for the whole.

Trees grow from the center outward, hence the present sap-wood will in time become heart-wood and be covered by a new layer of sap-wood, and the present heart-wood is simply sap-wood which has become solidified by the deposit within its tissues of resinous and other matter secreted by the tree. It is now useless for sap-carrying purposes and seems to exercise only the function of supporting the tree in its position. It is through the outer, younger layer or sap-wood that the sap ascends.

Now, if we examine the end of our stick more closely we see a series of rings, clearly marked, circling from the center of the tree and ranging in size from the tiny one which encloses the

pith, to the large one which forms the outer surface next to the bark. They are caused by a constant annual deposit and outward growth, by which a layer is added to the outer surface of the sap-wood each season. Hence, by counting these we may determine the age of the tree. Less distinct rings may appear but they will not deceive us as we know that they are caused by a cessation of growth, which may have been caused by drouth.

As a general rule these rings are more distinct in trees inhabiting a climate where vegetation is entirely suspended by the cold after each layer is formed. In warmer regions they are not so distinct. This is especially interesting when we study fossils of trees which in many cases show a great difference in climatic conditions in the early ages from those we have at the present time.

The layers of bark are much thinner than those of the wood and are not so readily distinguished. They are formed from the interior so that the oldest are on the outside. The older ones fall off, however, so that we cannot trace as many rings in the bark as we can in the wood, although one is formed in each for every season that the tree lives.

The roots of the tree spread out underground and are the agents through which the tree derives most of the moisture so necessary to its growth. They absorb moisture only at their extremities and usually spread to just such an extent that the water which falls off the outer branches of a tree during a rain, falls exactly where the tender rootlets can gather it up at once and

hurry it back up the trunk of the tree. In ground that is springy, or naturally moist, the roots do not depend so much on the rainfall but reach out after moisture wherever it exists in the soil.

Spring seems to give a new impulse to life, especially to vegetable life, which always responds promptly to the genial rays of the sun. During the winter, in our climate, the cells which form our trees are contracted by the cold and when the warm days cause them to resume their natural size, a small vacuum is formed in each cell, which the first warm days proceed to enlarge by thawing only the trunk and branches of the tree, leaving the roots below embedded in frozen soil from which but little moisture can be drawn, while evaporation draws moisture from the trunk and branches with irresistible force. A warm rain now comes, thaws out the soil, and sets the juices therein contained in motion. An immediate rush of sap up the trunk of the tree is the result. It clears out the pores or channels, as a spring freshet clears out the water courses, it rushes into the branches, and the branches rejoice and put on their livery of green; it rushes out through the porous surface of the limbs and rises in the air in the form of vapor, while that which does not escape becomes charged with life and returns down a devious pathway and lays the foundation for another season's growth.

But why should the sap ascend the tree?

This is only one of many questions that the tree will not answer and no one else ever has answered. If we take a strip of blotting-paper and insert one end of it in an ink-well, the ink immediately

begins to climb up the blotting-paper by means of the force known as capillary attraction. Here, says the seeker for truth, is the reason for the ascent of sap, and many profound authors have agreed that he is right. Others claim, however, that he is wrong, while still others think he is only partly wrong and that this force has something to do with it. If we cut the roots from a tree and insert the stem in water we will soon find that this force is not the sole cause for the ascent of sap. Another student has made experiments with the force called diffusion, and claims that this explains the rise of sap to such remarkable heights; but diffusion does not work fast enough and hence must be thrown aside. Another finds that water is imbibed through fine porous substances with great force and that air can thus be compressed to several atmospheres, and this force is affirmed to be the one at work in our trees. But the fact that the amputation of the leaves and branches checks the ascent is brought forward and this theory falls to the ground. The fact that liquid films have a tendency to expand rapidly on wetable surfaces was next advanced, but the objection to the first theory met it at once.

Another interesting theory is now brought forward and has the advantage of practical demonstration, that is, an artificial model was made through which water ascended. It is based on the principle that water will pass through moist films that air will not penetrate, on the fact that evaporation takes place under right conditions with force enough to cause something of a vacuum, and also on the elasticity of the cells.

The model was constructed of glass tubes, closed at one end with a piece of bladder, and joined together in series by means of thick-walled caoutchouc tubing; the top which represented a leaf was a funnel closed by a bladder. This artificial cell chain was filled with water, mixed with carbolic acid to keep the pores from clogging, and was set up with its base immersed. The fluid evaporated through the membrane at the top of the funnel, which drew up more from the cells below, the space so caused being continually filled from the base. This is an interesting experiment and is said to solve the question, but it is open to the same objection, that a tree will not absorb fluid and carry it for any length of time after the roots are cut off. I regard it, however as a long stride in the right direction.

To what source, then, must we look for an explanation of this process?

I think it is a fact that the small, new root-fibers imbibe fluid with considerable force, but it is undoubtedly a fact that they soon lose this force when deprived of the leaves; that the leaves with the aid of evaporation, exert a great force, which the above experiment plainly indicates; and I cannot consistently dismiss the idea that capillary attraction has something to do with it. If we also add to this the theory that the swaying of the stems and branches by the wind is continually changing the shape and size of the cells and is thus driving the juices wherever an opening will allow them to travel, thus bringing the elasticity of the tree to our aid, we have again advanced.

But the principle of life is not discovered. Whenever it is we may find it to be a force much greater than any we have so far examined, and which may even cause the overthrow of all theories heretofore advanced.

EMERSON AND THE WOODPECKER STORY

NO squirrel works harder at his pine-nut harvest than the carpenter woodpeckers in autumn at their acorn harvest, says John Muir in the December *Atlantic*, drilling holes in the thick, corky bark of the yellow pine and incense cedar, in which to store the crop for winter use; a hole for each acorn so nicely adjusted as to size that when the acorn, point fore-most, is driven in, it fits so well that it cannot be drawn out without digging around it. Each acorn is thus carefully stored in a dry bin, perfectly protected from the weather, a most laborious method of stowing away a crop, a granary for each kernel. Yet they never seem to weary at the work, but go on so diligently they seem determined that every acorn in the grove shall be saved. They are never seen eating acorns at the time they are storing them, and it is commonly believed that they never eat them or intend to eat them, but that the wise birds store them and protect them solely for the sake of the worms they are supposed to contain. And because these worms are too small for use at the time the acorns drop, they are shut up like lean calves and steers, each in a separate stall, with abundance of food to grow big and fat by the time they will be the most wanted, that is, in winter, when insects are scarce and stall-fed worms most valuable. So these woodpeckers

are supposed to be a sort of cattle-raiser, each with a drove of thousands, rivaling the ants that raise grain and keep herds of plant lice for milk cows. Needless to say, the story is not true, though some naturalists even believe it. When Emerson was in the park, having heard the worm story, and seen the great pines plugged full of acorns, he asked (just to pump me, I suppose): "Why do woodpeckers take the trouble to put acorns into the bark of the trees?" "For the same reason," I replied, "that bees store honey and squirrels nuts." "But they tell me, Mr. Muir, that woodpeckers don't eat acorns." "Yes they do," I said. "I have seen them eating them. During snowstorms they seem to eat little besides acorns. I have repeatedly interrupted them at their meals, and seen the perfectly sound, half-eaten acorns. They eat them in the shell as some people eat eggs." "But what about the worms?" "I suppose," I said, "that when they come to a wormy one they eat both worm and acorn. Anyhow, they eat the sound ones when they can't find anything they like better, and from the time they store them until they are used they guard them, and woe to the squirrel or jay caught stealing."

THE CRAB-EATING OPOSSUM

THE crab-eating opossum (*Philander philander*) is one of the largest of the family. The body is nine and one-half inches long, and the tail nearly thirteen inches. It has a wide range, extending throughout all of tropical America. It is numerous in the woods of Brazil, preferring the proximity of swamps, which furnish it with crabs. It lives almost exclusively in trees, and descends to the ground only when it wishes to forage.

While it proceeds slowly and awkwardly on the ground, its prehensile tail enables it to climb trees with some facility. This opossum readily entraps smaller mammals, reptiles, and insects, and especially crabs, which are its favorite food. It preys upon birds and their nests, but it also eats fruit, and is said to visit poultry yards and to cause great devastation among chickens and pigeons.

The young of the crab-eating opossum differ in color from the old animals. They are completely naked at birth, but when they are sufficiently developed to leave the pouch, they grow a short, silky fur of a shining nut-brown color, which gradually deepens into the dark brownish-black color of maturity. All observers agree that the little creatures escape from the pouch and, moving around and upon the mother's body, afford a charming spectacle. The pouch is formed by two folds of skin, which are laid over the unformed young attached to the mammae.

The opossum is extensively hunted on account of the havoc it works among poultry.

The negroes are its enemies, and kill it whenever and wherever they can. The flesh is said to be unpalatable to most white persons, for two glands impart a very strong and repellent odor of garlic to it, but the negroes like it, and the flesh repays them for the trouble of the pursuit. The opossum, however, is not easily killed, and resorts to dissimulation when hard pressed, rolls up like a ball, and feigns to be dead. To anyone not acquainted with its habits, the open jaws, the extended tongue, the dimmed eyes would be ample confirmation of it, but the experienced observer knows that it is only "'possuming," and that as soon as the enemy withdraws it will gradually get on its legs and make for the woods.

It is said that the opossum was formerly found in Europe, but now only inhabits America. Nearly all of the species live in the forest or in the underbrush, making their homes in hollow trees, holes in the ground, among thick grass and in bushes. All are nocturnal in their habits and lead a solitary, roving life. The opossum lives with its mate only during the pairing time. It has no fixed habitation. In captivity it is the least interesting of animals. Rolled up and motionless, it lies all day, and only when provoked does it make the slightest movement. It opens its mouth as wide as possible, and for as long a time as one stands before it, as if it suffered from lockjaw.

The opossum can hardly be classed among the game animals of America, yet its pursuit in the South in old plantation days

used to afford the staple amusement for the dusky toilers of the cotton states. It was the custom, as often as the late fall days brought with them the ripened fruit and golden grain, for the dark population of the plantation, sometimes accompanied by young "massa," to have a grand 'possum hunt *a la mode*. We would describe the method of taking it, were it the policy of this magazine to show approval of a most cruel practice. Happily the custom, through change of circumstances, has fallen into disuse.

The specimen of this interesting animal which we present in this number of Birds and All Nature was captured, with its mother and five young ones, in a car load of bananas, having traveled all the way from the tropics to Chicago in a crate of the fruit. The mother and young were kept alive by eating the bananas, another proof that the crab-eating opossum does not feed exclusively upon animal food.

WASHINGTON AND LINCOLN

EMILY C. THOMPSON

IT is natural that at this time our thoughts should turn toward two of our great national heroes. This month is to us not merely the month of February, marking one of the twelve divisions of our calendar year, but it is a continuous memorial of two of our revered statesmen. We read all we can about our glorified dead, we search the words spoken by them, we visit the places where they toiled for us, and we scan even their homes trying to form a picture of their lives. We do even more. We presume to imagine their thoughts and conjure up the very ideas which might have occurred to them as they stood in these spots now hallowed by memories of them.

It is a fascinating occupation to fathom the characters of truly great men and contemplate their attitude toward various subjects. Sometimes mere conjectures are the fruit of our toil. At other times sure conclusions are reached from facts which are brought to light. Stories galore are told of both Lincoln and Washington, which help us more vividly to picture their natures. The question in which we are interested could easily be answered if we knew these men, but still as we are acquainted with the manifestations

of their characteristics we can answer it almost as satisfactorily. Did Lincoln and Washington love nature? Could they appreciate her beauties, and did they evince an interest in her creations?

Lincoln in his log-cabin home, splitting rails, working on the farm, hunting coons, driving the horses and cattle, must have found a glorious opportunity to become acquainted with this great mother of ours. The son of a pioneer who, with his great covered wagon, cattle, family, and household belongings, wanders over the country, whose only neighbors for hundreds of miles are the birds in the woods, the rabbits in the field, and the fish in the stream, the son of such a man certainly sees nature as few of our city-bred, World's Fair, Paris Exposition young people, can imagine it. Lincoln was content with these, his neighbors. Never do we hear sighs from him and wishes that his lot might be exchanged for that of another, even if his lot was toilsome and lonely. Who can tell but he thus imbibed his love for pure freedom undefiled and his lofty conceptions of this life in its relation to this world and something beyond?

We cannot doubt that the great, tall, clumsy lad had a real love in his heart for the little feathered and furry friends about him, and not simply a love for the beautiful ones, but what is far higher a feeling of sympathy even for the ugly and a genuine tender solicitude for all.

Even when the youth became a man perplexed by business and political problems his nature remained unaltered. Once when a party of his friends on a judicial circuit stopped to water their

horses, Lincoln was not there. His companion on the way was asked of his whereabouts. He replied that the last he had seen of Lincoln he was hunting around for a bird's nest, two of the former occupants of which he held in his hand. The wind had blown the tiny nestlings from their snug little home and the greathearted man was trying to find the nest for the wee, helpless chirpers. The same great heart which felt the human cry of pain as keenly as the bewildered cry of the little birds gave its last throb to restore little black nestlings to the warm comfort of free homes protected by law.

Конец ознакомительного фрагмента.