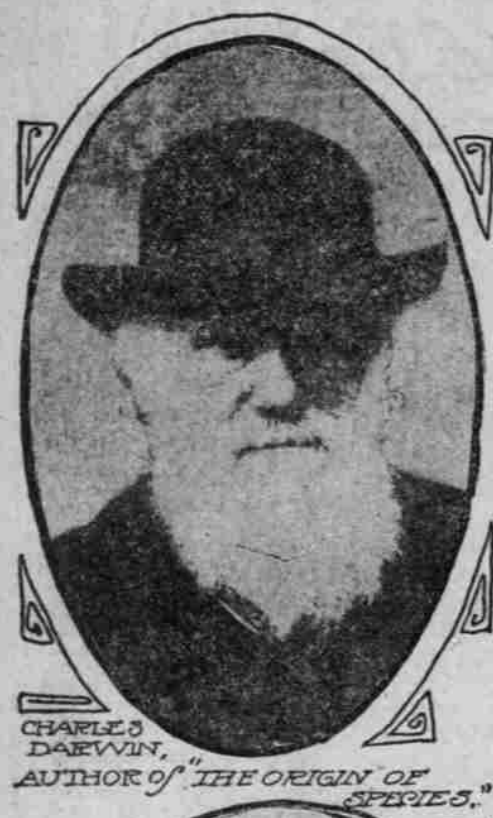


ARE FLOWERS SENSITIVE BEINGS?



CHARLES DARWIN, AUTHOR OF "THE ORIGIN OF SPECIES."



CARD TEASEL OR VENUS CUP A CURIOUSLY INTELLIGENT INSECTEVOUS PLANT

Lovers of flowers welcome the assertion by Francis Darwin recently that plants having consciousness and memory and being sensitive to touch must be classed as animals.

It was no unimportant occasion that the son of Charles Darwin, author of the "Origin of Species," chose for his remarkable deliverance, Mr. Darwin, a foremost botanist, delivered the presidential address at the opening of the British Association at Dublin. Those to whom he spoke represented the pick of the scientists of the United Kingdom. Before an audience so august it was essential that what he had to say should be well grounded in fact. Necessarily it provoked some discussion and the revolutionary could hardly have escaped doing so, but the sentiment of the convention was that

Mr. Darwin had established a remarkable case for plant life.

Mr. Darwin explained he spoke for the doctrine of the inheritance of an acquired character. Plants must have life because they responded to touch. He detailed many experiments to show that plants had memories, could develop habits and have their moods just like human beings or animals.

He went so far as to argue that in every plant there was something very similar to the nervous system of an animal, and that plants were quite as sensitive to certain influences as animals, and had the same capacity for telegraphing impressions from one part of their organism to another.

Growth, even, the speaker argued, is a sort of habit made possible by memory in the cells, and he contended that this growth in plants could be altered by a change in surroundings



FRANCIS DARWIN, WHO CLAIMS THAT PLANTS ARE BEINGS

where different influences would be brought to bear.

Professor Darwin found a prompt supporter in Professor Wager, who in the second session of the association

proved that plants can see as well as think.

The professor startled the gathering of scientists by exhibiting photographs taken through lenses formed by the "eyes of plants." He showed that the

PROFESSOR FRANCIS DARWIN HOLDS TO THAT THEORY AND OFFERS SCIENTIFIC PROOF TO FELLOW SCIENTISTS



SENSITIVE PLANT

outer skins of many leaves are in fact lenses, much like the eyes of many insects, and that they are as capable of forming clear images of surrounding objects. This, he showed, is the case with most leaves, but especially with those of plants that grow in the shade. These lenses are so good and focus the light that falls on them so carefully that photographs can be taken by means of them.

Professor Wager has taken a great many of these photographs by plant eyes, and he showed some of the more remarkable. They included the reproductions of photographs of Professors Darwin and Huxley, in which the features were distinct and unmistakable, as well as direct photographs of landscapes and people. Even colored photographs were exhibited, and these, like the rest, were remarkably clearly defined.

Not only do these plant eyes see well, but the rays of light which by means of them are focused on the interior of the leaf are carried to the brain of the plant and effect its subsequent movements.

It has long been known that the leaves of plants move so that they can get the maximum of light, and the process is almost identical with the movements of animals, but this close

analysis of the eyes in plants proves them to be highly developed organs.

The ideas of Professors Darwin and Wager at once lifted flowers into the place of importance that in the minds of the association, and the ideas advanced there have had the effect of starting researches all over the world to prove the truth or the falsity of the thought that in the essentials plants must be thought of as having all the instincts of animal life.

Investigators say that no man can work among flowers without early finding out that they have memories and nerves. If they had lacked these, argue the supporters of the Darwin idea, flowers would have remained fixed through all ages like rocks, for instance, which show no change in thousands of years. But plants, like animals, change, develop, produce new species.

In every state of the country it is possible to find flowers that bear out the ideas of Darwin.

He speaks of some plants having their heads and being stung into irritability just like a human being. The Venus fly trap is an example of this. It closes down on the encroaching insect and makes a prisoner of it, and the corresponding white, the movements of animals, but this close

There are many flesh-consuming or carnivorous plants.

Moreover the sensitive plants of the pea family exhibit irritable moods by contact with foreign objects, the influence of light and dark and of fluctuations in temperature.

The wood sorrels and mimosa of Brazil and Mexico can say almost as plainly as if they had voices, "I don't want your company."

Examples might be multiplied indefinitely.

Unless there is consciousness or memory why is it that the mechanism of the common orchid or milk-weed is adjusted with mechanism so exactly suited to the length of the bee's tongue or the butterfly's leg.

The sticky calices or protective hairs of many flowers have their definite purpose, and the flower knows by instinct when the battery for protection should be in use.

Then there is the marvelous sundew that not only catches insects, but actually secretes the gastric juice to digest them. It is hard to see how more nearly anything could be allied to animal life than a plant with faculties like this.

Certainly there is as much evidence of conscious life in this creation as in the mollusc of the sea, whose animal life no one disputes.

The bladderwort also gives the halt to those who would seek to dismiss lightly the ideas of this foremost English scientist, who is maintaining the traditions of a great name by his original researches.

The bladderwort works with the most deft cruelty. It not only has an inflated trap designed to catch tiny insects, but it also knows when to close the door and transform itself into a cell. The pitcher plant, which makes soup of its guests, is another instance of the cunning of a plant, and some of them very cruel ones.

How marvelously has the plant decided which kind of guest it prefers! Certain flowers welcome the bee, others the butterfly, and others still lean to the moth, or the humming bird. The guest that is welcome is wonderfully catered to in these tiny floral restaurants, but the pillerers are relentlessly punished, and are soon taught to understand that no welcome awaits, from which fact proceeds the known scientific truth that various insects have their loyalties to certain flowers and will not go near others.

If in nothing else than the endless devices of the more ambitious flowers to save their species from degeneracy by close breeding through their own pollen, the evidence of something closely akin to mind is proved.

There are criminals in plant life just as among humans, and there is also types of nobility. The dodder, Indian pipe, broom rape and beech drops are low types, because they exist not through their own industry, but by taking the life from other industrious plants.

The skunk cabbage, purple trillium and carnation flower are in disgrace, and they emit a fetid odor for centuries from the rich fragrance of white or yellow night bloomers, for instance.

One great scholar has said that the flower does not waste its sweetness on the desert air, and is not simply a passive thing to be admired casually by human eyes, but that it is a sentient being, with joys and tragedies, like every other living, thinking thing of nature's creation. It is compelled to act intelligently through the same strong desires that animate human-kind, and is endeavoring to outgrow its lower, dumber, only in degree, but not in kind, from those that mark the animal creation.

The flower is indebted for much to the insect, and in many cases it shows its gratitude. The hairs in the wild geranium protect its nectar from the rain, and most flowers which secrete nectar have what are called "nectar guides," a long, bright color, heavy veining or some other indicator.

Those who study flowers will find many arguments to bring to the support of a new theory by another great Darwin.

SAVE CHILDREN FROM IMPURE MILK

Nathan Straus Declares That Pasteurizing Has Lessened the Death Rate in Several European Cities.

BY NATHAN STRAUS.

Neither war, nor pestilence, nor famine claim as many victims as impure milk. It is the most terrible foe of humanity, all the more because it gives no outward sign of the danger.

After an absence of 14 months, which I have devoted to the pure milk propaganda in Europe, I am pleased to learn on my return that my efforts in the United States have borne good fruit. I refer to an ordinance of the Chicago city government requiring the pasteurization of all milk from cattle not proven free from tuberculosis. For the adoption of this measure Health Commissioner Evans deserves great credit.

I have also learned of the work of the New York milk committee, which has taken up the question in an experimental way for scientific purposes. While the amount they are distributing—a thousand bottles a day—cannot make an appreciable reduction in the death rate in a child population like that of New York city, still it proves that this serious question of the milk supply is receiving the earnest consideration which it demands.

The tuberculosis congress in Washington, to be held this month, is another step forward in the fight for pure milk. For the white plague is nowadays agreed by scientists to be caused mainly by transmission of the tubercular germs from cow to man. I have prepared a model plant which I will exhibit at this congress to demonstrate my method of pasteurization.

I consider pasteurization of the milk supply—and the great majority of the world agrees with me—one of the most important weapons in fighting the white plague.

If farmers, dairymen and the public at large were all acquainted with the facts in regard to the relation of the milk supply to the public health, there would be little need for any institutional or legislative measures of relief.

But unfortunately there still exists great ignorance of the danger that lurks

in milk, although infected milk has become one of the most fruitful sources of disease.

When I began my work 16 years ago, little or nothing was known of this danger. But hand in hand with my educational measures of erecting pasteurization plants and of distributing pasteurized milk, scientists have been asking whether it was not high time to protect the public from these death-dealing germs. I had the satisfaction of seeing the death rate in New York City more than a third reduced between the year 1903, when I began my work, and 1907, when I left for Europe.

I went directly to Brussels to attend the Second International Congress des Gouttes de Lait, where physicians and scientists from the entire civilized world assembled.

I found then that in Europe even less was known of the danger of infected milk, and less attention had been paid to measures of relief, than in America. At this congress I began my European crusade by moving a resolution advising against the use of raw milk for infant feeding. This resolution was unanimously carried.

Since the adjournment of the congress my time has been devoted to advocating pasteurization in various parts of Europe.

For purposes of education I established a milk laboratory in Heidelberg, and supplied with pasteurized milk the Children's Hospital of the University, as well as several charitable institutions.

In Sandhausen, a village in the district of Heidelberg, I repeated an experiment which I had so successfully made in Randall's Island, in New York, many years before.

In this German village of 400 inhabitants the death rate among children was 46 per 100. I established a pasteurization plant there. The same milk as before was used; it was simply pasteurized. Without any other change in the diet of the children, the death rate began immediately to fall. Here is a telegram which I received from the burgomaster of the village before I sailed:

Nathan Straus, Passenger Cedric, Queenstown: Since February 1, 1908 there died in Sandhausen eleven children under two years of age, against twenty-five for the corre-

sponding months in 1907 and against thirty-two averages for the five preceding years. We use same milk as before, only pasteurized. (Signed) FRANZ HAMBRECHT, Burgemeister.

From Heidelberg I extended my activity to other cities, beginning in Karlsruhe. There I established a pasteurization plant under the auspices of the Dowager Grand Duchess Luise of Baden. I also presented a plant to Dublin, Ireland, under the Vigierine Countess of Aberdeen. And let me say, right here, that a great deal of my European success is due to the active and moral support of these two good and noble women.

I also erected plants in Munich, under the patronage of Princess Anulf of Bavaria, and in Liverpool, under the Office of Health, Dr. H. W. Hope.

I made exhibitions which practically demonstrated the need and the benefits of pasteurization in Frankfurt, Berlin and Vienna. Physicians, men of science, philanthropists, government and health officials, and hosts of plain good men and women who have the welfare of humanity at heart, visited these exhibitions and were unanimous in their praise of my work and my success.

The direct result of these exhibitions has been the spread of the knowledge of pasteurization and its benefits. And the outcome will no doubt be the general introduction of pasteurization in these cities and countries.

Baron von Bienerth, Minister of the Interior of Austria, after visiting my exhibit in Vienna, promised to introduce the pasteurization of milk throughout his country. To give impetus to the new work, I offered him a pasteurization plant, which he accepted for the institution called "Das Kind." This institution was founded to commemorate the sixtieth jubilee of Emperor Franz Joseph's reign.

As the president of the Women's National Health Association of Ireland, Lady Aberdeen will exhibit in Washington at the tuberculosis congress, in competition for the prize offered to the organization which has accomplished most during the last three years in the fight against tuberculosis.

Lady Aberdeen's secretary accompanied me to New York to study my method of pasteurization at my new laboratory. She will report to Lady Aberdeen with the

object of copying the work in Dublin.

The ball has been started rolling on both sides of the Atlantic, and the work is getting to dimensions which put it beyond the sphere of one man.

I owe a debt of thanks to the European press for the extraordinarily courteous treatment I received at their hands, during the time in coming when no human life will be uselessly sacrificed. Typhoid fever, diphtheria and scarlet fever count their annual victims by thousands. Summer complaint counts its child victims by tens of thousands. Let us hope that this useless slaughter will be stopped. But let us not only hope.

When we know that the majority of these deaths are caused by infection through milk, let us take the only practical means of rendering milk safe.

The method of pasteurization is simply to heat the milk to 157 degrees Fahrenheit, thereby killing the germs of disease. It is not a patented process. It can be done by any milk dealer or by any mother in her kitchen.

Milinery Points.

Vogue.

Large rosettes of pouts or crosses accented in white and colors are the latest novelty, their centers are usually filled with a large, fancy bobbin, or a soft ribbon or galloon choux.

Silk roses are used in abundance for decorating the new directors' hats; they come in all natural, and the newest fancy colors, also in exquisite decolored shades.

Fancy galloons of flax net, laid over silver and gold banding, and soutache embroidered in a scroll design, are the success of the season and make stunning crown bands.

Metallic-silver and gold-tissues are most distinguished fabrics for facing hat brims.

A novelty in flowers is the cella lily, made of velvet in black, white and yellow, and accompanied by large velvet leaves, speckled in green and yellowish white.

The "pansy" (panny) is a clever new style motor hat, and sure to be a success. It shows a tall, slender crown and a dome shaped brim, short at the back, and dented as to slightly resemble a pansy. Extremely chic it is when made of silbino plating and faced with taffeta in a contrasting color.

MEN'S ATTIRE FOR AUTUMN WEATHER

What Well-Dressed Men in New York Are Wearing With Good Taste.

THE half season just beginning is as inspiring to the man who takes an interest in being smartly dressed as the height of the Winter or the Summer season. And perhaps the Autumn days offer him better opportunities than any other time, says the New York Sun.

The fashions for men who spend the Autumn or a part of it in the country follow in their color scheme the designs of nature. The blue serge that seems an appropriate feature of life by the sea, the corresponding white, which is now disappearing to make way for clothes and hues more suited to Fall, flannels are also out of the mode for weeks to be passed inland or in the mountains.

Scotch tweeds and homespuns in shades of brown, dark tan and warm grays mixed with half stripes of red or brown are the materials and colors that take the place of flannels which have served for smart Summer wear. The linen waistcoat is also a thing of the past, but there are smart substitutes in checked and striped flannels.

The vogue of the flannel shirt is also greatest at this time. Knickerbockers are more in vogue than they have been in any other, and they have never been more in vogue than they are just now.

The Autumn outfit that to my mind is the best I have turned out, said the tailor in the Venetian palace just off Fifth avenue, "consisted of only four suits, but with the wardrobe that the well-dressed man always has, the owner will be able to look as smart as he could desire during the days he spends out of town.

"Perhaps the most modish of all the garments was a cutaway of dark reddish brown Scotch tweed. There was an almost invisible herringbone stripe in the rough goods. The coat, not being intended for formal wear, but suitable to wear even for riding, had skirts of medium length, and they were finished with two pockets covered with a narrow flap. The coat had three buttons and was cut low enough in the neck to show the top of the waistcoat.

"There was absolutely no extraneous fluffiness about the coat except the three buttons which closed the sleeve at the cuff. This season will mark the difference between the ready-made and the

custom tailors in the point of simplicity, and what we turn out is to be free from frills and fluff.

The side pocket had no flap. It was not even applied with strapped seams, but put in the side body as in any other coat.

"The waistcoat had no collar and the trousers were finished with as much freedom from extraneous ornament. They were of moderate width, as the trousers will be this Winter. The waistcoat scarcely counts, as there are always sporting waistcoats for these Fall suits.

"The beauty of this suit lay in its material and cut. The warm brown tweed was just the shade for this season of the year, and the suit fitting the figure loosely, touching at no point and nowhere outlining the curves of the body, was made for a gentleman's wear and proclaimed the fact.

"The sack suit was also of brown, and the finish was smooth. The check was more plainly visible in this material than the herringbone stripe in the other, and the same simplicity was observed in the cut. There were no cuffs on the sleeves, only the three buttons, but three real buttons that could be opened and closed.

"Scotch tweed was the material used for the Norfolk jacket, which is this year enjoying a period of special favor. For several years there were few of these suits, and it was announced that the Norfolk jacket was out of style.

"One might as well say that coats are out of style. The Norfolk will always be in style for the purpose it was intended and in England it has never been out of fashion.

"This coat is worn in the best style with knickerbockers, although I always make trousers as well in case the suit is worn for lounging or walking. The knickerbockers make with a Norfolk an excellent suit for shooting. This customer of mine wanted a shooting suit without a coat. The side pocket is a more practical character, and I turned him out one of whipcord, which cannot be worn at any other time.

"It is also a modified Norfolk so far as the jacket is concerned. The knickerbockers are in long continuations that make long stockings unnecessary and really require no more than shoes, and high spots, although puttees are not un-

comfortable with them. This Norfolk is, of course, made with a belt for cartridges and other ammunition.

"The shooting suit is not necessary for any man's wardrobe unless he spends a great deal of time in shooting, as this customer of mine does. But for all practical purposes the Norfolk suit will answer for shooting.

"A covert coat short enough to wear on horseback, which means that it should not go further than half an inch below the sack coat and should not fall so low as to show the putaways; a loose, loose Chesterfield of mixed tweed, which is the most useful coat a man may have nowadays, since it serves for many occasions, formal and informal, and an ulster for night and motor wear in the country make up all that one needs for protection out of doors.

"There are some changes in the detail of these Autumn suits. I no longer make knickerbockers for ordinary wear, for instance, with the continuation of tan cloth, which was the style for so long. When a customer wants knickerbockers made with continuations they are of the same color as the suit.

There are many details of dress that will add to the appropriateness of the material, such as the crocheted silk. There are colored scarves now in the shops in shades of dark purples and yellowish chocolates that are beautiful and especially suited to the Autumn days. The smartest of these are still made in crepe and the crocheted silks.

The crepe wears poorly but is late in style than the crocheted silk. Three or four wearings take the freshness out of the crepe ties that sell for from \$2 to \$4.

New this Autumn are the broad gray, crocheted silk ties to be tied in flax scarves. They are somewhat heavy, but come in very good colors for wear at this season.

Flannel shirts are perhaps the most distinctive feature of outing dress in cold weather. Some of them are made with such detail that they may easily be worn without a coat. The side pocket is applied, and the edge carefully finished with strapped seams. The double cuffs roll back and finish the sleeve.

They are in flannels of every hue, although solid pinks and blues, rather light in tone, are the most modish. With a Norfolk or sack suit they may be worn without a waistcoat.