

AUTUMN LEAVES.

Changes in Color Explained Scientifically by Professor MacDougal.

The casting of the leaf is not a sudden and quick response to any single change in environmental conditions but is brought about with a complex interplay of processes begun days or perhaps weeks before any external changes are to be seen says Prof. MacDougal, in Harper's. The leaf is rich in two classes of substances, one of which is of no further benefit to it, and another which it has constructed at great expense of energy, and which is in a form of the highest possible usefulness to the plant. To this class belongs the compounds in the protoplasm, the green color bodies, and whatever surplus food may not have been previously conveyed away. The substances which the plant must needs discard are in the form of nearly insoluble crystals and by remaining in position in the leaf drop with it to the ground and pass into that great complex laboratory of the soil where by slow methods of disintegration useful elements are set free and once again may be taken up by the tree and travel their devious course through root hairs, along the sinuous roots and up through million-celled columns of the trunk out through the twigs to the leaves once more.

The plastic substances within the leaf, which would be a loss to the plant if thrown away, undergo quite a different series of changes. These substances are in the extreme parts of the leaf, and to pass into the plant body must penetrate many hundreds of membranes of diffusion into the long conducting cells around the ribs or nerves and then down into the twigs and stems. The successful retreat of this great mass of valuable matter is not a simple problem. These substances contain nitrogen as a part of their compounds and as a consequence are very readily broken down when exposed to the sunlight. In the living normal leaf the green color forms a most effectual shield from the action of the sun, but when the retreat is begun one of the first steps results in the disintegration of the chlorophyll. This would allow the fierce rays of the September sun to strike directly through the broad expanses of the leaf, destroying all within, were not other means provided for protection. In the first place, when the chlorophyll breaks down among the resulting substances formed is cyanophyll (blue) which absorbs the sun's rays in the same general manner as the chlorophyll. In addition, the outer layers of cells of the leaf contain other pigments, some of which have been massed by the chlorophyll, and others which are formed as decomposition products, so that the leaf exhibits outwardly a gorgeous panoply of colors in reds, yellows and browns that make up the autumnal display.

From the wild riot of tints shown by a clump of trees or shrubs the erroneous impression might be gained that the colors are accidental in their occurrence. This is far from the case, however. The keynote of color in any species is constant, with minor and local variations. The birches are a golden yellow, oaks vary through yellow orange to reddish brown, the maple becomes a dark red, the tulip tree a light yellow, hawthorn and poison oak become violet, while the sumacs and vines take on a flaming scarlet. These colors exhibit some variation in accord with the character of the soil on which the plants stand.

CASTE IN INDIA.

A Member of the Pariahs has no Chance for Rising.

'In India all save the lowest caste what we call pariahs, can rise in the world, as we Western folk count rising. They can become as rich as they like; they can enter Government service, become merchants, lawyers, anything they please. But caste is a religious and social distinction, which is self-supporting, self-contained. A Brahman is always a Brahman, even if he be a servant. I remember one case where the rajah of a Hill state always salaamed to the servant of a friend of mine. The servant was of a higher position than the ruler of the land in which he served.'

'Then a member of the lowest caste, or pariah, has no chance of rising?'

'None as a Hindoo. If he becomes a Mohammedan—which only requires a repudiation of their creed before witnesses—he takes his position among his new coreligionists. Of course, to Hindoos he remains tabu, as all Mohammedans are, even of the highest rank. Theoretically, he would be. But not in marriage. He would find great difficulty in getting a wife of good class, no matter how rich he might be; for money and position count for little in India. The poorest and lowest intermarry with the richest, if they are of good caste. Of course, caste is essentially Hindoo, but in Punjab, which is largely Mohammedan, the exclusive feeling of caste extends to the latter, I remember, for instance, a Mohammedan nobleman of the highest rank, enormously wealthy, finding the greatest difficulty in securing a wife in what I may call his class, because his mother had not been of a re-



THE ACHING BACK.

MANY women have to do their own housework. The constant bending over—making beds, sweeping, ironing, sewing—comes hard on the kidneys; cramps and strains them. Backaches, sideaches, headaches follow.

DOAN'S KIDNEY PILLS

remedy all these things simply by making the kidneys resume healthy action.

Mrs. T. LANGDON, 202 Queen Street, Ottawa, Ont., says: "For two years I suffered greatly with pains in my back across the kidneys. They were very severe, and caused me great weakness so that at times I could not attend to my household duties. The medicines I took did me no good. From when I started taking Doan's Kidney Pills I experienced relief, and it took only one box to make the pains and aches all vanish."

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BE SURE YOU GET DOAN'S. THE ORIGINAL KIDNEY PILL.

Provisional.

The Syracuse Post prints a story containing an excellent hint, which fathers and mothers who have babies to name may well consider.

A girl baby was brought to a clergyman of Syracuse to be baptized. He asked the name of the baby.

'Dinah M.,' the father responded.

'But what does the M stand for?' asked the minister.

'Well, I don't know yet; it depends upon how she turns out.'

'How she turns out?' Why I do not understand you,' said the minister.

'Oh, if she turns out nice and sweet and handy about the house, like her mother, I shall call her Dinah May. But if she has a fiery temper and a bombshell disposition like mine, I shall call her Dinah Might.'

Bringers of Good News.

We all know what Shakespeare says about the first bringer of unwelcome news. On the other hand how thankful we are to be the first bringer of good news. Be sure there is never any "sullenbell" sound from his tongue thereafter. Not to our ears at any rate.

Why, only the other day, being among the docks, I happened upon the identical steamer that carried my wife and me on our wedding tour. She (the boat I mean) is getting old now, and I couldn't help noticing that some repairs and a coat of paint would have improved her looks; but there! explain it as you may, I stood on the dock one mortal hour feasting my eyes on the venerable craft, and letting my fancy dwell on the days of days when one other person and I crossed the sea on board of her, with Youth at the prow, and Happiness at the helm.

So it was with us all everywhere. The value and interest of things are largely determined by the principle of association. If I should, for example, come upon a paragraph in a certain paper to-morrow morning, saying that a distant and hitherto unknown relative had died and left me a large fortune, you can lay odds on one thing—I should subscribe for that paper the balance of my life; yes, even if it was dead opposed to my ideas on politics.

That's why I think Mr. Frederick Plank will always have a warm spot in his heart for the paper that brought good news to him, not about money, but something of greater importance.

'In August 1890,' he says I took a severe chill on the kidneys, and had excruciating pains at the loins and back. I soon began to feel weak and heavy, and had difficulty in getting about. My appetite was bad, and after meals I had fullness at the chest, and a horrible pain at the pit of my stomach.

'I had difficulty in passing the secretion from the kidneys, and often it was the color of blood. In a little time I came to be so weak I was obliged to give up my situation and was treated by a doctor in Bath. He said I had an acute attack of Bright's Disease. He gave me medicine, but it relieved me only for a time, and then I was as bad as ever.

'Now better, now worse, but never properly well, I continued until June of last year (1896), when I had to abandon my work entirely. My condition was now very serious, and I was so weak I had to sit in a chair all the day long, being unable to stand or walk.

'The secretion was now the color of ink, and mixed with sand, and I was in pain all over me. I wasted away, as you might say, to nothing, and no one thought I would get better. Then I had a Bath physician attending me, but got no better.

'In November (1896) I read in a paper, The Messenger of Health, of a case like mine being cured by Mother Siegel's Syrup. I got a bottle of this medicine from Mr. King, chemist, Tiverton, and after taking it experienced much relief. My appetite came back, food agreed with me, and I had less pain.

'I followed on with it, and soon all the pain at the kidneys left me, and the secretion was natural. When I had taken four bottles I was in sound health, and have since kept well. Beyond a doubt Mother Siegel's Syrup saved my life, and I wish others to know it. You may publish this statement and refer anyone to me. (Signed) Frederick Plank, 21, Brougham Hayes, Tiverton, Bath, April 6th, 1897.'

Surely in this case The Messenger of Health deserved its name, as it was indeed a messenger of health to Mr. Plank. Now, if the reader will ask his chemist for anyone of the multitude of certain little books that are scattered all over the country (free for the asking), he will learn exactly how and why Mr. Plank was cured by Mother Siegel's Syrup after all other medicines had proved so useless and disappointing; for a full explanation would be too long and complicated to give here. Yet the principle of it is plain and easy to understand.

Meanwhile, let us appreciate and encourage all bringers of good news—people and papers. No question but the page on which you read this will turn out to be a messenger of health to somebody.

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HE WAS FORGIVEN.

A Failure to Mail a Letter Brought a Snug Fortune.

Years ago a Cleveland man gave his wife a piece of what he supposed was worthless Missouri land, a tract which he had taken in settlement from a debtor. It was a 240 acre section and from year to year he sent the few dollars which were required for taxes. It hadn't been for this small outlay he might have forgotten all about it. The property had been put in his wife's name and a few weeks ago she was surprised to receive a letter from an attorney at Jefferson City making her an offer for the land. It was a long letter, in which the writer said he had found a man who would take the tract for the timber that was on it and was willing to give \$600 for the property. The lawyer went on to say that he considered it a very fair offer. Half the farm was swamp and the other half rock, and it was positively the first bona fide inquiry regarding the property that he had heard of. 'The man who makes the offer is an erratic and touchy sort of fellow,' wrote the lawyer, 'and I think it would be well to nail him before he changes his mind.'

The wife showed the letter to her husband, who shared her pleased surprise.

'That's pretty good,' he chuckled. 'I never expected to get the taxes back on it. It's just as bad as he says it is—half swamp and half rock. I had a man who was prospecting out that way go over and look at it. He said it was worth about \$2 an acre. Sit down and write the lawyer that you'll accept his offer and ask him to forward the papers at once.'

So the wife sat down and wrote the letter, and just as the husband was starting for the office in a great hurry—he always fancied he was late—she gave it to him to mail. He slipped it in his inside overcoat pocket, grasped his umbrella and was off.

Once or twice thereafter his wife alluded to the farm transaction and wondered when the papers would be along. The husband replied in an absent-minded way—he was full of engrossing business at the time—and when two weeks had elapsed they both began to think that the deal had fallen through.

One morning, just as the husband was starting for downtown, the postman brought a letter for the wife.

'Why, it is the Jefferson City postmark,' she cried. 'Let's see what he says.'

She tore the envelope open, hastily skimmed over a few lines, and then looked up with a little shriek.

'Read that, George! she cried.

And this is what George read:

'Dear Madam: Of course I knew what it meant when you failed to answer my proposition. You were investigating, and I don't blame you. I made my offer in the hope that you would snap at it, but it is evident you haven't snapped. I didn't care to put the offer any higher for fear of arousing your suspicions, and perhaps I got it too high as it was. Having made my little confession—your husband will tell you it was all a trick of the trade—I will come down to business. I represent a mining company, and we are developing a tract south of here and need your farm. We will give you \$20,000 cash for it. That is the limit we are willing to go. I will admit that there is another company in the same field, but I feel sure that your advice from here will convince you that the offer we make is a very liberal one. The moment we hear from you favorably the cash will be deposited to your credit here in the First National Bank. Kindly advise me as to your intentions at the earliest possible moment.'

The husband looked at the wife.

'Well, by George!' he said.

A wild light was in the wife's eye.

'What does this mean?' she cried.

George fumbled in his inside pocket.

'There,' he said, as he drew forth the letter which never went, 'that's what it means.'

'I'll have to forgive you this time,' she said.

'Try it again,' he cheerfully suggested.

'Accept the second offer, and after I send a telegram or two I can guarantee that it will go.'

'I'm afraid I can't trust you.'

'I'll carry it in my hand to the office.'

And so a bad and inexcusable failing was the means of putting a beautiful gilding on the coming Christmas day in that household.

What did he Mean?

An amusing anecdote at the expense of an excellent and necessary profession comes from Temple Bar.

A young doctor, a novice in his profession, who was also somewhat of a novice with the gun, was out after hare, and after he had missed several shots the old keeper said:

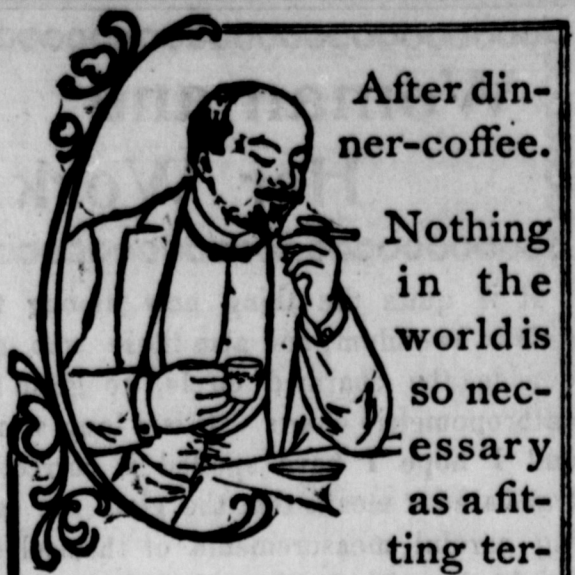
'Let me have a try. I'll doctor 'em.'

Another Mystery Explained.

Mr. Lynch and his friend were discussing family names and their history.

'How did your name originate?' asked the friend.

'Oh, probably one of my ancestors was of the grasping kind that you hear about so often. Somebody gave him an 'ynch,' and he took an 'L.'



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