

SCIENCE & PROGRESS

One Man's Work



LOUIS PASTEUR

Dumas wrote to Pasteur: "In the infinitely little of life you have discovered a third kingdom, to which belongs those beings that, with all the prerogatives of animal life, have no need of air to live, and find the heat they require in the chemical decompositions they provoke around them."

The record of his life labors fills many volumes. On his wedding morning he went to his laboratory to work, and forgot all about the greatest day of his life till he was sent for to take his part in the marriage services.

Pasteur's first important discovery was that there is a great difference between the molecular arrangement of mineral and crystalline substance and that of other matter. The former is symmetrical, the latter unsymmetrical.

Next he investigated fermentation and putrefaction. He upset all extant theories by proclaiming that these processes are produced by millions of living, moving organisms. He investigated especially the alcohol-producing yeast-plant.

This same marvelous Frenchman has set a record for good and all the fact that there is no such thing as spontaneous generation. There must be a pre-existent germ.

His latest researches have been made with hydrophobia in dogs. He keeps a hundred of these at a time in kennels, inoculating them with the cultivated and attenuated virus of rabies.

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its of the kind. Dr. Fleisch, of Vienna, is authority for the statement that doses of 1-15 to 1/2 of a grain of the hydrochlorate dissolved in water and administered hypodermically will cure a drunkard or opium eater in ten days.

Owing to the extraordinary demand for the drug it has risen to the fabulous price of \$300 an ounce, or even more. Worst of all, druggists are beginning to adulterate it, so that it does not always produce the effect expected.

Dr. Castaing gives in The New York Medical Journal the following method whereby every physician can prepare the medicine for himself from the leaves. These must be pure and fresh, with no brown spots upon them:

On one part (by weight) of coca leaves pour eight parts of boiling water, and let them steep for half an hour in a closed vessel in a water bath. Four the whole into a percolator, and when all the liquid part is strained off, continue the exhaustion of the leaves by pouring on them eight parts of alcohol at 85 degrees.

Mix the two liquors and precipitate them by means of acetate of lead; draw off with a siphon, and then add sulphate of sodium to remove the salts of lead. Filter, and evaporate at a gentle heat until the liquid has attained the consistence of sirup.

The Electric Locomotive

The problem of the electric locomotive has been successfully solved at Cleveland, O. A short line of street cars is there run by this motor. It has stood every test triumphantly.

The severest strain was endured during the late cold weather. A great snow storm visited Cleveland. The streets and tracks were piled high with snow, slush and sleet.

Plows were out, additional horses were brought, and men were shoveling on the tracks of the horse lines, and even then the cars were unable to make time.

But at the usual hour, as though nothing had happened, the little giant that propelled the electric car breasted the snow and ice, drove through it and rode over it triumphantly, without a pound of additional outside force from man, horse, plow or boy.

Next he investigated fermentation and putrefaction. He upset all extant theories by proclaiming that these processes are produced by millions of living, moving organisms.

He investigated especially the alcohol-producing yeast-plant. In brief, ferment is a living being, animal or vegetable, endowed with motion, and existing without air.

To apply this step to the propagation of contagious sicknesses was only one step more. The step was taken, and was the crowning triumph of Pasteur's busy life.

The germ theory of disease is now universally known. Pasteur inoculates men and animals for contagious diseases, produces a mild form of the sickness, and the creature escapes. Cattle are thus inoculated throughout France for the plague, and the mortality has been reduced to a tenth of what it was.

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FASHIONLETS.

Bonnets are worn at the theatre and at weddings.

Various shades of green will be fashionable for spring wear.

The Prince of Wales wears a white camelia in his buttonhole.

Colored stones for jewelry are now much worn, with fine effect.

Buttonhole and corsage bouquets are very large for full dress occasions.

Black astrakhan is more fashionable for fur trimming than any other.

English crape-stone jewelry is now the correct wear for women in mourning.

Among the new colors is "Alderny," which is the deepest shade of cream color.

There is a new ornamental asparagus plant which forms a misty and exquisite house decoration.

More trained and decollete dresses are worn this year than have appeared in any season past.

New letter paper and envelopes have borders imitating hem-stitching like that used on linen handkerchiefs.

Very pretty new ribbons have appeared, with a satin ground, upon which are velvet dots, diamonds and crescents.

Ladies who used to paint china are now hammering away upon brass and copper plates, making repousse work.

At many of the swell dinner parties and receptions in Washington and New York the china used is hired for the occasion.

For ballroom dresses comes soft misty tulle, delicately embroidered with silver and gold tinsel and floss silk in feather patterns.

Flowers were apparently never so much used in decoration, both of persons and houses, as they are this season. They are lavished in luxurious profusion.

Small, dim checks will be the mode for ladies' tailor-made cloth suits this spring. In some cases the check is mingled with plain cloth in a very effective costume.

At this time of year you can wear your long heavy cloak or your short tight-fitting, spring jacket, whichever you find more comfortable, and you will still be in fashion.

Wedding Outfit. The leading dry goods houses now have regularly what are called bridal departments.

In these all the lingerie required for a bride's trousseau may be bought ready made. Stitching on her wedding garments, gathering in a sweet thought or brodering a happy dream with each is no longer the fashion for a girl.

Life has too much crowded into it for that. The ready-made outfit can be bought in prices to suit all purchasers. In underwear it is no longer necessary to get enough of a supply to last a lifetime. Nothing is more absurd than to lumber one's self up with an immense quantity of clothes, as if, in marrying, a bride were going out of reach of civilization.

For inexpensive bridal outfits, anywhere from half a dozen to a dozen articles of each kind is quite sufficient. On asking for bridal sets of underwear, the purchaser will be shown boxes holding three pieces each, night gown, chemise and drawers, trimmed to match.

One set of fine muslin, trimmed with Torchon lace and tucks, comes at \$5.38. Another, with Mother Hubbard night gown and the trimming of Medici lace, is shown at \$5.30. The Medici lace is the latest fancy for underwear trimming. It wears as well as Torchon, and is richer looking and handsomer.

The fronts of chemises are now cut out in a deep square or V-shaped, and filled in with lace. The effect is very pretty. Beginning with the material and prices named, these sets of underwear run up into rich and elaborate Valenciennes lacework and linen, and cost as high as \$350 each.

There are handsome flannel skirts in all colors. Plain ones with hem and tucks cost about \$1.30. From this price range upward to \$5. For the latter price a prettily embroidered article is shown, made with a yoke and draw-string at the waist.

Elaborateness and fussiness is the fancy of the hour in everything. White skirts come in large flat boxes, one skirt to a box. The price runs from \$5 to \$20. These skirts are flounced up the back to the waist to add fullness to the fouriers.

The most expensive skirts have two bottom flounces put on in knife plaiting, and are trimmed with Valenciennes lace. Silk undershirts cost \$4.50, drawers to match for about a dollar less.

Cream white surah silk, embroidered or otherwise, trimmed with Oriental lace and worn with a tulle veil, makes a very pretty wedding dress for girls who are not rich enough to be great heiresses.

Embroidered goods for the wedding dress is very fashionable at present. Here is the description of the latest Paris bridal costume: A heavy ivory white satin, embroidered with bands of pure white silk, orange blossoms, the skirt with a draped front and a long train, the latter also embroidered with orange blossoms.

The white skirt in front was caught up on one side with a spray of the same flowers, a cluster of which also closes the corsage at the throat. The happy owner of this dress will wear a small diadem wreath and a tulle veil at the wedding, but no jewels.

FARM & GARDEN

A Cheap Cottage.



Here is a beautiful and picturesque design for a cheap house. The great art in putting up a building is to make it look the best one can for the money.

Too many farm residences look like nothing so much as a succession of cowsheds, one "lean-to" following another. Or when not that, the rural home on its outside is too often merely a box, long and narrow, or square, as the case may be.

The pretty little house in our cut obviates both these difficulties. The roof is simple, and yet broken enough not to present a dull monotony. The two designs do not need much explanation. The cellar is 7 feet deep. The foundation is of stone, or of hard-burnt brick.

Stone is better and handsomer. The first story is 9 feet between floor and ceiling. The first story has a double floor, the second one a single floor. The second is a half story, 8 1/2 feet high in the middle. The dimensions of the building and plan of first floor are given in our second cut.

The second floor contains two chambers, a hall, and a space which may be left unfinished as a lumber room, or made into a bedroom. In the unfinished plan the whole structure costs only \$800, contractor's estimate; complete, the cost will be more.

But in any case such a home, with its picturesque outline, its abundant, handsome windows, and flowers and trees growing all about it, represents love in a cottage indeed.

Co-operation Among Farmers. While the prices of all the food products the farmer has to sell have scarcely been so low in the memory of the present generation, the curious fact remains to be explained that the consumers of these articles are in no way benefited by the low prices.

Small retail buyers of beef, flour and mutton pay nearly as much for these articles as they did during high-priced times. Butter and eggs are quite as high as ever. In midwinter eggs climb to such a price as to be quite out of reach of poor people; that, too, with no scarcity of them in the country.

A fire in a city warehouse some time ago disclosed 200,000 dozen eggs that had been bought up and packed away to keep them out of reach of the people till their necessities forced the price up to three times what it ought to be.

Last fall countless wagon loads of apples rotted in orchards or were made into cider, yet this winter fruit is so dear that New York boarding houses supply very few apples to their tables. One thing is certain, the farmer gets none of the benefit of these high prices, nor will he until producer and consumer are flung up the back to the waist to add fullness to the fouriers.

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but simply hang on to them and wait. Bad as the times are for farmers, they are not so bad as for those in other occupations. The industrious farmer is always dead sure of enough to eat. It is of the best quality, too, for he raises it himself.

Absolute certainty of food and shelter goes a long way to making a light heart. In this respect the farmer has the advantage of everybody else, and may as well think on his mercies. It is infallibly certain, that old saw which reminds us that the darkest hours come just before dawn.

After every one of the previous commercial and agricultural depressions there has been rapid recovery. Prices have risen speedily and certainly, the farmer has realized at last good returns for whatever he had to sell, and good times have come suddenly back to the discouraged spirit.

In the small farms it may be necessary to change the articles and methods of production to some extent. Near the large cities it has been found that "truck farming," so-called, pays better than the old-fashioned grain raising.

Fruits, small and large, vegetables, poultry and honey, and even flowers, are among the products whereby the skillful and energetic ruralist coins money from the generous earth. But he must be skillful and energetic.

Old free and easy ways of letting the chickens find themselves, and leaving half the bees and a third of the lambs to be winter-killed will not do. Trusting to providence and letting things run themselves is no way to farm in our times.

Probably providence has become tired of encouraging slovenly farmers. The agriculturist must learn the latest and most scientific methods of carrying on his trade. People in other occupations were forced to this long ago.

The tremendous competition in our age compels the farmer, as with others, to economize his time most strictly, to let nothing go to waste or ruin, and to get the most out of his capital.

And the small farmer can get on with energy, health, and determination to succeed. We know a woman farmer at this moment who is laying up a competency of twenty acres of land, near one of the large cities.

She makes butter, raises vegetables, honey, small fruits and poultry. At the same time, she is a highly cultivated lady, and shines in the most intellectual and brilliant society. That as a matter of course. The more highly educated a person is in the right way, the better farmer he will make.

This woman farmer is exceptional, but why need she be? Can any farmer or farmer's wife give a good reason why? Meantime it is pleasant to read a letter from a live and lively farmer declaring that of his knowledge a farm of 100 to 150 acres is enough for a man to make a good living on and prosper.

There is no doubt about it. A small farm can be superintended in every part personally by its owner. He can do much of the work on it himself. With a small farm, well fertilized and cultivated, and with good roads and good fences all about it, all its parts duly apportioned among fruit, stock, garden and grain, so that in case one fails there will still be something else, our rural friend can better afford to wait for good times than if he was responsible for a great estate, with high taxes, many farm hands and expensive machinery.

In any case, good times will come again. They always do. Bear that in mind continually, O, despondent farmer, and hang on! Save the Trees. A State forestry association has just been formed in New York. It was time. The Empire State is behind many of her sisters in the movement for tree-saving and tree culture.

Meantime, the American Forestry association is not idle, but actively at work. It is now establishing a regular bi-monthly publication in the interests of this supremely important branch of economics. It will be called the Forestry Bulletin, and will be published in New York city. The first number contains a valuable paper by Dr. Hough on the lumber interests of New York state.

The American Forestry congress is an organization including both the United States and Canada. Any one may become a life member of it by paying \$10. The next annual meeting of the congress will be held at Boston, beginning September 1.

White Star Potatoes Cut to One Eye. Mr. C. A. Kellogg, Geauga county, O., planted nine bushels White Star potatoes, cut to one eye. The ground was thoroughly prepared with Acme pulverizer and Thomas smoothing harrow. The crop was well tended from beginning to end.

BOYS & GIRLS

A Chimpanzee Baby.



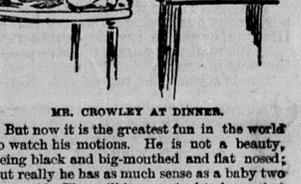
Above we give our young people the portrait of a monkey but, his keeper says, "can do everything but talk." He belongs to the chimpanzee tribe, the highest of the ape family. He was captured in Liberia, the negro republic on the coast of Africa.

He second keeper gave him the name of his first keeper, "Mr. Crowley," and that is the name by which he is known. But his present keeper, Mr. Jacob Cook, who is very fond of him, mostly calls him "Baby."

He is covered with thin black hair, "Baby" is. Like his tribe, the chimpanzees, he is without a tail. He was captured when a mere infant, and brought to the menagerie in the beautiful Central Park, at New York about the size of a two-year-old child. When city, last June. He is now two years old, full grown, if he lives that long.

"Mr. Crowley" will be five feet high, as tall as a short man or a big boy. But no chimpanzee has ever been kept in captivity more than four years. Shut up in a cage in our cold climate, gazed at and teased by stupid crowds with bad breaths, the creatures pine away and die of consumption.

There is only one chimpanzee besides this one in the country, and that one is in Philadelphia. Chimpanzees are the strongest, fiercest of the ape tribe, and very dangerous. They are the most intelligent, too, and seem almost like wild men of the woods, rather than dumb animals. "Baby" is very fond of his keeper now, and plays and is petted like a child, but if he lives to be full-grown he will probably become sullen and savage. A blow from his tough, powerful hand will be enough to break a man's skull.



MR. CROWLEY AT DINNER. But now it is the greatest fun in the world to watch his motions. He is not a beauty, being black and big-mouthed and flat nosed; but really he has as much sense as a baby two years old. You will be surprised to know that he has a little table and chair of his own, at which he sits and eats like a real child. When it is time for his dinner his keeper unlocks the cage door and says: "Come, baby."

The little fellow springs into Mr. Cook's arms, puts his own arms affectionately around the keeper's neck, and is carried to his small table. He sits in his chair quite like a gentleman, and eats bread and milk with a spoon. What is more, he eats much more neatly than most babies do, and does not "muss" himself the least bit.

"Mr. Crowley" eats bread, milk and fruit. He has a particular fancy for bananas, and the visitor who gives him one gains his fast friendship. He is a strict vegetarian, eating no meat at all. But it is the best sight of all to watch him wipe his mouth with a napkin. For "Baby" can do that, too. A pretty girl made him a present of a set of napkins, with his name embroidered upon them.

A visitor who went to call on him last week saw him do a very funny thing. He finished eating his bread and milk very nicely. Then he was given a napkin. "Now, Baby, wipe your smoot," said the keeper.

The little fellow took the napkin in his hand and wiped his lips very gracefully. But that did not satisfy him, somehow. He seemed to think it was not enough. So he raised his left foot, grasped the napkin in his toes, and rubbed his mouth briskly in that way. How the visitor laughed!

After he had dined, Baby danced. The keeper said: "Can you dance now for the lady?" He has not two feet and two hands like a human being. As you see in the picture, all four of his extremities are more like hands than like feet. This is true of apes in general, and they are therefore called "quadrumanous," which means "four-handed."

Mr. Crowley does not walk upright either like a human being, unless he holds to a cane or his keeper leads him. He walks upon all four of his hands, standing flat upon those behind, while the fingers of the front ones are curved inward, so that he walks upon the knuckles of them.

When the keeper patted the table, "Baby" began to jump up and down upon his hind feet and front knuckles, keeping perfect time. The company laughed, and "Baby" did too. He really laughs. He does not make a loud noise, but stretches his lips and gives out a sound like a husky chuckle. He cries, too, like a child, when he is angry or his feelings are hurt. He is as fond of play as a real child, and has no end of cute tricks.