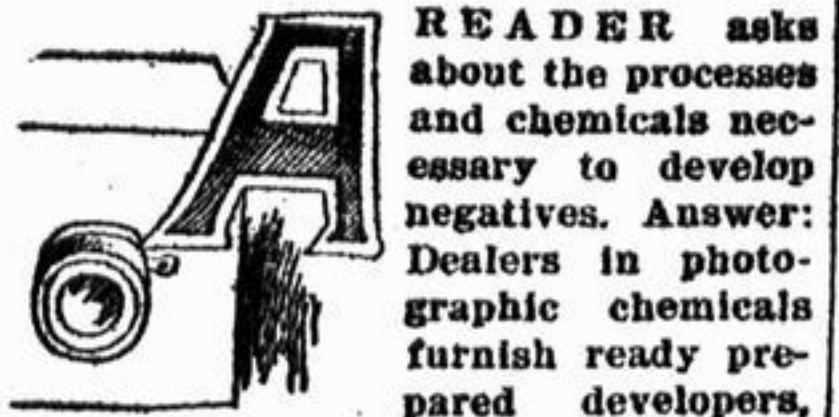


POPULAR SCIENCE.

LATEST INVENTIONS AND NOTES OF PROGRESS.

How Negatives Are Developed—Producing a Vacuum with a Plate and Wine Glass—The Gynograph—Effects of Weeping.



A READER asks about the processes and chemicals necessary to develop negatives. Answer: Dealers in photographic chemicals furnish ready prepared developers, and one can purchase the soda ready to dissolve. A dark room and a red light are necessary, and an abundance of running water. Remove the negative from the plate-holder, taking care to keep it from other than the red light. Put it face upward in a shallow tray containing the developer, and rock continually from side to side until the picture appears. Then, when all is clear, wash it thoroughly and put it into the soda. This is a sketch of the process, but any one who has never seen a negative developed will be likely to make a failure of it. Cannot you find some one who will show you how to proceed with the work? Even though you were obliged to pay for instruction it would, in the end, cost less than the waste of plates and chemicals. Photography is a somewhat expensive pastime, and it pays to go about it with at least an approximate idea of what is required. It is well worth while to invest in good articles, and learn correct methods.

Some of the Uses of Electricity.
The telegraph and telephone are familiar to almost every person in the civilized world. Electric lighting has become commonplace, and electric roads are so numerous that they scarcely attract more than passing attention, but it is not everybody who knows that many elevators are run by electricity or that farms are cultivated by this means. The barber cuts his customer's hair with this agent, and the doctor calls in its wonderful power when he wants to diagnose an obscure case. The dentist drills and fills teeth by electricity, call-bells are worked by it, and it brings the news from all parts of the earth. It rings the door-bell, stamps the letters, turns in an alarm of fire on its own account, cooks the food, and furnishes the motive power to run the clock, the churn, the sewing machine, and the various appliances in the stable and workshop. It sterilizes milk, destroys various fermentations in articles of diet, and works a fan that is said to produce the ozone which assists in building up the debilitated forces of the system. And electricity is really in its infancy as far as its utility is concerned. What it will be within the next quarter of a century it absolutely takes one's breath away to imagine.

Influenza.
A strange exemption from influenza has been noticed among some of the workmen in a factory at Valreas, Department of Vancluse, France. The building has two wings, one devoted to the manufacture of Bristol board, the other to lithography. In the former, thirty-five out of fifty hands have been seriously ill with influenza; in the latter, not a single operative has had even a cold. A similar state of things has been noticed in seven other factories near by. M. Naquet, who communicates the fact to the Paris Academie de Medecine, thinks that the immunity is due to the vapors of spirits of turpentine, of which a quantity is used with each lithographic machine.

A Pretty Experiment.
The accompanying cut is not unlike a practical demonstration of the strength of certain cements shown along the city streets. But this case is not one of the cement-fastening; the adhesion here illustrated is made solely by the pressure of the air.
It is impossible, without an air-pump, to produce a perfect vacuum, but one sufficient for the purpose of this experiment may be produced by means of a bit of burning paper. Suspend a wine-glass from a chandelier of the ceiling by a string, as shown in the cut, and hold the burning paper under it. The air will dilate with the heat and in



cooling will make a partial vacuum in the interior of the glass.
This will suffice to cause a porcelain plate to adhere to the glass, provided you press it to the glass firmly and evenly before the cooling of the air begins. As a precaution, to secure an air-tight joint, you might rub the surface of the plate with suet.
The principle here illustrated is the equal pressure of the atmosphere on all sides, except in the interior of the glass, where there is a vacuum, thus keeping the two articles together.

The Use of Paris Green.
There is probably no insecticide that is so useful and so generally in demand as Paris green. It is a preparation of arsenic, and is fatal to a very great number of gardeners' and florists' pests. One of the difficulties in using it is that it settles to the bottom of the vessel in which the solution is made. Experiments are in progress looking to a preparation which will not have this objection. The coarse crystals are thought to be very much stronger, and this peculiarity has made a market for it, when in reality there is a fine powder which is less expensive and more effective. There is a new process in the manufacture of Paris green, by which it is combined with acetic acid. In one of the new forms it is an impalpable powder which will remain in suspension for many hours. If this proves to be the success it promises, it is superior in quality to the ordinary Paris green and costs but half as much.

A New Fruit Crop.
Experiments are being made in Georgia with Japanese plums, and accounts of them indicate that they will be a most profitable market fruit. The trees bear a year after planting, and in two or three years' time will yield from one to two bushels of fruit. It is very large, beautifully colored and an excellent shipper. Orchards of this fruit will pay better than almost any crop raised, as it comes into bearing so quickly, while for ordinary fruits one must wait several years. It has been suggested that people who wish to plant orange groves should plant plum groves at the same time, as while the orange trees are coming on the plums are a paying investment. There are certain varieties that may be picked while quite hard, and if carefully gathered and wrapped, will keep for several weeks and ripen into rich and perfect fruit with a fine color and flavor.

The Gynograph.
This engraving shows a novelty in tops recently added to the long list of



Interesting modifications of this old-time toy. The novelty in the present case consists in making the point upon which the top spins produce a record of its movements. The top consists of a heavy disk of iron secured to a spool on which to wind the string. The spool is bored axially to receive a pencil which forms the point on which the top spins. The handle is swiveled so that the top may be spun while the handle is held in the hand. After the top is set in motion it is placed on a paper in the position shown in the engraving. The pencil point then traces the intricate curves as shown. If desired, a slate pencil may be substituted for the lead pencil. A well-centered hard pencil with the lead cut square across gives the most accurate curves, though not necessarily the most beautiful.

The Physiological Effect of Weeping.
It is generally supposed that frequent weeping is injurious to the eyes. This, scientists assert, is a great mistake, as a copious shower of tears washes the eyeballs, cleanses the glands about them and generally improves their condition. They do not, however, exercise a beneficial effect on the eyelids, but cause puffiness and great inflammation. What one might call the sentimental effect of tears is a most interesting study. It has frequently been said by unsusceptible people that tears are a confession of weakness. This, however, is not true. Weeping is caused by a vibration of the nerves of the eyes, and is a purely physical act, superinduced, of course, by mental agitation and bodily pain. Men are less likely to weep than women, because their nerves are not so sensitive. Physicians universally agree that weeping when one is in sore distress of mind or body is a most beneficial operation. It relieves nerve strain and may prevent an attack of insanity. Naturalists have often remarked that no member of the ape family can shed tears, although in other respects they are so very like human beings, but the ape has no lacrymal gland, and, therefore, this sign of distress is impossible.

Cure for Asthma.
The following is said to be a cure for asthma, and, as such, is interesting to all sufferers from this distressing malady. Of course, it may not be a specific in all cases, for it is a well-known fact that the same remedies do not affect all persons alike. "At the moment of the attack, spray rapidly the back of the patient with chloride of methyl, from above downward and from below upward. The attack will cease in a few moments; if not, spray lightly the upper part of the chest. If the skin be delicate, as in woman, cover the parts with a bit of fine gauze, and make the strength of the spray proportionate to the strength of the patient and the violence of the attack."

Grass stains should be rubbed with molasses thoroughly and then washed out as usual. Another treatment is to rub with alcohol and then wash in water.

FOR WOMAN AND HOME.

SOME CURRENT HINTS AND HELPS FOR THE FAIR.

The Glass of Fashion—Sleeves of Tartan Plaid—Reception Gowns of Velvet—Start Your Hyacinths Now—Fads of Women.

Start Your Hyacinths Now.
Now is the time to start hyacinth bulbs in glasses in order to have them flower early in the winter. The glasses must be filled with water, so as just to escape touching the base of the bulb. They must be kept in a cool, dry cupboard from which all light is excluded till the roots have grown about halfway down the glasses, which takes from two to three weeks. The glasses are then placed for a day or two in a subdued light until the shoots the bulbs have made get accustomed to the change. They may then be placed in a window or wherever wanted. Care must be taken to replenish the glasses with water as it evaporates. Snow-drops and crocus bulbs may now be planted in small bowls and other dishes, filled with damp moss for early flowering.

Current Fads of the Fair.
Sothorn, the actor, used to say that after playing Lord Dundreary for a long time in London, he found himself stuttering in private life occasionally, the mannerism of the part having taken hold of him to an appreciable extent. Physicians in attendance on fashionable families are recalling this experience of the dead and gone comedian. They find that among the numbers of novel notions that the summer brought forth for autumn's use among ladies of high degree there is none so unique and amusing as the cultivated impediments in speech. The nut-brown maid just returning home from seashore and mountains has apparently been bewitched by the mischievous gnomes or water nymphs, for when her pretty lips are open, the words will only come by fits and starts, since nothing, believes this coquetish young lady, is as effective as a gentle stammer. So neatly has she learned her new role that it is not surprising the family physician has warned her the little trick may in time grow into a fixed habit, impossible to shake off. There are among these society girls a respectable number who would not stutter over their words if they could, but instead have caught up a most ridiculous little drawl, just because they have all read a popular English romance, written by one of the leading English beaux, in which the heroine fetched forth her wittiest speeches at immense length of breath; and the drawers are hard pressed by a circle of rosy lips that speak with a decided lisp. To lisp, drawl and stammer, however, are tricks of manner, these frivolous girls have agreed, that seem appropriate only in the mouths of rather small and dainty individuals. But their tall and statuesque sisters, though admitting this restriction, are not to be outdone in originality; and unless one addresses one of these Junoesque damsels in a tone of voice slightly elevated, one's flattering or commonplace words are only met with a little wistful, questioning stare. How sad it is to be slightly deaf; yet not in the least disfiguring to one's looks, and very touching it seems when that young lady replies in the softest voice, with that far-away, plaintive glance dear people always show. And the admiring young man who shouts his interesting sentences into the seashell ear never dreams for the moment that the other folks are hearing.



Sleeves of Tartan Plaid.
Another pretty wedding reception frock is made of creamy white broad-cloth, combined with tartan plaid velvet. The skirt is abnormally full, setting out in perky folds, and beautifully lined with tartan plaid silk, which betrays itself at every step. The back is in blouse form, smoothly fitted at the top, and finished by a high stock, with overturned pieces under the ear. It pouches gracefully over a narrow belt of cardinal velvet, just the color found in the plaid, and fastened by a jeweled buckle. The tartan sleeves add chic to the garment, and make it as Frenchy a creation as one would wish to see. They are in the favorite new mode, standing out in full, stiff puffs from the shoulder, and clinging in a mass of wrinkles to the lower arm from above the elbow.
The richness of the velvet enhances the entire gown. Odd lapels of the wool goods meet in points on the outside of the sleeve, fastened by a flat

TWO TOILETS TRIM AND TIDY.



pearl button set with a single rhinestone; deeply pointed, flaring cuffs turn back, and are ornamented by a similar jeweled button. Creamy white lace gloves, heavily stitched with black, are worn with this gown, and a huge picture hat of black velvet, coquettishly turned up at the side and trimmed with masses of glossy black plumes. A carriage wrap of white thibet, lined with tartan and plaid velvet, completes the fetching picture.

Reception Gowns of Velvet.
This is the season for the blossoming out of wedding frocks; perfect marvels of elegance and samples of the dressmaker's art. The most lavish display in costume is indulged in in gowns for the receptions, many of them being beyond description. Velvet plays an important part, combined with rich lace or fur, and an endless display of costly jewels.
A fetching gown worn at a recent wedding by one of the guests, a petite, brown-eyed maiden, was made up of soft, silky crepe de chene, velvet and priceless old Venetian point lace.
The body of the gown was in princess effect, the clinging, pale green crepe held out stiffly by its skirt of heavy leaf green satin. The graceful form was beautifully outlined by an Eton coat of leaf green velvet, opening over a vest of jabot lace. The coat

Helps of All Kinds.
It is said that a new potato grated finely and then used instead of soap to wash with is good.
An acceptable way of quenching the baby's thirst is to tie a little well-cracked ice in a piece of soft, clean muslin.
Salad dressing does not often require the cook stove to prepare it, since oil,

No Use for Him.
The dusky islanders sat in a ring, listening with eager expectation to the Lord Chancellor as he read to their monarch the latest communication from the Foreign Mission Society.
"Since the mysterious disappearance of our dear brother, Duppy," so ran the letter, "we are sending you one who will be a powerful worker in the field. In him not only is the spirit willing, but the flesh is strong."
A look of disappointment passed around the circle.
"Read that part again," said His Majesty.
The Chancellor complied.
The king leaped up from the section of pork-barrel which formed the imperial throne.
"Such a letter as that," he cried, as he dashed his stove-pipe crown on the coral strand, "is an outrage; the man will be utterly distasteful to us; write at once and say we don't want him."—Truth.

Made Her So Happy.
Young Husband (who meets his wife in the street)—Jennie, my dear, I know you have been silently grieved and pained a long time on account of my absence from home at the club every evening. I am going to turn over a new leaf, and I'm going to begin to-night.
Young Wife—Oh, Edwin, you don't know how happy you've made me! Brother Jack wants me to go to the theater with him to-night, and you can take care of the baby; so good-by.—Boston Courier.

His Inference.
Mr. Hogan—Put that sound I hear yer darter Cornelia makin' in the house beyant?
Mrs. Gilligan (proudly)—Sure it's a primy donny she's to be, an' that's the trill she do be rannin' for her vocal culture.
Mr. Hogan (much relieved)—Arrah, that all? Sure I thought she wor garrin' her 'front!—Puck.

OUR WIT AND HUMOR.
LAUGHING GAS FOR HEADACHE.
A Woman's Reason—A woman's reason is a very fragile thing. It is easily broken, and it is very difficult to put it together again.

Wanted a Servant.
Wanted a Servant—A woman's reason is a very fragile thing. It is easily broken, and it is very difficult to put it together again.

The Knight, the Baron, My Lord, Duke.
Were none of them to your liking, You gave them all rebuff, rebuff. While dancing, driving, biking.

Well, naught care I for your triumph galore.
Your dower, or power, or pelf, I'm simply a clerk in a dry goods store. And I offer you, Miss, myself. —Tom Hall in Truth.

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Prima Donna—This is your part, darling.
Will you not kiss him? Darling—Not unless you're sure he's going to be it for good.—Truth.

A Devoted Son-in-Law.
Count de Vermicelli, an Italian nobleman now in New York, is engaged to be married to Miss Maud Snobberly of Fifth Avenue.
One of the guests at a recent social gathering at the Snobberly mansion, asked old Mrs. Snobberly (she used to be a servant girl), how she liked her prospective son-in-law.
She replied: "Me and Mr. Snobberly are both tickled to death with Count de Vermicelli, and the way he is stuck on Maud is a sin. You can have no idea of how the Count does on that gal. Everything in the world that he imagines she wants he makes us buy for her."

Water-Tight Compartment.
When Mr. Boosie landed in New York from a Liverpool steamer the other day, he gave every appearance of having had a long and severe tussle with the sailing bowl. A friend was on the dock to meet him, and when he perceived his condition he said:
"Are there water-tight compartments in your ship, Boosie?"
"Betcher life. Chock full of 'em."
"I thought so. And you had one, didn't you?"
"I'dno. Why?"
"You don't look as though a drop of water got into you during the entire voyage."

Shabby.
Mazie—So Ethel has married her lord, eh?
Daisie—Yes, but he married her under false pretenses.
"How so?"
"He initiated the consumptive cough right up to the marriage ceremony, and then dropped it, the brute!"—New York World.

A Woman's Reason.
Why don't you take your reason to the same Mr. L.?
"I don't think he knows much about music."
"He doesn't, but his taste is lovely!"—Puck.

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