

The Disappearing Photograph.

A sheet of ordinary white, unsized printing paper, or blotting paper, is to be immersed in a liquid made by dissolving twenty grains of gelatine in an ounce of water. When the paper is thoroughly saturated, it is to be hung up to dry. After thorough drying, it is to be floated for three or four minutes on a mixture of one part saturated solution of bichromate of potash to two parts water, and again dried. The paper is now

There are 24,000,000 of them, and the Dutch government has never had the slightest trouble with any of them."

THE NEW CURE FOR DIPHTHERIA, CROUP, ETC.

If the facts placed before the Hygienic Congress held at Budapest last month be not overstated, then the whole world owes a deep debt of gratitude to the young French savant, Dr. Roux, for the patient and

not only impervious to the toxin, but destroys it, and from this singular result is due the origin of the new substance with which Dr. Roux wages war against diphtheria. In a word, it is the basis of a great revolution in the medical world, which henceforth will recognize in "Serum therapy" a heaven-sent system to root out most of the diseases connected with childhood. As Dr. Marsan well says, there are toxins and anti-toxins for all microbic affections. Serum therapy will eventually discover a remedy for all infectious diseases. Yesterday it was tetanus in animals that it cured, to-day it is diphtheria, to-morrow it will be tuberculosis.

If you go to the Institut Pasteur, you will find comfortably stalled in the garden some ten or a dozen cab horses, in prime condition, aged from six to nine years, whose mission in life it is to furnish the precious fluid which every day snatches many a young life from an untimely grave. They are in their measure unconsciously solving the problem of how to stop the depopulation of France. They are well cared for, there is no cruelty in the process, no suffering entailed. The first process is to inject the deadly virus—the toxin—into the shoulder of the horse. This, of course, at first causes a slight indisposition, but after a while no ill effect is felt. The second step, as shown in one of the views, is to draw from the neck of the "prepared" animal a judicious quantity of blood. If the blood be allowed to stand for a while, the red corpuscles settle to the bottom, and the operator can then draw off the fluid, of a yellowish hue, resting above and containing the serum, or antitoxin. This, in its turn, is injected under the skin of the patient by means of a syringe analogous to that used for injecting morphine.

On February 1 of this year Dr. Roux began operations at the Hospital for Sick Children, Paris. He had a good supply of serum, and each day on making his visit to the hospital, he treated all the children he found there, in whatever state or condition of croup or diphtheria. There was no selection of subjects, a point to be borne in mind, nor was the ordinary treatment in any way modified or set aside. Things went on exactly as they had before, except that a new element had been introduced—namely the serum. During 1890, 1891, 1892, 1893, before Dr. Roux began his system, 3,971 children suffering from croup and diphtheria were admitted into the Hospital for Sick Children. Of these 2,029 died of the disease, the mortality thus being 52 per cent. On the other hand, from February 1 of this year up to July 24, the date up to which Dr. Roux furnished statistics to the Congress, the serum was applied to all without exception, and, out of 448 children, there were only 109 deaths—that is, the mortality had decreased to 24 per cent. As the conditions during these periods were the same, the difference between 52 per cent and 24 per cent indicates the indisputable benefit derived from Dr. Roux's treatment. If we take the same period at the Trousseau Hospital, Paris, where the old methods prevail, we



THE NEW CURE FOR DIPHTHERIA, CROUP ETC.—INJECTING THE SERUM.

sensitive to light, and must be kept in a dark place. By exposure to the sun under a negative, for a sufficient time, a brownish print is produced, which is first to be soaked in cold water, until the unaltered bichromate of potash is dissolved out, and then in warm water, which removes all the gelatine that has not been rendered insoluble by the combined action of bichromate of potash and light. On the completion of this operation, the picture is still visible, in a faint brown color, but, by immersion in a solution of sulphurous acid, this color is bleached out, and, on drying, the paper appears perfectly white all over, without the faintest trace of an image. In order, however, to bring out the image, all that is necessary is to immerse the paper in what the British Journal calls "hydroxyl monohydride," in other words, clean water, whereupon the picture plainly appears, in white on a dark ground. On drying, it disappears again, and the process may be repeated as often as desired.

Java Tea and Coffee.

W. C. Knoofe, a rich coffee and sugar grower of Java, is among the recent arrivals at the California, says the San Francisco Examiner. He has lived in Java ten years and has large and flourishing plantations.

He told an interesting story recently about this queer country, for so many years under the control of the Dutch, and said that few persons understand the strange conditions of life there.

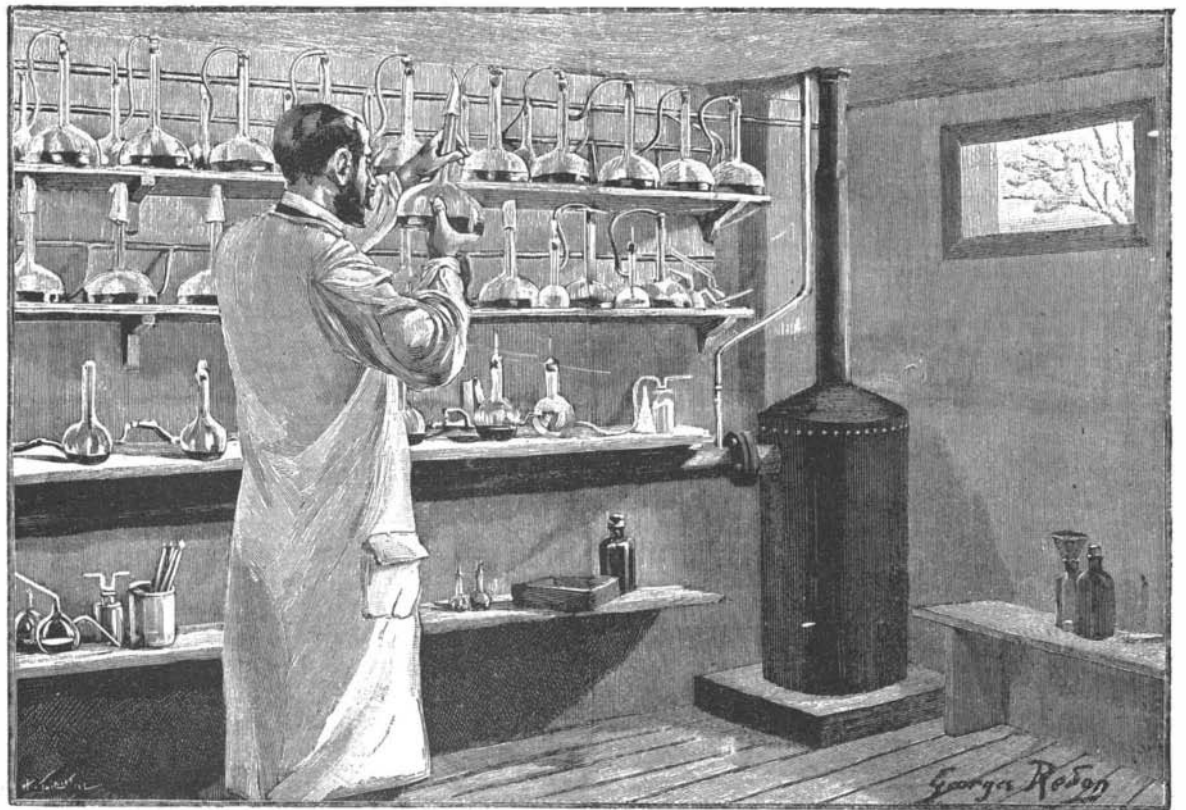
"You never saw such happy people anywhere as these little Javanese. They are always talking, laughing and dancing, and seem never to have any sort of care. They work in the tea, coffee and sugar plantations for 8 or 9 cents a day, and the best of them never get over 10 or 12 cents. Yet they are entirely contented. The women, who are the best for tea picking, do not get more than 4 or 5 cents a day. The tea is cut every forty days, so that there is always work to do. There is a big yield this year, and it is good tea, but it isn't worth much. We got word from Amsterdam, where much of our tea goes, that it was worth only from 9 to 10 cents a pound.

"With coffee and sugar the price is different. There never was as much money in sugar as at the present time. It is worth from \$3.20 to \$3.60 for each picul, or 134 pounds. The growers are getting rich. Both the coffee and sugar crops are very large, and like the tea, they are very fine. Coffee has veered around so much that there is no longer much money in it. All that is grown must be sold to the government. That is a requirement. It is cheap. In Holland it is worth but \$6 for each 134 pounds.

"All the labor used is Javanese. It would not pay us to employ any other, and, though the wages are small, the people are probably the happiest on the globe. Their wants are few, the climate is so mild that little is worn, and they are as jolly as the day,

heroic researches which have led to the discovery of an effectual cure for croup and diphtheria, and opened the way for further results not less startling. Such is the introductory announcement in the London Daily Graphic, which also gives the following:

The distinguished Dr. Marsan points out how the new method was established. Diphtheria is produced by microbes which plant themselves in the membrane of the throat, and multiply; but unlike the bacilli of other infectious diseases, they remain obstinately in the same position, neither penetrating the system nor the blood. But if the deadly animalcules remain at the door, they are still able to secrete a poison of extreme violence, called "toxin," which quickly pene-



THE NEW CURE FOR DIPHTHERIA—PREPARING THE TOXIN.

trates the circulation and infects the whole body. This toxin, thanks to the achievements of science, can now be isolated, and in the form of a fine powder will cause almost immediate death when injected into animals. However, it has been found that if a very small dose be introduced into certain animals, especially the horse, only a feeble reaction is produced. By repeating the operation, with gradually increasing doses, the organism of the animal finally revolts, and becomes

find that out of 520 children admitted there, 316 died, thus giving a mortality during the months in question of 60 per cent.

But this is not all. The serum, if applied, say, to a child suffering from quinsy, not only puts that ailment to flight, but renders the subject impervious to croup and diphtheria; and even measles and scarlatina are found to be of very rare occurrence, and then only of slight character, when the system has been fortified by

Dr. Roux's wonder cure. The 24 per cent represents the saving of the lives of 120 children in six months in one institution. The gain would have been more considerable but for the deplorable hygienic conditions of the Hôpital des Enfants Malades. Many of the deaths, too, were a result of further complications, such as heart disease and broncho-pneumonia, which made the work of the physician very difficult. Generally speaking a single injection is sufficient, and Dr. Roux

the shell of the boiler, as shown in Fig. 6, the outer end of the bushing being engaged by a general steam distributing box, from which the steam is distributed by pipes to the various parts of the locomotive. In case of an accident carrying off this box from its support on the shell of the boiler, or any sudden shock to the box, the valve will be automatically seated, the steam being in every case shut off. For the whistle, for the safety valve in the top of the dome, and for the in-

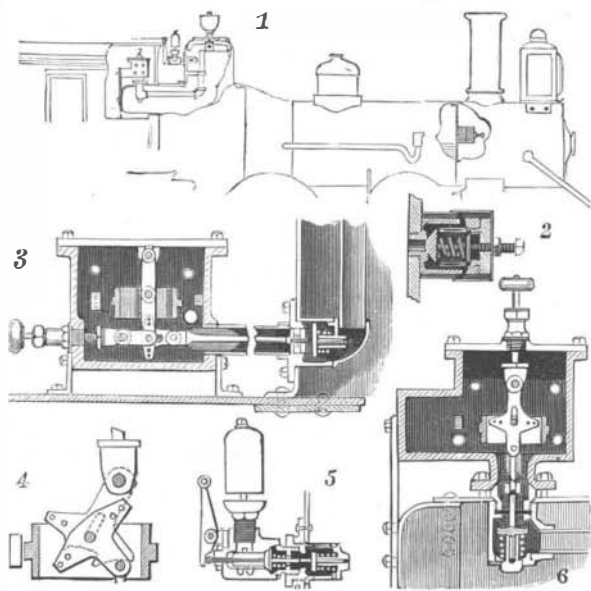


THE NEW CURE FOR DIPHTHERIA—DRAWING THE SERUM FROM THE HORSE.

has never given more than two. The dose consists of two-fifths of amount of serum injected into the side by one puncture. The temperature then decreases, which is an excellent beginning. The leather-like membrane which is suffocating the little sufferer ceases, within twenty-four hours, to increase, and after thirty-six hours it comes away altogether, and the diphtheritic bacilli disappear. The serum also has a marvelous effect on the appearance of the patient. The dull and leaden complexion, with its accompanying piteous cry, gives place to a healthy skin, and the patient becomes cheerful, if not gay.

AN IMPROVED LOCOMOTIVE BOILER.

To prevent the escape of steam from broken pipes, valves, etc., in case of accident to the locomotive, thereby doing away with the danger from scalding, is the object of this improvement, which has been patented by Mr. G. A. Akerlind, Erie Hotel, Dunkirk, N. Y. The invention consists principally of a spring-pressed valve normally held open, and adapted to close automatically in case of a shock to the locomotive, or in case the steam conveying pipe of the boiler is broken off, there being also an auxiliary safety valve in a sheltered place on the boiler, set to a higher pressure than the ordinary safety valve. Fig. 1 is a side view, showing the improvements applied upon a locomotive, Fig. 2 showing the auxiliary safety valve in the smoke arch, and Fig. 3 being a modified form of the improvement as arranged for the general steam distributing box. Fig. 4 is a side elevation of the weight for holding the valve and parts in position after a shock to the locomotive, and Fig. 5 is a sectional plan view of the



AKERLIND'S LOCOMOTIVE BOILER.

link connection for the weight, Fig. 6 showing in side elevation the application of the improvement on the steam distributing box for the injectors, air pump, blower pipe, steam heating system, lubricators, etc. The steam supply pipe from the dome leads to a valve connected with a bushing fitted into an opening in

jector check valve, similar automatically working check valves are provided. The inventor has lately received a prize as a successful competitor for a design for a consolidation engine to which this system was applied.

Regulation of Mineral Water Traffic.

The Academie de Medecine, of Paris, as the result of a close investigation of the trade in the so-called "natural" mineral waters of France, has arrived at the following conclusions, which are put in the form of recommendations to the legislative bodies:

1. That the sale of natural waters, impregnated with supplementary gases, should not be allowed.
2. Every application for permit to carry on the business of the sale of natural mineral waters should be accompanied by certificates, made before the proper authorities, that the waters handled or to be handled, by the applicant, have not been so prepared (i. e., by supplementary carbonification), and by a further certificate on the part of the owner of the spring, or of the source of the water, that he has not had recourse to supplementary gasification.
3. All reservoirs used for mineral water should be made air-tight, and should be emptied at least once in every twenty-four hours; they should be so constructed that the water of the spring flows directly into them; and, further, all bottles and containers should be thoroughly sterilized, and all impurities of every description should be removed before they are offered for sale.
4. These regulations should be at once imposed and all proprietors of springs of mineral waters should be forced to put them in practice within three months from date.

In France the recommendations of the Academie carry almost the weight of an order, and there is but little doubt but that the above regulations will soon be in force, so far as commercial waters for home consumption are concerned. If they are made to apply to all waters, those for export as well as those for domestic use, there will be a fearful falling off in exports, as it is well known that every single bottle of foreign, so-called "natural" carbonated waters—not merely those of France, but those of Germany, Austria and other countries—that goes abroad, goes charged with supplementary gas. Not merely this, but nearly every one of them is doctored otherwise to an extent that should remove them entirely from the category of natural waters.

Every one who has given the matter any attention knows that the mineral contents of nearly every natural spring vary with the seasons, becoming more concentrated in long dry spells and correspondingly weakened by rainy periods. In order to make the yield uniform the proprietors are forced to add water from other sources in the first instance, and to supplement the natural salts by the addition of artificially prepared chemicals in the second. The gasification is nearly all supplementary.

From "doctoring" the true waters of the springs to manufacturing the product outright is but a slight step, and hence we find some of the great mineral

water companies annually exporting to America, alone, millions of bottles of water in excess of the output of their springs. By a strange ruling of our customs officials, these manufactured mineral waters have been allowed for years past to come into this country as "natural waters," and thus not merely to enter into competition with our domestic products, natural and manufactured, but to "hold the age" on the latter as "the product of nature's laboratory," a fetch of great power among the unthinking multitude.

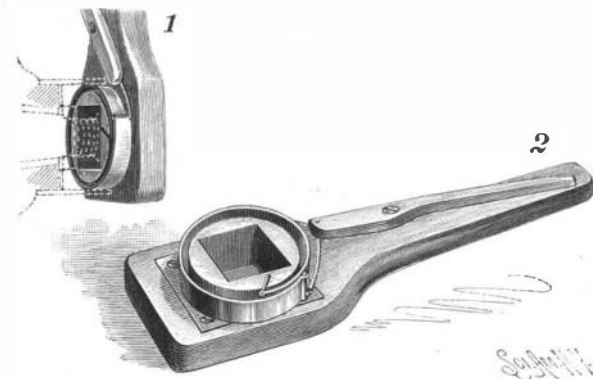
The steps suggested by the Academie, by showing the French people what poor stuff their natural waters really are, may have the effect of waking other governments up, and thus lead to legislation in this direction. If so, nothing but good can come of it.—National Druggist.

Annual Convention of the American Institute of Architects.

The twenty-eighth annual convention was held in this city, October 15, 1894, in the Fine Arts building; 105 members being present—a larger number than usual. President D. H. Burnham of Chicago delivered an interesting address, in which he deprecated the practice of showing designs to customers without payment. Other interesting papers were read and discussed. Secretary Stone read the annual report of the Board of Directors, from which it appears there is a membership of 475 fellows. There are also 26 chapters, chartered by the Institute, having an aggregate of 600 members, of which about 500 are practicing architects, and from these members the fellows are chiefly selected. The New York Chapter has the largest membership, namely 86, of which 60 are practicing members, the remainder honorary and junior. Illinois has 82 members, of which 80 are practicing. Philadelphia 55, of which 31 are practicing. The other chapters range from 8 to 20 members. The next convention meets at St. Louis. Daniel H. Burnham, of Chicago, was re-elected president; William S. Eames, St. Louis, secretary.

A CARRIAGE WRENCH.

The illustration shows a wrench more specially designed for conveniently removing the nuts on the axles of vehicles. The improvement has been patented by Mr. Julius L. Stambaugh, of Standart, Texas. Fig. 1 shows the wrench applied to the nut in the wheel hub and Fig. 2 is a perspective view, with the clamping



STAMBAUGH'S CARRIAGE WRENCH.

spring closed, ready to apply. The device comprises a cap adapted to engage the nut, and a spring band encircling the cap has one end secured to the body adjacent to the cap, while the outer end of the spring band is connected by a link with the forward end of a lever fulcrumed on the handle. The spring band engages with sufficient force the hub of the wheel, so that when the latter is turned in the right direction the wrench is carried around with the wheel, and the nut is thus unscrewed from the threaded end of the spindle.

A Horse's Sense of Locality.

About the year 1856, says the Lewiston Journal, a little colt was born on a farm in Aroostook County, in the State of Maine, a colt that was soon sold away from the place, to come shortly after into the possession of a physician in the town of Houlton, who at the opening of the civil war went "to the front," taking with him for cavalry service the colt, that had now reached maturity. Through all the vicissitudes of a five years' campaign this horse followed the fortunes of his master, being wrecked on the Red River expedition and suffering various other disasters, to return at the close of the war to the State of Maine, across which he carried his master horseback until the town of Houlton was again reached.

On the journey through Aroostook County the road traversed lay past the farm where some ten years before this horse had been born. Neither his life between the shafts of a doctor's gig nor five years of war campaigning had caused him to lose his bearings, and when he reached the lane that led up to the old farm house he turned up to the house as confidently as though he had been driven away from it but a half hour before.