

Composite Portraits.

At the Newport meeting of the National Academy of Sciences, Prof. R. Pumpelly read a paper "On an Experimental Composite Photograph of the Members of the Academy," illustrating it by photographs of several groups of the members, and also by photographs of engineers employed on the northern transcontinental survey.

This paper was in the direction of the experiments first instituted by Francis Galton, and described by him in his book "On the Existence of the Human Faculty." Galton's experiments seemed to indicate the possibility of obtaining type-pictures of different types of different persons and characters.

These pictures are obtained by taking the photographs of a number of different individuals of the type to be compared, in as nearly as possible the same position. These pictures are then photographed on the same negative, being superposed one on the other, and each photograph being exposed for only a very short time, so that the resultant contains and combines all the features which the different photographs possess in common, but eliminates those which are due solely to individual peculiarities. The pictures are focused on the eyes; and since the distance in eye differs in different persons, some indistinctness about the borders of picture is inevitable. The mouth especially appears to lack decision, by reason of being somewhat blurred; yet on the whole the composite picture is such a one as would be at once recognized by most persons as a fair illustration of such a kind of person as the individuals which compose the class under observation.

It is by somewhat such a process as this, in fact, that Prof. Pumpelly thinks that we usually form a mental image of different types and classes, whereby we recognize, for instance, at sight a Chinaman or an Indian.

The pictures of members of the Academy showed in one instance a compound formed from thirty-one individual members. This picture may fairly be taken as a type-picture of the average scientist or the ideal intellectual man of the Caucasian type, being composed as it is of individuals the most eminent in America in various lines of scientific research. It shows, as must have been expected, a high and massive forehead, and that well known though indescribable cast of countenance which we all pronounce at once, without perhaps being able to assign any reason for it, to be intellectual, so that on seeing a countenance of this stamp we naturally infer that it is that of a professional man.

It was observed, however, that the faces of three of the persons thus combined differed largely from the average type, and in the subsequent experiments these three photographs were omitted for the purpose of securing greater clearness in the result, notwithstanding that the exposure of each picture to the camera was only two seconds, out of the total exposure of sixty-two seconds for all, so that the peculiarities of individual pictures would make only a very feeble impression on the combined photograph. The remaining twenty-eight pictures, then, were divided into two groups, and classified, according to the department of science most affected by the members, into sixteen naturalists and twelve mathematicians.

On combining the mathematicians into one group and the naturalists into another, it was seen that, with apparently the same height of forehead, the mathematicians have a broader, and the naturalists a slightly narrower, forehead than the average.

Prof. Pumpelly spoke at some length of Galton's experiments, by which he has obtained type-pictures of burglars and of other classes of criminals, of engineers, of persons suffering under certain form of disease, such as consumption, of family groups, etc.

He intimated that it was his intention to prosecute these inquiries in the direction of composite profiles, which he expected would produce some startling results. He regarded this as a method of much value in anthropological work.

Major Powell stated that the same method had been applied to obtain a composite photograph of crania at Washington, but without success.

Other members of the Academy, however, indorsed Prof. Pumpelly's views.

Prof. Peirce thought it particularly desirable to obtain a composite photograph of musicians, and also of mathematicians who were devoted exclusively to mathematics, remarking that the members of the Academy represented were not of that exclusive mathematical type which he regarded as a very peculiar one.

Uses of a Common Paraffine Taper.

A common white paraffine taper makes, I find, one of the best bougies for exploring the nasal cavity. I use a taper of from one-eighth to one-sixth of an inch in diameter, and about ten inches in length. For mere exploration I round off the end that is to be introduced into the nasal cavity, bend the taper into an easy curve, make it slightly soft by warming it in my hand, and then have it ready for use. The perfect smoothness of the surface of the bougie thus formed, the ease with which it bends, and the just sufficient strength given to it by the wick, are qualities which make this simple, inexpensive, and always ready instrument very

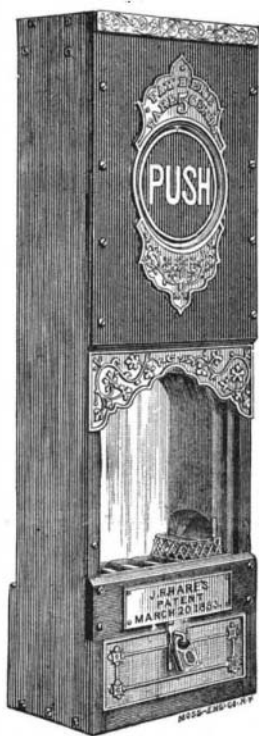
effective. From its color it is also readily discernible in the throat when it is passed into the pharynx.

The taper has other uses. If it be wished to apply iodine evenly to the whole of the nasal cavity, the thing can be done at once by means of the taper. It is merely necessary to paint the end of the taper for a couple of inches with iodized colloid or with tincture of iodine, and then introduce it, to secure that all the iodine is left on the mucous lining of the nasal cavity. In ozena, patients can be taught to carry out this method for themselves at stated times. I have two patients now who have done this with the best effect.

The taper admits of another useful application. If the cotton within it be nicely teased out at one end of a short length, the cotton makes one of the most convenient of brushes for applying iodine or other solutions to the throat. In scarlet fever and other affections attended with throat complication, I invariably instruct the nurse or attendant to be provided with a few tapers of different sizes, and to make them act as the brush for applications to the throat; and as soon as one brush has been used, to cut it off with scissors, burn it, and make another. The same kind of brush can be used with equal advantage for cleaning the tube after the operation of tracheotomy.—*Dr. Richardson.*

IMPROVED CAR FARE BOX.

The accompanying illustration shows a novel and useful improvement in car fare boxes. It will be seen



that instead of a slit or hole in which to deposit the fare, a door is provided that allows the entire hand to be thrust into the box, the deposit sliding down a funnel-shaped receptacle into the end compartment of an endless chain of boxes. The fender surrounding the first division prevents the money from jumping over into the adjoining box. Each successive deposit moves the belt one space, and dumps one fare into the box below; the deposits are kept separated, and at all times the last five are visible. A bell on the outside of the box notifies the driver of each deposit. No lamp is required for this box, as a small reflector is so arranged as to throw the rays from the headlight

down into the interior. The apparatus takes up no room, outside or inside, being flush with the sides of the door frame. The driver, being relieved of the trouble of watching and dumping the fares, can give more attention to the picking up of passengers, etc. It is impossible to rob the box with waxed strings or like devices, as upon opening the door for that purpose the fare passes out of reach, and only an empty compartment is presented.

This invention has been patented by Mr. J. R. Hare, of 63 W. Fayette Street, Baltimore, Md., who will furnish further particulars.

Darkening Oak.

To render new oak wainscoting and oak furniture dark, and give it an antique appearance, we have it from good authority that ammonia is the cleanest, best, and cheapest material that can be used. The liquid stains commonly used are apt to raise the grain of the wood, make it rough, and it is with difficulty evenly applied, whereas in the use of ammonia it is simply the fumes that color the wood, and do it so completely that it is difficult to tell whether the wood is really new or old.

A correspondent in the *English Mechanic* gives the following process of treatment, which he considers the best, after trying the various other processes used by builders and cabinetmakers to darken woods: "Oak is fumigated by liquid ammonia, strength 880, which may be bought at any wholesale chemist's at 5s. a gallon. The wood should be placed in a dark and airtight room (in a big packing case, if you like!), and half a pint or so of ammonia poured into a soup plate, and placed upon the ground in the center of the compartment. This done, shut the entrance, and secure any cracks, if any, by pasted slips of paper. Remember that the ammonia does not touch the oak, but the gas that comes from it acts in a wondrous manner upon the tannic acid in that wood, and browns it so deeply that a shaving or two may actually be taken off without removing the color. The depth of shade will entirely depend upon the quantity of ammonia used, and the time the wood is exposed. Try an odd bit first experimentally, and then use your own judgment."

A Large Price for a Bible.

A Bible was sold at auction in London the other day for three thousand nine hundred pounds sterling (about \$19,500). It was knocked down, after spirited bidding by a number of contestants for the book, to Mr. Quaritch, a dealer in rare works, and is believed to be the highest price ever paid for a single copy of any book at auction. It is known to bibliophiles as the Mazarin Bible.

The title is derived from the fact of a copy having been discovered in the library of Cardinal Mazarin in Paris, about the middle of the eighteenth century, and it is generally assumed to have been the earliest printed book. There are said to be eighteen of this edition in existence, one-half of which are in public libraries in Europe.

The copy for which Mr. Quaritch bid such a wonderful price is described in the *Art Age* as "magnificent." It is printed in double columns in type similar to Church script, and is "splendidly" bound in blue morocco. The Mazarin Bible is without date, and is variously ascribed to the years 1450, 1452, and 1455. A copy preserved in what used to be called the Royal Library at Paris contains a note stating that it was completed "in binding and illuminating" in the year 1456, which would put the probable date of printing at twelve months earlier. According to the catalogue of the Syon Park Library, the Mazarin Bible is printed with metal types. Typefounders, however, have differed on that point among themselves, some contending that it was compressed from wooden blocks, others declaring for letters cut in metal, and a third party deciding in favor of cast letters, the last in every material respect like those now in use. But, whatever kind of type may have been employed in producing the earliest printed book, it would, even at the present time, be accepted as a noble specimen of the typographic art.

The printing of the Mazarin Bible is ascribed to Gutenberg, but the fact, we believe, has never been established beyond a doubt. Mr. Quaritch, in an interview with a newspaper reporter after the sale, said that three out of the five copies of this edition of the Bible known to be owned by private parties had passed through his hands, the first being purchased by him when a young man for £590. "The present copy," Mr. Quaritch went on to say, "I have also bought for my stock, and it is purely a speculation of my own. I do not expect to keep it long."

Nova Scotia Heard From.

The Yarmouth (N. S.) *Times* thus discourses on the merits of the publications issued from this office:

"We have received the SCIENTIFIC AMERICAN Hand Book for 1885. It is a beautifully gotten up little book, filled with most valuable information for inventors and others seeking information about patents and the course to pursue in securing or renewing patents. The SCIENTIFIC AMERICAN and SCIENTIFIC AMERICAN SUPPLEMENT are certainly the best papers of the kind published on the continent, and take a front rank throughout the whole world. The student of scientific subjects and all kinds of mechanics will find the paper invaluable. Inventors and those interested in the wonderful inventions which are daily brought before the world can find no better way of keeping themselves informed than by reading these papers. The articles are all written in such a way that all can understand them, and no better engravings of the kind are made than those illustrating these articles. In a growing manufacturing community like Yarmouth such periodicals should be in the hands of every one, and the prices of subscription are so low as to be within the means of the poorest."

We are waiting to hear further from Yarmouth.—ED.

Medical Advice by Telephone, as Related in One of our Medical Journals.

Husband—My wife has a severe pain in the back of her neck, and complains of a sort of sourness in the stomach.

Physician—She has malarial colic.

Husband—What shall I do for her?

[The girl at the "central" switches off to a machinist talking to a sawmill man.]

Machinist to Husband—I think she is covered with scales inside, about an inch thick. Let her cool down during the night, and before she fires up in the morning, take a hammer and pound her thoroughly all over, and then take a hose and hitch it to the fire plug, and wash her out.

Husband has no further need of this doctor.

Danger in the Water Trough.

The *British Medical Journal* suggests a danger to horses at public drinking troughs. It believes that glanders are spread among horses in this way, and recommends a stand pipe and bucket as the safest and best arrangement for watering animals in cities. It is more comfortable for the horse, who has not to strain his neck against the collar to reach the water, the water is fresher and more palatable, and there is far less danger of its being contaminated with dust, dirt, and the germs of disease.