

Correspondence.

Photographic Method of Reproducing Pictures.

To the Editor of the SCIENTIFIC AMERICAN:

In reference to an article on this subject by Mr. Fairman in the SCIENTIFIC AMERICAN of December 10, the writer would like to make a few suggestions.

The *modus operandi* given in the above article, in short, was to take the picture to be copied, and, after rendering it translucent by giving it a light coat of paraffine, to make a negative of common printing paper from it by simple contact printing. Again, treating the negative thus made with paraffine, any number of copies of the original could be made from it.

Now it is evident that if the original picture or drawing is very valuable, a coat of paraffine would utterly ruin it, and where this is the case (as it was in the writer's experience) some other method should be resorted to. The picture to be copied was an old pen drawing. It was first placed with its face side against the coated side of an ordinary "fast" dry plate. The two were then placed in a printing frame, using a piece of plain glass to hold them in contact.

After exposure to ordinary lamplight, keeping the frame moving slightly to insure even exposure, the plate was given the usual development, resulting in a very good negative.

Some very good prints were made from this negative on aristo paper.

If printing is carried to the right point, very little of the effects of the unevenness in the texture of the paper of the original picture will show in the finished copy.

Pictures to be copied by this method must possess considerable contrast in order to give best results.

Morrill, Kansas.

FRANK E. POLSTER.

The Use of Kites for Meteorological Observations at Sea.

To the Editor of the SCIENTIFIC AMERICAN:

Since the article entitled "Meteorological Observations at Sea," in your issue of December 10, will be widely read and probably copied by other journals, it seems proper to point out that the credit for first using kites to lift self-recording instruments over the water belongs here, and not abroad. You say: "Prof. Hergesell, chief of the Alsace-Lorraine Weather Service, was the first to use kites to carry self-registering instruments aloft over the water. His first experiments on the Lake of Constance, in 1900, were followed by some very successful ones made by Berson and Elias on a trip to the North Cape." The following extract from Prof. Hergesell's report to the International Meteorological Committee shows this statement to be erroneous. Prof. Hergesell says: "In July, 1900, I had the idea of using the speed of a boat to correct the wind conditions, and I made some experiments with a motor-boat [on the Lake of Constance], but without raising an instrument. In the month of August, 1901, Mr. Rotch, in America, was the first to lift an instrument in nearly calm weather by using a steamboat which he could maneuver at will."

While the motion of a vessel had been used before to create an artificial wind, or supplement the natural wind sufficiently to lift kites, I was ignorant of such experiments, and was led to try this method on account of the impossibility, on some days, of getting here meteorological observations in the upper air. Accordingly, on August 22, 1901, in nearly calm weather, with the wind too light both on Blue Hill and at sea-level to lift the kites, they were easily flown from a tugboat, specially chartered by me to cruise in Massachusetts Bay, and bore the meteograph to the height of half a mile. So far as I know, the resulting records of the barometer, thermometer, hygrometer, and anemometer were the first to be obtained from a kite flown from a moving vessel. To ascertain whether kites could be flown from a steamship pursuing its regular course, with an assistant, Mr. Sweetland, I made the voyage from Boston to Liverpool between August 28 and September 5, 1901; and, although nearly calm weather prevailed, the eastward motion of the vessel made it possible to fly the kites, with the attached meteograph, on five of the eight days occupied by the voyage. These instrumental data were probably the first at a considerable altitude over the Atlantic Ocean, and showed that in this way observations might be secured in all weather conditions, severe gales only excepted, provided the steamer from which the kites are flown is so maneuvered as to bring the wind to a suitable velocity. An account of these experiments was given in *Science*, and the observations themselves were published with the Blue Hill observations in Vol. XLIII, Part III, of the "Annals of the Harvard College Observatory." I also presented papers on the subject at the Glasgow meeting of the British Association, in 1901, and, the next May, at the Berlin meeting of the International Committee for Scientific Aeronautics, in both of which I proposed to extend the method to the investigation of the atmosphere over the tropical oceans.

My foreign colleagues were not slow to avail themselves of the idea, for the following summer Messrs. Berson and Elias obtained meteorological observations with kites on a voyage to Spitzbergen, while Mr. Dines did the same off the coast of Scotland. Prof. Köppen also experimented on the Baltic, where, in 1903, M. Teisserenc de Bort exceeded the great height of 19,000 feet with kites flown from a Danish gunboat. Since 1902, Prof. Hergesell has made monthly flights on the Lake of Constance, and this year he succeeded in inducing the Prince of Monaco (which I tried to do two years before) to employ the yacht, from which the Prince had been exploring the depths of the ocean, for soundings of the atmosphere. Some results obtained during a brief campaign in the Mediterranean and in the neighborhood of the Canaries are described in your article.

This, however, is but the beginning of the work, for the whole region between the Azores and Ascension needs to be explored; and soundings in these latitudes up to a height of two or three miles, through the doldrums and trade winds, would help to solve some of the most important problems in meteorology and physical geography. The following resolution, which was adopted at the Southport meeting of the British Association, gives authority to my views: "The International Meteorological Committee, in accordance with the decision, at Berlin, of the International Committee for Scientific Aeronautics, believes that the exploration of the atmosphere above the tropical oceans, by means of kites flown from a specially equipped steamship, an enterprise that was proposed by Mr. Rotch in 1901, is one of the most important meteorological investigations to be undertaken in the immediate future."

To charter and keep in commission for several months a properly equipped vessel would cost about \$20,000, and I have made an unsuccessful application to the Carnegie Institution for a grant to defray a portion of this expense. The investigation is certain to be undertaken before long, but it ought to be done by Americans, who have developed the kite as a meteorological instrument, and if any of your readers will enable me to procure a suitable steamer, or ocean-going yacht, I am ready to furnish the apparatus and personnel necessary to carry out the project.

A. LAWRENCE ROTCH.

Blue Hill Meteorological Observatory, Hyde Park, Mass., December 16, 1904.

The Point of View of Some Contemporaries.

At this season of the year, when many subscriptions to the SCIENTIFIC AMERICAN publications are expiring and renewals for the coming year are being received, a vast number of letters are received by the Editor, which are often of a personal character, either commending or sometimes criticising the editorial work of the past year. Such letters are always welcome, even the few which are received of a critical character, provided it is seen that such criticisms are honestly given and with a purpose of improving the character of the paper itself.

One letter was recently received from a subscriber, whose first subscription dated back to 1846. We have a number of subscribers whose subscriptions date back to the late forties and early fifties.

The following letter, which was entirely unsolicited on our part, and which came in the ordinary course of a day's mail, was received from Mr. S. S. Knabenshue, Editor in Chief of the Toledo Blade:

"It may be of interest to you to know that, since 1871, I have been a regular reader of the SCIENTIFIC AMERICAN, and since its establishment, of the SUPPLEMENT. My five sons have been interested readers of both. Of these, three are deeply interested in scientific matters, and all engaged in electrical engineering. The oldest is an officer of the regular army; the youngest, a boy in his fourteenth year; A. Roy, the aeronaut, is my second son; Paul, who made the ascension in a gas balloon at the World's Fair in the interest of a wireless telegraph experiment, is the fourth son; Mark, the third son, is in charge of an electric light plant in New Mexico.

"I always had strong scientific leanings, and it is an interesting question how much heredity had to do with the bias of these three boys in that direction; and how much was due to environment; that is, the regular weekly reading of the SCIENTIFIC AMERICAN and SUPPLEMENT. As a purely personal opinion, reinforced by the knowledge which a father necessarily has of his sons and their education, I unhesitatingly say that your publications have been the determining factor, and I may say that the boys themselves agree with me."

Such testimony as this, from one who himself feels the cares and responsibilities of editorial work, is doubly appreciated. In similar strain comes a word of approval from the Editor of the Erie Echo:

"I regard the SCIENTIFIC AMERICAN as absolutely indispensable to any newspaper office, or to any man who desires to keep in touch with the scientific progress of the times."

Millinery "Chip."

It is not generally known that many of the handsomest summer hats worn by the ladies of this country are literally made from wood "shavings." The finest examples of this industry are produced in Japan, these wooden ribbons appearing in many forms, some of which have almost the delicacy and sheen of satin, while others resemble soft and dainty crepes. Only about fifteen per cent of the chip is exported in the form of wood ribbons, the remainder being worked into what is commercially known as chip-braid, and which is employed in the same manner as straw braid, that is, for hats, basketry, and other fancy articles.

The exports in a single year from Japan have amounted to over \$650,000, the United States being a large buyer. The trade is steadily increasing, with a constantly-growing demand, as the industry is comparatively new. While willow is considerably used in Germany, the Japanese manufacturers employ European poplar, spruce, Chinese cypress, cherry, buckeye, paulonia, false hickory, and some other kinds of wood. The chip is produced by planing with special tools, the shavings being about fifteen inches long, and one and a half in width. The leading forms are known as crepe, thin crepe, striped crepe, scaly crepe, crimped crepe, network crepe, relief figures, pushed, undulated, etc. The product takes dyes readily, and is so thin and flexible that daintiest effects in millinery goods can be secured.

There are about 120 establishments in Japan at present engaged in this industry, several of the largest sending superb exhibits to the St. Louis Exposition, where they received several gold medals. The Japanese government exhibit also contained quite a pretty collection of ladies' hats, made up in light and elegant forms, some of which were trimmed with flowers, also made of chips in imitation of wild flowers of Japan.

The annual production of chip-braid amounts to 3,000,000 bundles, each bundle containing about fifteen yards, worth in Tokyo about 25 cents per bundle. The exports are largely to the United States and Great Britain, though the chip ribbons or shavings also go to Italy and France and to China.

A Final Decision in the Knibbs Valve Case.

Readers of the SCIENTIFIC AMERICAN will doubtless call to mind the occasional reference made in its columns to the famous Knibbs patent suit, which has been pending for twenty-five years. A decision was recently reached by the United States Circuit Court of Appeals, which probably disposes of the case finally. By the decision the city of New York is absolved from paying about \$27,000,000 in damages and at least \$60,000 in costs.

James Knibbs lived many years ago in Troy, N. Y. He claimed to have been the inventor of the relief valve which is now used on every fire-engine in the city of New York. A suit for infringement was begun in 1877 for the unauthorized use of the valve by the city. In a former suit the defense of laches was set up, it being contended that the inventor had not filed his invention for a patent within the statutory time. The patent was sustained, however, on a final hearing granted on November 9, 1881. The filing of a supplemental bill and a demurrer thereto opened the entire case once more, newly-discovered points being the reason assigned for this procedure.

Lawyer after lawyer has been employed in the case. Some have died while it was pending. The case of Jarndyce against Jarndyce, of which Dickens wrote so eloquently in "Bleak House," seems a model of swift legal procedure in comparison with this; and yet there are other patent cases on record which have been before the courts even for a longer time than this Knibbs relief valve litigation.

The Current Supplement.

The current SUPPLEMENT, No. 1513, opens with an article by our Berlin correspondent on a new offshore floating dock, which is remarkable in so far as it is provided with only one side wall. Prof. G. W. Ritchey's excellent treatise on the modern reflecting telescope and the making and testing of optical mirrors is continued. A third installment of Prof. N. Monroe Hopkins' splendid series of articles on electro-chemistry likewise finds a place in the current SUPPLEMENT. The subject discussed is the theory of electrolytic dissociation. The sortie of the Russian fleet from Port Arthur on August 10 is critically analyzed on the basis of descriptions furnished by officers of the battleship "Czarévitch." This is by far the most valuable account of a naval battle in the present war that has been published. The photographs show the exact nature of the damage sustained, and diagrams are published on which the hits are plotted. Commander Peary's remarks on the North Polar expedition are concluded.

The black sands of the Quesnel River, in the Cariboo district of British Columbia, contain some platinum and osmiridium. These metals have not received much attention, owing to the difficulty of saving them.