

## Miscellaneous.

### PAINTING OF CEMENT AND PLASTER.

Much difference of opinion prevails respecting the question of painting Portland cement, and we have seen work painted a few weeks after the cement has set, which has stood well. There is one point which has a great deal to do with the question of successful painting, namely the absorbency and dryness of the brickwork itself. Many new walls, saturated with moisture, are cemented, and in this condition no paint can possibly stand if laid on too soon. It is a good and safe rule to enforce that Portland cement work should not be painted within a year of its completion, to allow it to dry thoroughly; but we are safe in saying the majority of new fronts are painted before they have been finished three months. A very desirable precaution seems to be to coat the work with linseed oil first.

The painting of plaster work requires the same care, and the lime works out in small bubbles, destroying the paint. In painting plaster, white lead and linseed oil, with a little drier, is recommended by one authority. This coat should be of the consistence of thin cream, so that the oil is absorbed into the plaster in a few hours. In a day or two another thicker coat may be applied, and a third a few days after, rather thicker, followed by the finishing coat. Four coats are not too much for good work. By the absorption of the oil into the plaster the surface becomes hardened, and may be washed. Another method to facilitate this absorption is followed by painters, which is to give the plaster two or three coats of boiling linseed oil, and then to apply the other coats of paint. We are inclined to think the application of the oil before the paint a better plan, to insure a thorough saturation of the material. The color of Portland cement, and the uneven tint it sometimes assumes, is the main reason why painting is resorted to. For this reason we think it may be worth the attention of manufacturers to turn their consideration to the subject, and those using cement as a stucco might also prevent a blotchy and uneven tint by attending to the preparation of the wall and the sand they use with the cement.—*Building News.*

### AN EXHIBITION OF POSTAGE STAMPS.

An exhibition of stamps by a society in Vienna has brought out some curious information relative to its branch of postal affairs. Some of the collections exhibited were of considerable historical interest and value, notably that of Dr. Moschkan, collected during the Franco-Prussian war. It contained the stamps and the envelopes of the German and the French field post-offices, and of the field post office of the Swiss corps of observation, a postage stamp from Alsace, issued by the North German Bund, August 1, 1870, balloon letters from Paris and Metz, the photographically reduced letters for the pigeon post, stamps issued under Gambetta's dictatorship, and others by private firms who managed the postal communication during the Commune. He exhibited the first Stamps of the German Empire, and of the French Republic, and one which bears the head of the Count de Chambord, issued by the Legitimists in 1870, in anticipation of a Bourbon restoration.

Among the portraits of postal reformers which grace the walls of the exhibition were those of Sir Rowland Hill and the Duchesse de Longueville. This heroine of the Fronde introduced envelopes in 1635 for letters carried by the Paris city post. Envelopes with an impressed stamp were used first in Sardinia in 1819. The Spanish stamps reflect, in the heads of Isabella, Amadeo, Don Carlos, and Alfonso, the dynastic changes that have taken place. A collection of Spanish stamps from 1850 to 1853 is valued at \$150. The Austrian stamps, including those for Holstein under the Austrian occupation, and for Bosnia, amount to 2,362 specimens. There are 120 postal cards belonging to the General Postal Union, and a good collection of forged stamps was shown expressly for the benefit of collectors. The verdict of the visitors was that our stamp with the head of Washington was the most beautiful one in the exhibition.

In connection with this exhibition, some figures of the operations of the General Postal Union may be interesting. It extends to twenty-five States and to the British, French, and Dutch colonies. It forwarded in the year 1879, 3,949,000,000 letters and cards. This total may be divided into 3,481,000,000 for Europe, 1,246,000,000 for America, 175,000,000 for Asia, 11,000,000 for Africa, and 36,000,000 for Australia. Including newspapers, printed matter, and samples, the Postal Union forwarded 6,778,000,000 packages, of which 5,285,000,000 belong to Europe.

Of the various European nations the English write the most

letters. The figures for 1879 are 1,176,400,000 for England, and 553,000,000 for Germany. But the economical Germans sent 123,000,000 postal cards, while the English used only 114,000,000. It is reckoned that in the whole world the daily requirements are 13,000,000 letters and cards, giving every inhabitant of the globe a yearly average of  $3\frac{1}{2}$  written communications. The annual average of European countries for each inhabitant is: England, 36; Switzerland, 25; Germany, 18; Holland, 17; Belgium, 15; France, 14; Denmark, 13; Austria, 11. In England there is a post office for every 2,463 inhabitants; in Germany, for every 5,037; in Austria, for every 5,498; and in France, for every 6,242. Switzerland possesses the most post offices in proportion.

### BALLOON PHOTOGRAPHY.

At a meeting of the Balloon Society of Great Britain held last Friday at the Westminster Aquarium, Mr. W. B. Woodbury read a paper on Balloon Photography, in which he remarked that though little had been done at present in the advancement of the science of photography for balloon purposes, yet he believed that the day was not far distant when they should be able to obtain bird's-eye views of all the principal towns and villages of the world, photographed and laid map-like before us for our minute inspection. Nothing, however, of a practical nature has yet been accomplished. The difficulties in the way were numerous; but they had been smoothed down by the introduction of photographic dry plates from 20 to 59 times more rapid than the means we have hitherto had at command. We had first to consider the fact that it was not the object we wished to photograph that was in rapid movement, but the instrument with which we were working. Let them suppose a train going at express speed; if the camera were perfectly steady the rapidity of the exposure would represent the train almost standing still, but if during the same rapid exposure the camera moved only the hundredth part of an inch in any direction, the effect on the exposed plate would be that of the train as well as the whole landscape having moved some dozens of yards, which would be fatal to all ideas of obtaining anything like a sharp or clear picture. It was evident therefore, that we required not only the most rapid plates that could be made, but also the quickest form of instantaneous shutter. The whole of the balloon photographer's picture was composed of distant objects, and therefore they wanted only such an exposure of plates as would give them the hard outlines with a slight amount of half tint. But they must not expect to get artistic pictures so much as plans. He next considered the relative advantages of photographing from a free or captive balloon, and gave the preference to the latter, as in the case of the former the exact tract of country it was wished to photograph could not be decided upon beforehand. A light rudder or sail might perhaps with advantage be attached to the balloon, to assist the cord in keeping it steadier. The principal difficulty then remaining to be overcome was the surging motion of the balloon from side to side in its captive condition; and this could be done away with by attaching two wires or cords to the camera at right angles to the line taken by the cable holding the balloon. He suggested the use of elastic india-rubber cords instead of ropes. The camera which he had constructed, with the special object of taking views from a captive balloon, was now at the Paris Exhibition. The taking of plans and villages was only one of many uses that such an apparatus as he described could be put to. In case of war its uses would be manifold. The outlines of fortifications, inaccessible otherwise to the view, could be obtained, and if an army were massed, though invisible to the opposing force, any movements would be easily detected by taking a series of views at intervals. By means of a sciopticon or other form of magic lantern, the image of the negative directly on development could be projected onto a large sheet of paper in a darkened room, and the principal outlines rapidly sketched in crayon, so that the results could be easily and quickly examined by those in command, and enlarged photographic images subsequently obtained for more careful reference. In exploring expeditions it would be of great utility, as the directions taken by rivers or streams could be observed even though hills intervened. Also to Arctic expeditions it might prove of very great service; but in these two latter instances the Montgolfier system of balloon would, he thought, have to be adopted, as few exploring parties could carry the necessary materials for the formation of hydrogen *en route*. The first attempts at balloon photography were made by the late Mr. Negretti during an ascent with Mr. Coxwell.