

Coloring Zinc Roofs.

Among recent German inventions is a simple process, depending on the use of acetate of lead, by which every kind of color is applicable to sheets of zinc. By mixing black-lead, for instance, with the salt, a very agreeable light brown hue is obtained. It is by this process that the cupola of the synagogue at Nuremberg has been painted. A sufficient length of time has already elapsed, it is said, to show that the atmosphere had no influence on the zinc sheeting of the roof, thus showing the practical value of the process in such cases. By the addition of other coloring matters light or dark shades of yellow or gray may be produced.—*English Mechanic.*

THE NEW FRENCH EXPOSITION PALACE.

The annexed engravings afford an excellent idea of the magnificent palace which has been erected in Paris for the Exposition of 1878. The palace stands on the summit of the hill, and its terraces look down not only on the Exhibition and the Champ de Mars opposite, but over the greater part of the city. The palace extends along the whole width of the Trocadéro, nearly 1,300 feet. It consists of a grand Central Hall, the axis of which coincides with that of the Exhibition, and of two wings, which, spreading east and west from the vestibule behind the hall, extend in a curve for a distance of 650 feet on each side. It contains one large theater of a horseshoe form, measuring 164 feet in one direction and 230 feet in the other. It will accommodate 7,000 persons, and will be fitted up with private boxes and the various tiers of seats necessary for public accommodation. The main entrance will not be from the Trocadéro grounds, but from the other side on the Place du Trocadéro. The entrance will consist of a large vestibule wider than the hall itself, and extending on both sides into spacious ante-chambers, which enclose the hall itself, as far as the stage in the latter. These chambers lead into the two wings before spoken of, and the axes of which intersect the back of the hall just to the rear of the stage, while the tower which terminates each wing stands forward 285 feet from that axis, so that the hall is thrown comparatively far back, partly subdued by the extended and advanced wings, but by reason of its great height and striking architectural features the most prominent characteristic of the palace. The wings contain a covered gallery 42 feet wide, and in front an open promenade about 18 feet wide, the roof of which is carried by elaborately carved stone columns. Similar terraces or

A CURIOUS RESULT OF DENUDATION.

In a paper on the volcanoes of the Haute Loire and the Ardèche, in the *Popular Science Review*, Rev. W. S. Symonds refers to an isolated rock, some 30 feet high, of twisted basaltic columns resting on granite which he found in the villages of Antraiques. This rock, an engraving of which is



herewith given, is a most remarkable monument of denuding powers of atmospheric influences: as it is evident that the basalt had flowed into a fissure in the granite, and that the granite walls have since been denuded. It is rarely that a more striking example of the rapid changes which are being made on the earth's surface by the slow action of atmospheric causes has been presented. The red color of the planet Mars has been ascribed to this same agency, it being suggested that red sandstone has resisted the denudation better than other geological formations, and hence gives its

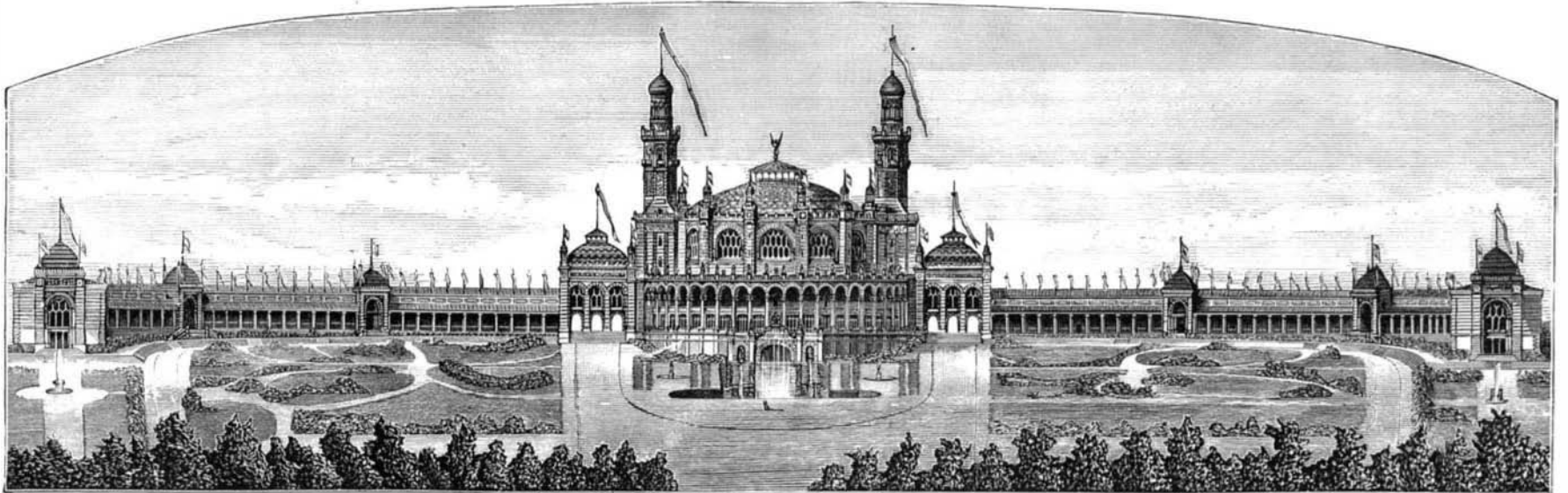
that the two observers communicate their results obtained at either extremity by electricity, and they are also in electric communication with the place where the commander of the battery is. In the one instrument, that of Garlt, the electricity merely communicates by telegraphic signs the angles obtained. In the other, constructed by Siemens and Halske, the electric current transmits automatically, by an instrument situated at one point, the angle measured by the altitude at the other. But the latter, though made with great precision, is liable to grave errors, and though much more rapid than that of Garlt, is less liked.—*English Mechanic.*

Medical Harmony.

A late number of the *Lancet* contains an article on the healing of difference between the old allopathic and new homeopathic schools, which is significant of a great change in medical opinion and the possible future fusion of the two schools. After briefly reviewing the origin of the homeopathic schism, and the subsequent warfare, the writer, Dr. Richardson, F.R.S., says that many of the allopathic physicians have renounced all the heresies of the past in the treatment of acute diseases; while homeopathic physicians have, on their side, almost entirely abandoned the use of globules, and have substituted doses in tangible form, their rule being to give a dose sufficiently large to effect its purpose, but not so large as to discomfort the patient. Both schools now use alike anodynes, aperients, opiates, anesthetics, tonics, galvanism, hydropathy, Turkish bath, and mineral waters. In short, he says, we define our practice as rational medicine, including the application of the law of contraries, but plus the application of the law of similars.

Parisian Copying Ink.

The best kinds of copying inks are, as is well known, prepared by adding a percentage of alum, sugar, and glycerin, or salt, to the extract of logwood. Such inks have a violet tint, and gradually become blacker on paper. The copy is, however, very pale at first, and is often indistinct. The Parisian copying ink is distinguished from the common kinds by its appearance more or less yellow in a liquid state, and by producing a distinct bluish-black on paper. It has the additional advantage of preserving its fluidity, while the common kinds soon thicken. Professor Gintl recommends the following method of preparing an ink which has all the advantages of the Parisian: A strong solution of log-



THE FRENCH EXPOSITION BUILDING FOR 1878.

colonnades surround the Central Hall on its Trocadéro front, and rise tier above tier to the upper gallery of the building. The two wings terminate in vestibules, thrown forward as already stated, and reached from the Trocadéro by flights of steps, for the difference between the ground level where the vestibules are placed, and the floor of the palace, is about 26 feet. The wings form approximately a semi ellipse, each being struck from four different radii. It is intended that this structure shall remain as a permanent monument of the Exhibition of 1878. We are indebted to *Engineering* for the engravings.

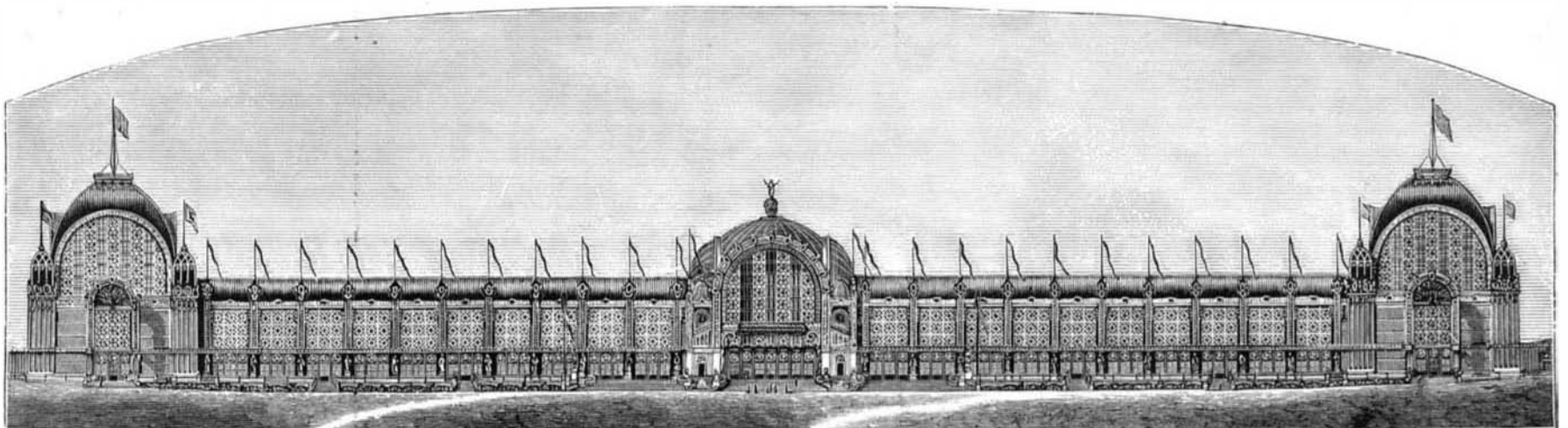
color to the general planetary surface. The rock represented in our illustration is locally known as the "Pain de Fromage," or "Cheese Loaf."

New Telemeters.

According to an Austrian paper, two new systems of telemeters have recently come into use in German coast batteries. They are based, like all others, on the principle of measuring a base line and of angles at the base, in order to determine, with the aid of tables, the height of the triangle. Without giving details of construction, it is simply stated

wood extract is treated with 1 per cent of alum, and then with as much lime water, so that a permanent precipitate is formed. Some drops of weak chloride of lime are then added, so that a perceptible bluish-black color is attained, and hydrochloric acid is added by drops till a red solution is obtained. A little gum is then added, with 0.5 per cent of glycerin.—*English Mechanic.*

IN Yucatan and Honduras musk is extracted from alligators. Their fat is used for oil, and their skin for shoe leather.



THE FRENCH EXPOSITION BUILDING FOR 1878.