

Moire Antique.

This term is familiar to dealers in silks and those who wear them, but comparatively few know why it is applied to the class of goods bearing the name, or what is the process by which their peculiar character is given to them. As with most other articles in common use, the mass of persons are content to wear them without knowing any thing about how they are produced. The name is of French origin, as well as the goods, the word *moire* meaning simply watered, and is applied to the silks which have a wavy appearance imparted to them by being stamped when damp, and are consequently also called watered. The *antique* is added because of the resemblance which these goods bear to the heavy fabrics worn by our ancestral grandams. Their peculiar appearance is owing to a slight inequality in the surface of the silk, and is produced either by an arrangement of the woof in the weaving, or by operating upon the surface after it is completed. A slight twisting of the threads composing the woof will give an undulating appearance to the silk by changing from place to place the angle of reflection of the light, but this effect is more commonly produced after the process of weaving has been completed. The discovery of this peculiar effect is said to have been accidental. A piece of silk rolled tight, when a little damp, was found to have this wavy appearance imparted to it, which suggested the idea of applying pressure, by which it is now effected. Machinery enables the manufacturer to give it any style of watering that he may choose. Two cylinders are prepared, one or both of which have slight prominences or depressions corresponding to the lines which he wishes the fabric to bear, and it is then passed between the cylinders under a heavy pressure, giving it a permanent stamp or figure. As the whole effect is produced by the reflection of the light, and as the unequal reflection depends upon the angle which different parts of the surface make with the rays, what is called the watered appearance is thus produced. The process is greatly facilitated by having the silk dampened before it receives the pressure, and still more by heating the cylinders, just as in the laundry the sprinkling of linen and the use of hot iron make the smoothing process more easy and the effect more complete and permanent. There is a great variety in the styles of watering. Some are simple and others more elaborate, the smaller patterns being more frequently known as watered and the larger more technically *moire antique*, but the process is the same, and the effect is owing to the same cause.

The preparation of this style of silks was formerly confined for the most part to France, where the art was kept secret for a long time, but it is now largely carried on in other countries, and to some extent in our own. It is a branch of the dyer's art to give to plain silks this watered appearance, and it is carried to such an extent that any style or pattern may be matched. Other fabrics beside silks are treated in the same way. What is known as moreen, a worsted material, has the same general appearance imparted to it by a similar process, but the effect is not as great, owing to the superior luster of silk, which gives it greater power of reflecting light, and thus makes the variety of the surface much greater. —*New York Journal of Commerce.*

The North Pole.

Two French gentlemen recently explored the island of Spitzbergen in a manner never before done. They have measured the mountains, mapped the whole coast, examined the vegetable products, the geological composition, etc., of the island. They have found that the long day extended over several months, during which the sun never sets, becoming intensely hot after a month or two by the unceasing heat from the sun. In this period vegetation springs up in great luxuriance and abundance. The North Pole is only a matter of 600 miles from the island, and it is thought by the two explorers, as by many others, that the pole itself, and the sea which is supposed to surround it, could be reached from Spitzbergen without many great difficulties being encountered. A singular fact noticed by the explorers, in connection with this island, is the enormous quantities of floating tim-

ber which literally cover the waters of the bays and creeks. A careful examination of the character, condition, and kind of these floating logs would, no doubt, lead to a conclusion as to whence and how they came, and probably suggest new theories for the solution of geographical problems connected with the arctic seas.

Improvements Going on South.

The South is going into manufacturing. All over the country new cotton mills are being built and put in operation. Georgia has heretofore nearly monopolized this branch of industry at the South; but now Mississippi and Alabama as well as the Carolinas are waking up to the advantage of the manufacture of cotton goods. At Camden, Alabama, a wealthy company have taken the initiatory steps to erect a large building, and fill it with the most approved machinery. At Carrollton, Mississippi, a factory is now in operation, which, in a short time, will employ one hundred and eighty spindles. In Marengo county, Alabama, they are making arrangements to manufacture on a large scale. At Cuba station, Sumter county, a factory is shortly to be in operation. These are a few of the indications that the South will soon become filled with factories. The results of the war in throwing capital into an entirely new channel, the facilities of easy intercommunication, abundance of material to be used in manufacturing, contiguity to the said material, equability of temperature, and a thousand other facts, point out this region as the future home of the factory.

Sawing Lumber.

We give the points of a long communication from Mr. J. W. Churchill, for the whole of which we have not room. He corrects some errors, in this communication, which appeared in No. 20 of Vol. XIV. viz: that for "contracts" it should read "counteracts the range of the saw," and for "running out at the log" it should be "running out of the log."

The instructions in that article comprehended the sawing of all sorts of lumber, hard and soft. Our correspondent insists that, notwithstanding the objections urged against his rules, they are correct and useful; that end play of the mandrel will make good work, and is preferable to changing the range of the saw many times a day. He has run a saw according to his rules many years, sawing millions of feet of lumber, and always did good work without changing the range of the saw, but allowing it to adjust itself to the different kinds of lumber. He thinks Emerson's rule of nine hundred feet per minute for the edge of a circular saw, is too slow, and that 16,000 feet of lumber sawed in an hour is a large amount, especially when applied to oak or maple. He objects to swedging alone, and prefers setting the teeth, as he has not swedged his saw for three years. He has sawed 2,200 feet of half-inch boards in one hour and eight minutes, and 18,000 feet in one day, always allowing end play.

The Change of Leaves.

The cause of the beautiful tint which our foliage assumes during the autumnal months, has long been a subject of investigation, and many are the hypotheses that have been put forth in explanation.

M. Fremy, who has devoted considerable attention to this subject, stated, as the result of a series of experiments, that he had succeeded in resolving the green coloring matter of the leaf (*chlorophyll*) into two components, one, a yellowish substance, he called *phyloxanthine*, the other a blue matter for which he proposed the name *phyllocyanine*. By considering the blue as more evanescent, the different shades of yellow leaves might be produced.

These views were very generally accepted till recently Fremy has again appeared, essentially retracting his original views. He now gives, as the result of subsequent experiments, the new supposition that *chlorophyll* is a simple green coloring matter very unfixed, being influenced by vegetation, thus passing through varied modifications.

M. Carey Lea, of Philadelphia, has lately advanced a theory in which he considers light as the primary cause, producing photographic changes of color.

During the healthy state of the leaf, vitality counteracts this influence, but as the fall approaches the frost begins its work; the petioles dry up, the

leaf gradually loses its firm hold upon the branch, then the action of light, no longer held in check by the vital principle, predominates, the leaf falls away, but in fading acquires those brilliant hues that will soon variegate our forests.

MISCELLANEOUS SUMMARY.

It is stated that the salt mines of Nevada throw in the shade all others known in the United States. One bed is reported to cover 52,930 acres, yielding 2,000,000 bushels annually of salt, ninety-five per cent fine. No bottom to this salt bed has ever been discovered. As deep as any work has gone, the bed is solid rock salt, and from a depth of thirty-five feet the salt water comes so rapidly as to prevent work without efficient working arrangements. The salt water wells up to the surface and overflows the large floor from which the fine white salt is continually gathered. This floor, several acres in area, has been so well leveled that the water flows evenly over it, and this, by exposure to the atmosphere, is rapidly evaporated, leaving a stratum of fine salt. This yield and production go on continually, and the more rapidly it is removed the better the quality of this salt.

M. G. PLANTÉ has communicated to the Academy of Science at Paris, a description of his new apparatus for the production of ozone, by using electrodes of lead, in place of platinum, when ozone is sought by the electrolysis of water. He asserts that he can secure a much larger proportion than is obtained in the usual way.

ARTIFICIAL DIAMONDS.—A correspondent of the *Mechanics' Magazine* details a process he has employed for crystallizing carbonic acid by means of a continuous electric current. At the end of three weeks he obtained a number of milky-white crystalline bodies, which, from their resisting not only the strongest acids, but also the oxygen flame, he more than intimates are artificial diamonds.

THE Isthmus of Suez Canal appears decidedly destined to become a "great fact." Messrs. Bazin & Co., of Marseilles and Alexandria, advertise that as regular transit service by the canals of the Isthmus of Suez is about to be established, they will be shortly prepared to receive and forward goods.

OFFICIAL information has been received from Madrid of the confirmation of the Royal Order, granting to Major General W. F. Smith, President of the International Ocean Telegraph Company, the right to establish lines of submarine telegraph between the United States and the West India Islands by way of Cuba.

THE needle-gun has again been tried at Chalons, and found wanting. About one hundred and fifty of these weapons were put into the hands of the guards, and the commission has reported that these rifles are not suitable to French troops.

ARCHED floors of concrete, or beton, a mixture of broken stone, sand, and hydraulic cement, are being put down in Paris without any support of vaults, girders, or the like. The material is simply packed in or molded on timber centerings, which are withdrawn when the concrete has "set."

THE largest masses of gold ever found were—first, that found at Ballarat, Australia, in 1859, which weighed 224 lbs.; second, that found in Calaveras county, Cal., in 1854, which weighed 195 lbs.

CALIFORNIA is becoming a wool-manufacturing, as well as wool-growing country. A company for manufacturing woolen cloths has lately been incorporated at Marysville, and another at Stockton.

It is said that wood can be rendered unflammable by coating it with a preparation composed of a solution of potash thickened with clay.

GOOD STEEL PENS.—We are using some of Snow's round pointed pens, which give good satisfaction. There are twelve different grades, adapted to every variety of hand. We consider them a superior article, free from the annoyance of scratching, and next to the gold pen for ease of handling. They can be obtained of J. P. Snow, 47 Liberty street, New York City.