

For the Scientific American.
Carpeting.

The progress of almost any of the arts may be safely taken as an index of civilization. The arts, indeed, are so intimately interwoven, that one of them can scarcely flourish without giving rise to and receiving support from others. This is particularly the case in regard to the manufacture of carpets: which, like other branches of weaving, has received improvements at every hand, and has lately made important advances. The very fact of the existence of such a manufacture speaks volumes as to the increase of our domestic comforts.

In the superficial texture of the common carpet, nothing appears to distinguish it from an ordinary web; and a first observer is at a loss to imagine by what means its variety of colors can be produced. On examining the figure more narrowly, it appears that the designer has labored under considerable difficulties: for, in many places where purity of color would have been advantageous, a mixed color of the warp and weft, only is to be found, while scarcely any gradual shading of the tints depending on the nature of the figure is to be seen. A still closer examination explains at once the source of these imperfections. The ingrain or double carpet is found to consist of two contiguous webs, intermingled with each other so as to produce the pattern; each of these webs, if woven singly, would have a striped appearance, being partly colored in the weft. One set of colored stripes is thus imposed upon another; and in designing the colors of the pattern, no selection beyond what is afforded by the judicious arrangement of these stripes can be made. The number of full colors is thus very limited and these can only be obtained where weft traverses warp of the same color. To bring up then a part of the figure full red, *red warp* must be traversed by *red weft*: these colors can be immediately concealed by sending the threads to the other web, but were they to remain long there, both webs would become monotonous. It is, therefore, extremely difficult to avoid a strong tendency to striping in the colors, and except in the principal part of the figure, the colors can hardly be well managed, the secondary embellishments being almost matters of chance. Yet, in the face of all these difficulties, patterns of great beauty are being continually formed on the carpet loom.

The invention of the *triple carpet*, invented by Thomas Morton, of Kilmarnock, Scotland, has removed these difficulties. This carpet is composed of three webs, which interchange their threads in order to produce the pattern. The primary object in the introduction of the third web, appears to have been the obtaining of greater variety and brilliancy of coloring; but another curious effect has followed, that the two sides of the carpet are necessarily counterparts to each other. To a certain extent the figure of the under must depend on that of the upper side, since threads may be needed from the *under* web to produce what is wanted in the chief pattern on the *upper* side, but there still remains the choice of an interchange of threads between the two inferior webs. It is obvious that the tendency to striping must be much less on this than on the common ingrain carpet, and that the designer having a far greater choice of colors may produce effects that could not before have been obtained. After the principal figure has been determined on, the skill of the designer is most severely exercised on the *wrong* side of the carpet. His choice of materials is indeed as great as with the common ingrain carpet, but then he is hampered by the restriction in figure, and can only be entirely at ease *opposite a piece of plain texture* on the other side. The superior beauty of the triple carpet over the common ingrain or two-ply carpet is at once acknowledged: It possesses almost all the freedom in coloring of the floor-cloth or paper-hanging while its great thickness and comparative cheapness bring it into competition with the more expensive kinds of carpeting.

The introducer of this texture (Mr. Morton) has conferred on us a very great favor; he has furnished us with a higher embellishment for the interior of our dwellings, and

presented to us another evidence of the active benevolence and social disposition of man. And it is agreeable to reflect, that in the nursing of the idea and the carrying of it into effect, he must have felt a pleasure much more intense than is likely to be experienced by any of the multitudes who will enjoy the fruits of his abilities. GILROY.

(To be continued.)

Spots in the Sun.

We find that these spots are not fixed, but are continually dashing along the centre of the sun. Now, when we come to the consideration of the spots themselves, we find them characterised by certain remarkable phenomena, which will enable us to ascertain their cause. A spot never appears twice in the same place: but although they are not confined to a point, they are confined to regions. They always appear in the Sun's torrid zone. We never find the spot breaking out beyond that belt. Then, again, on looking more minutely, we find the spots themselves have a motion—a motion besides that which the rotation of the Sun causes, and it is most peculiar. We find that the spots which appear North of the Sun's Equator, move slowly toward the North, till they get to the temperate regions and then disappear. No instance has been known of spots formed in the North going South. Just so, spots of the South move towards the South temperate zone and disappear.

There is still another circumstance characterizing the mode in which they disappear. Sometimes they go on to the Sun's temperate regions and then die away. At other times, they do not disappear in this manner, but split up just as if they were exploded by some violent force. This phenomena I had the good fortune once to witness. It is most remarkable. It has been compared to this:—Suppose a person to be standing on a frozen pond should take up a piece of ice and cast it from him. Now, this mass of ice would be broken into a vast number of fragments which would be scattered over the surface of the pond. This is exactly the manner in which these spots appear to be dashed and scattered over the surface of the Sun.

These spots are supposed to be hurricanes, or violent winds in the Sun's atmosphere. But can winds exist in the sun? What is the cause of winds is simply this: The atmosphere in different portions of our globe is unequally heated. If all parts were heated in the same degree, there would be no winds. One cause in the difference of heat on the Earth is the shining of the Sun. At the Torrid Zone his rays are vertical, or nearly so, which renders his heat intense, while at the North and South, his rays are very oblique; consequently, the degree of heat in those regions is much less than it is at the Torrid Zone. Now, it is impossible that this cause should operate to produce winds in the Sun. There is another important cause, however, of winds in the Earth which may exist in the Sun, viz; a difference in materials. This difference is such that if the rays of the sun should come down exactly the same on all parts of the Earth, the difference in the degrees of heat would be very great. Take, for instance, a case of the sun shining on sand and on the water. The sand on the margin of a river may be scorching hot, while the water is very cool. Now, where are the hot regions on the sun, and where are the cold? Where is the Continent? and where is the Ocean? Now, this inference is within the range of science. There is, however, a difficulty in carrying the explanation out. It is very probable that the phenomena of these hurricanes of ours are owing to the trade winds. Now we cannot determine trade winds in the body of the Sun. The question with respect to these lies open for farther observation.

Here, then, is another field of most engrossing speculation. This even, that these surging in the Solar atmosphere, are the keys by which future generations may unlock his character, shrouded though now he is in his noble and unpenetrable splendor. This is the wing on which Intellect may pass where vision never can, and explore the hidden Orb, his continents and oceans, his plains and majestic mountains. And why incredible?

Why should not Intellect pass as of yore, where the feeble eye can never reach. For note the history of this very discovery! Once an acorn, already it has become a young oak, with many branches, and nought shall hinder it to stretch yet farther toward the skies? When Galileo through his rude telescope first noted a few dark specks on the disc of the burning Sun, that Globe of fire, as people thought, men were all struck in amaze, and because of their amaze almost would have stoned him. Time rolled by, during which some thought that the spots were the ashes of the burned Sun; others that they were the dark souls of the punished floating in fire. A great man then analyzed the spots and determined their character. By degrees, and only by degrees, and by the efforts of separate thinkers, they have come to be considered as a class, and those laws sought to be discerned on which deeper questions certainly depend. Tell me not that thought shall stop or the Human Intellect here be stayed. The mighty avalanche grows among its native heights unseen by Man, silent and unknown for ages, but as its mass enlarges, though it be but by the fall of flake after flake of the downy snow the moment of its freedom is approaching—the moment when delivered from bondage by a stroke of sunlight, it shall thunder to the plain, and the mountains shall shake with the echoes of its powers.—*Professor Nichol.*

Artisans in Persia.

The King is considered to have a general right to the labor of artisans; but he does not commonly exercise the right, receiving instead a certain tax, the amount of which varies according to the man's income. But if a man gets a reputation for any particular excellence or skill in any trade, the king, or the governor of the province where he resides, sends for him, and makes him work for the monarch and for the courtiers and great men, and he may think himself well off if he can get them to pay him even such miserable wages as may enable him just to keep from starving. This makes every man anxious to avoid the reputation of being an expert workman, or of having made improvements in his art. Mr. Fraser, in his "Narrative into a Journey into Khorasen," mentions a man who made some improvements in pottery, so far as to manufacture a sort of porcelain, resembling tolerable china ware. His fame quickly spread, and soon reached the court. When the king heard of it, he sent an order for the man to repair immediately to the capital, to make china for the Shah. The poor fellow, who knew the consequences, was terribly frightened at this order. He went however, but not to make china. He scraped together all the money he could, and sold every thing he had to raise a bribe for the prime minister, whom he entreated to tell the king that he was not the man who made the china; that the real potter had run away, nobody knew where, and that he himself had been put under restraint by mistake, and prayed to be released. The prime minister put the money in his pocket, and told the story to the king, who sent a release to the poor man, who joyfully returned home, vowing that he would never more make a bit of china, or make any kind of improvement as long as he lived.

[There are more than kings who consider that they have a general right to the labor of the mechanic, but the nation that would progress in science and art must encourage her mechanics and artisans. Wherever we find labor degraded—there do we find barbaric tyranny exalted.]

The Rich Man and Day Laborer.

A merchant who is avaricious as opulent has recently excited some public attention at London. He had obtained at the cheapest possible rate a poor day-laborer to do some work in his house. This unfortunate man, fatigued with work, represented to the merchant's wife, that with so low wages he could not procure a glass of beer to quench his thirst. The compassionate woman gave him a tankard of ale, but the husband learned this circumstance on his return, and when he settled with the laborer, retained the value of the drink; the poor man exclaimed against it, and raised so great an uproar that the police took him to prison. The next day when he

was called before the judge he explained the affair and was discharged on the payment of two shillings, but the merchant had another account to render to justice; he was condemned to pay fifty pounds sterling as a fine for having sold beer without a license, and the poor laborer, as the informer of the offence received a third of the sum.

Young Men should read Good Books.

We have never known a young man who was not fond of reading become either as intelligent or moral as those who with a fondness for reading chaste and useful works, indulged such a taste whenever opportunity offered.—We have always hopes of a young man when we see him purchasing books instead of cigars or tobacco. Mark such a young man and you will see him certainly become one who is looked up to when he becomes a man. Three cents spent every day for cigars, or other nonsense, if treasured up for books, will purchase eleven dollars worth of books in the course of a year, and just look at the difference of the application. Money spent for books, is like purchasing that kind of food which invigorates the soul and nourishes it for noble actions, while money spent in the ball room or theatre, or for the gratification of an evil physical taste, is like purchasing that which takes away the proper nourishment of the mind and certainly is injurious to the body. Young men should read good books.

Interesting Dutch Colony.

The Holland Immigrants recently settled in Iowa, have named their new settlement 'Pella' from Pella beyond Jordan, to which the early Christians fled upon the destruction of Jerusalem by the Romans. It is two or three months old, and numbers 800 inhabitants. Large numbers are to join them in the Spring when their Pella will suddenly become a populous prairie town. It is a singular sight, says a correspondent of the Christian Intelligencer, the velvet jackets and wooden shoes of these Puritans of the 19th century, in the midst of the prairies of the New Purchase, that stretch from the Des Moines to the Cheque, in Central Iowa. They are living in camps covered with tent-cloth, or grass and bushes—the sides barricaded with all sorts of odd looking boxes and chests from the Netherlands. These people are respectable and intelligent. When they took the oath of allegiance to the United States, a few weeks since, but two made their marks. Many of the leading men possess unusual refinement and education.

Charts of the Winds, Currents, Etc.

A series of charts has just been published by Lieut. M. F. Maury, superintendent of the national observatory, prepared by authority of Commodore Warrington, chief of the naval bureau of construction, designed to show the force and direction of the winds and currents of the North Atlantic Ocean. Accompanying these charts there is an abstract log, designed for shipmasters, in which they can enter their daily run, currents, thermometrical observations, &c. The charts will be given to shipmasters who are willing to keep the above log, and forward it to Washington, on their return. The object is, by a succession of observations under different circumstances, and at different seasons, to verify the currents of wind and water known to exist in and over the Atlantic, and which, when verified, will, it is obvious, afford some new guide, as to the course which vessels should steer at particular seasons.

Copies of these charts and the abstract log have been left with the different collectors, and will be furnished to such masters of vessels as are willing to aid the praiseworthy object for which this enterprise was undertaken.

Frederick the Great and Zimmerman.

Dr. Zimmerman the author and physician of celebrity, known by his works on Solitude and National pride, went from Hanover to attend Frederick the Great in his last illness. One day, the King said to him, "you have, I presume, helped many a man into the other world?" This was rather a bitter pill for the doctor; but the dose he gave the King in return was a judicious mixture of truth and flattery—"Not so many as your majesty, nor with so much honor to myself."