

Science and Art.

The Effect of Color upon Health.

From several years' observations in rooms of various sizes used as manufacturing rooms, and occupied by females for twelve hours per day, I found that the workers who occupied those rooms which had large windows with large panes of glass in the four sides of the room, so that the sun's rays penetrated through the room during the whole day, were much more healthy than the workers who occupied rooms lighted from one side only, or rooms lighted through very small panes of glass. I observed another very singular fact, viz., that the workers who occupied one room were very cheerful and healthy, while the occupiers of another similar room, who were employed on the same kind of work, were all inclined to melancholy, and complained of pain in the forehead and eyes, and were often ill and unable to work. Upon examining the rooms in question, I found they were both equally well ventilated and lighted. I could not discover anything about the drainage of the premises that could affect the one room more than the other; but I observed that the room occupied by the cheerful workers was wholly whitewashed, and the room occupied by the melancholy workers was colored with yellow ocher. I had the yellow ocher washed off, and the walls and ceilings whitewashed. The workers ever after felt more cheerful and healthy. After making this discovery, I extended my observations to a number of smaller rooms and garrets, and found, without exception, that the occupiers of the white rooms were much more healthy than the occupiers of the yellow or buff-colored rooms; and wherever I succeeded in inducing the occupiers of the yellow rooms to change the color for whitewash, I always found a corresponding improvement in the health and spirits of the occupiers.

[The above is from a correspondent of the London *Builder*, and is very important information. We are framed with natures which are influenced by color; but the manner we are influenced is not yet sufficiently understood. Chevreul has investigated the laws of color relating to contrast, so as to arrange different colors in a correct manner to produce the most pleasing effect upon the vision; but we know very little of the laws relating to health and color. These laws can only be discovered by observation and experiment. We hope this subject will meet with more general attention and further investigation.]

Wonderful Fountains.

The fountains of the Crystal Palace at Sydenham, Eng., are among the greatest wonders of the world. Two huge fountains throw vast jets of water to a height of 280 feet. Two towers are erected on the highest part of the grounds, each 270 feet high; powerful engines take water from artesian wells 575 feet deep, and throw it to the top of these towers, whence it descends and feeds the fountains. The total weight of each tower, when the fountains are playing, is over three thousand tons.

Besides the two colossal fountains, there are ten lesser ones, that throw jets one hundred feet high, as well as almost countless smaller fountains, in addition to water-temple, cascades, &c., and several thousand small jets, requiring 120,000 gallons of water per minute to supply them. Ten miles of iron pipes are required to conduct the water that feeds these works. The sight, when they are all in full play, is said to be magnificent. The spectator sees before him a group of basins, arranged or terraces that rise above each other, the Crystal Palace building crowning the summit; and each of these basins seems alive with jets flashing in the sunshine, and crossing and recrossing each other, while cascades diversify the scene, and the two colossal fountains shoot to a dizzy height.

It is said that there is not an ounce of that famous perfume, pure *otto of roses*, sold in our country. It is adulterated before it is sent from Egypt—the country which furnishes the almost entire supply.

Growth of Mineral Earths.

E. Merriam states that the floor of the Mammoth Cave in Kentucky is covered by three or four feet of dirt, yielding about three pounds of nitrate of lime to the bushel; and such is the condition of the atmosphere of the cave that the dirt, after being lixivated and thrown back from the hoppers in the cave, re-impregnates as fully in three years as it was before lixiviation. Thus the supply is inexhaustible. Glauber and epsom salts are abundant in some distant apartments of

the cave. Pebbles, chalcedony, including geodes lined with crystals, flints, fibrous sulphate of lime, crystallized carbonate of lime, oolite, chalk, red and gray ocher, calcareous spar, gypsum and soda are found in the cave.

Plate Glass.

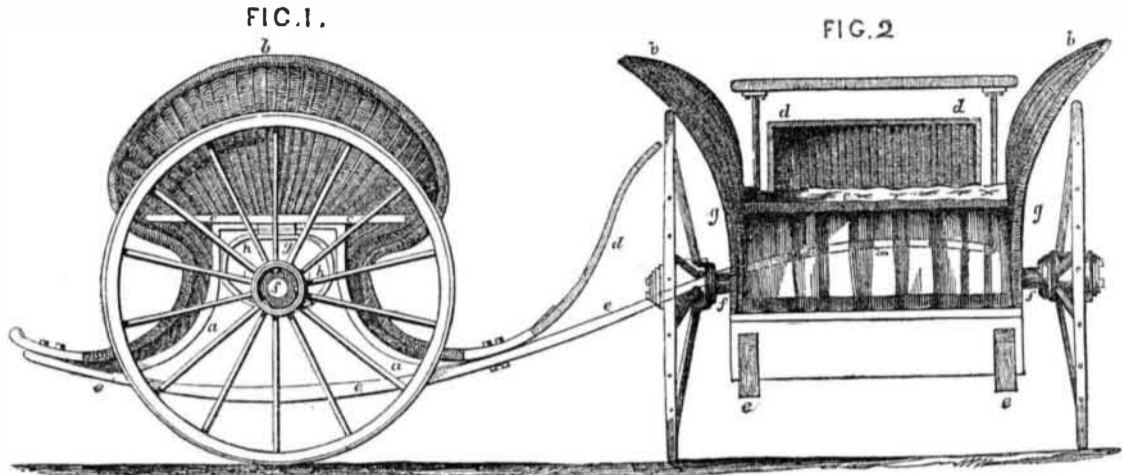
The Albany *Knickerbocker* states that the plate glass manufactured by the American Plate Glass Company of this city is the invention of John P. Pepper, of Albany. This is really news to the scientific world. Plate glass was manufactured before Mr. Pepper was

in existence; and the plate glass of the company referred to is made at their works, East Brooklyn, by Joseph Dickson, the introducer, but not the inventor of the art.

Artificial Stone.

Fifteen parts of clean sand, five of plaster of Paris, and three of lime, mixed with animal blood, and made into a thick paste, then molded into any form, becomes very hard, and if not exposed to the weather, will endure as well as natural stone, which it resembles in appearance.

IMPROVEMENT IN CARRIAGES.



Improved Carriage

This invention, which has reference to an improved construction of vehicle, denominated the "kophilon" cart or carriage, consists of a light, open, frame-work body, provided with sides or wings extending over and above the tyres or upper portions of the wheels in an arched or shell-like form, the axles being secured through the intervention of double C springs to the underneath fixings of the seat in such a manner as to work freely within the center of the open frame of the body.

Fig. 1 represents a side elevation of a two-wheeled vehicle of the improved construction; fig. 2 a back or end elevation. *a a* is the open frame-work body, *b b* arched or shell-like sides or wings; *c c* is a top framing or seat, capable of being adjusted to the accommodation of two or more persons; *d d* is a dash board; *e e* are shafts attached to the lower framing, extending throughout the entire length of the body in such a manner that the line of draught may be below the axis of the wheels upon which the carriage runs; *f* is

the axle; *g g* are blocks securing the springs to the underneath framing of the seat; *h h* are the springs. Either single or double bodied vehicles may be constructed on the principle above described, but for two-wheeled carriages an arrangement of seats is preferred, by which the persons may be conveniently seated in couples, back to back, and the sides or wings, where great lightness is required, may be formed of wicker work.—[London Engineer.]

A New Sugar Plant.

Mr. Wray, an American gentleman residing in Paris, in a communication to the London *Times*, describes a new plant of the sugar-cane species called the "Imphee," the culture of which seems destined to bring about a revolution in the production of sugar. A Chinese variety of this plant called the "Shurgo" has been recently cultivated with some success in French Algeria. But a far more valuable species is the "Zulu-Kafir," of which Mr. Wray has fifteen varieties, collected in Cafferland. Sugar manufactured from these plants was first imported into Europe in the beginning of 1854. The plants vary in time of growth from seventy-five to one hundred and thirty days, the most precious requiring only from seventy-five to ninety days to arrive at maturity, others, again, ninety to one hundred days, and so on up to the gigantic "Bim-bischu-a-pa," which requires one hundred and thirty days, and reaches a height of thirteen feet. The Chinese kind, even in the luxuriant soil and climate of Algeria, does not ripen in less than one hundred and sixty days, and is less full of juice than the Caffer variety.

Palace Discovered Underground.

The remains of a magnificent palace have been discovered under a garden in the Isle of Capri. It must not only have been splendid in structure, but in situation, commanding a view of the Bay of Palermo and Vaples.—Marble of various colors were used in its construction, and all its apartments, so far as the examinations have proceeded, are of the most spacious and elegant character. The doorway is twelve feet wide, and of white marble, and the rooms are paved in mosaic, while the walls are painted red, blue, yellow, &c. Several coins of the reign of Augustus and Tiberias have been found, some of them disclosing the curious fact that the coins of one reign were at times recoined in another.

Frazee's Saw Mill.

As we have had a number of inquiries respecting the above named saw mill, which we could not heretofore answer. We now state, for the information of all inquirers, that one of these

mills, has recently been put up at Hoboken, near this city, for the express purpose of showing its construction and operations. It is operated by a small steam engine; and its parts, which are few and simple, can be easily disengaged, taken down, and put together, so as to render it capable of being removed without much trouble from place to place, as the timber is sawed up around it, in order to save the trouble and expense of drawing logs a great distance to it. The saw is upright, and is not strained by either gate or spring, but plays between guides—the upper end unconnected, the lower end secured to a lever, uniting it with the eccentric wrist pin on a driving fly wheel.

Manufacture of Chinese Porcelain.

Jerome Nickels, the Paris correspondent of *Silliman's Journal of Science*, gives a brief description of a work recently published in that city on the above named art, by M. Julien. The Chinese made porcelain as early as 185 B. C. The porcelain paste used by the Chinese is a mixture of kaolin, which is infusible in the furnace, being merely baked. The glazing of the famous Sevres' porcelain, of France, is of pure flint, which is more difficult to fuse than the Chinese glazing.

Literary Notices.

AGRICULTURAL JOURNALS.—No better evidence could be produced to show the amount of intelligence among our farmers than the great number of publications now issued devoted to agricultural interests. We can remember when there were not over three such journals in the whole country. Now every State has one, at least, and some of the older States support several. We are led to make this statement upon receiving a copy of the *Wisconsin Farmer*, handed to us by Mr. Powers, one of its editors. This journal is issued monthly at \$1 per annum. It is handsomely got up, and contains a large amount of useful and instructive matter in reference to the farm and garden. We are glad to know that it has a good circulation.

HAND-RAILING SIMPLIFIED.—The above work, by Robert Riddell, of Philadelphia, which has been noticed in our columns, has been re-published in London, and has received the commendation of the "London Builder," who has submitted to the examination of a London stair-builder, who cordially agrees with the editor of the *Builder* in the use of the trammel, as proposed by Mr. Riddell in his work, instead of the ordinary method of lines; he considers this of great importance to the trade.

MUSPRATT'S CHEMISTRY.—Four other numbers of the above-named work—making nine published—have just been issued by Russell & Brothers, publishers, Boston, and 290 Broadway, this city. It really appears to be the most complete encyclopedia of chemistry yet attempted to be published. Number 7 contains a steel plate likeness of Berzelius, and No. 9 a very fine one of Dr. Dalton, the author of the atomic theory of matter. When finished, this work will be a very complete chemical library in itself, written up to the present state of the science. It is beautifully printed and admirably illustrated with engravings.



Inventors, and Manufacturers

ELEVENTH YEAR

PROSPECTUS OF THE

SCIENTIFIC AMERICAN.

This work differs materially from other publications being an ILLUSTRATED PERIODICAL, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Mill-work, and all interests which the light of PRACTICAL SCIENCE is calculated to advance.

Every number of the *SCIENTIFIC AMERICAN* contains Eight Large Pages, of reading, abundantly illustrated with ENGRAVINGS,—all of them engraved expressly for this publication.

REPORTS OF U. S. PATENTS granted are also published every week, including Official Copies of all the PATENT CLAIMS. These Claims are published in the *SCIENTIFIC AMERICAN* in advance of all other papers.

This publication differs entirely from the magazines and papers which flood the country. It is a Weekly Journal of ART, SCIENCE, and MECHANICS,—having for its object the advancement of the interests of MECHANICS, MANUFACTURERS, and INVENTORS. Each number is illustrated with from Five to Ten Original Engravings of new MECHANICAL INVENTIONS; nearly all of the best inventions which are patented at Washington being illustrated in the *SCIENTIFIC AMERICAN*. The *SCIENTIFIC AMERICAN* is the most popular journal of the kind ever published, and of more importance to the interest of MECHANICS and INVENTORS than anything they could possibly obtain! To Farmers it is also particularly useful, as it will apprise them of all *Agricultural Improvements*, instruct them in various *Mechanical Trades*, &c. &c.

TERMS:—\$2 a year; \$1 for half a year. Southern, Western, Canada Money, or Post Office Stamps taken at their par value for subscriptions. Letters should be directed (invariably post-paid) to

MUNN & CO.,

128 Fulton Street, New York.

CLUB RATES.

Five Copies for Six Months,	\$4
Ten Copies for Six Months,	\$8
Ten Copies for Twelve Months,	\$15
Fifteen Copies for Twelve Months,	\$22
Twenty Copies for Twelve Months,	\$28