

Scientific American.

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY

At No. 37 Park-row (Park Building), New York.

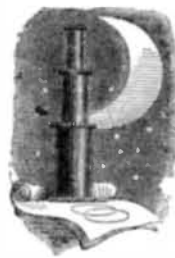
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TERMS—Two Dollars per annum.—One Dollar in advance, and the remainder in six months.
Single copies of the paper are on sale at the office of publication, and at all the periodical stores in the United States and Canada.
Sampson Low, Son & Co., the American Booksellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the SCIENTIFIC AMERICAN.
See Prospectus on last page. No Traveling Agents employed.

VOL. I., No. 14.....[NEW SERIES.].....Fifteenth Year.

NEW YORK, SATURDAY, OCTOBER 1, 1859.

SCIENTIFIC PROGRESS.



PROGRESSIVE science is the prominent characteristic of the present age. We live in an era of transition, in which we behold the customs of centuries overthrown and the conditions of social life modified and changed in a thousand ways. The discoveries of man applied to new and useful purposes have placed a power in his hand far transcending the fables of antiquity. It is but fifty-two years since the first successful steamboat floated on our waters; it is only twenty years since the first locomotive struck its iron hoof on our railroads; but twenty-five years since the first reaper was brought into public use; only fifteen years since the first line of telegraph was put up, and but thirteen years since the first American sewing machine was constructed. The revolutions which have been effected by these agencies—and by many others of nearly equal importance which we could mention if space permitted—are so great that when we reflect upon them, it seems almost impossible they could have been accomplished in the short space of fifty-years. Our new systems of public transit, our improved means of public communication, of manufacturing, engineering and mechanical operations, embrace discovery upon discovery in sufficient magnitude and array to raise a column from the summit of which we may gaze down upon the preceding centuries of physical progress, and behold them appearing like foot-tracks in the desert. We have great reason to feel grateful for the manifest achievements and progress which have been made in our day, but it would be the height of foolishness to feel satisfied with what has been done, and take up a position of self-admiration and inertness. From ancient history we learn that several nations—Egyptians, Assyrians, Greeks and Romans—accomplished, at successive periods, great works and became great powers. They exhibited much intellectual and physical activity during their dominance, and then they became sluggish and finally degraded. They all seem to have attained to a position where the conclusion settled down upon them that they had done enough; and as a consequence, by reposing on their laurels, they soon sunk into senility. The most civilized nation that would do so now would rapidly inherit the same fate, but we think no fears of such a result need be entertained in the present age of progress. The printing-press will prevent this; it is the mighty agent which keeps the public mind in fermentation and prevents it from stagnating. "Knowledge runs to and fro;" the human intellect is quickened and the successful application of one principle but paves the way for its higher application in some other department. We have a remarkable exemplification of this in one of the greatest—if not the very greatest—of the undertakings of the age, viz., the steamer *Great Eastern*. When Stephenson had completed the ponderous iron tubular bridge over the Menai Straits, and when its mighty strength had been demonstrated to the wonder of the engineering world, Branel was impressed with the idea that this was the very principle of construction most applicable for gigantic ships; and in the progress of ten years his grand conception has been realized. Its form and combination were not the results of abstractions, but experiment and strict induction. Its strength is so great that it may be suspended (like the tubular bridge) upon its extremities between the ways; while

other large ships, if so positioned, would break asunder by their own weight. Who could have imagined, fifty years ago, that the sun would have been employed to paint the human form, the lofty cataract, the romantic dell? or that the moon would take its own portrait? Or who would have conjectured that the red bolt of the thunder-cloud could have been guided to convey the transactions of senates and the results of famous battles, hundreds of miles through the sea, and over mountains and valleys, in a few seconds of time? Yet such results we have seen accomplished in our own day; and greater than these may yet be expected. Photography has made wonderful progress both as a science and an art, and yet it is but in its infancy. Nature has not yet suffered the artist to transfer her glowing colors to his prepared paper, but she may not always deny him this power.

But with all the achievements and progress of the age, let no one imagine that the field of discovery and improvement has become confined; it is still boundless as the sea and free as the winds. A few weeks ago (see page 177 of our present volume) we directed attention to improvements required in motive agents for city railroads; and we are happy to state that several of our cotemporaries have taken up the subject and responded to our suggestions. A hundred other subjects, requiring peculiar adaptations, are still open to the inventive world; and chemistry, light, heat, magnetism and electricity have many rich secrets in store as rewards for the unwearied and faithful investigators in physical science.

THE NATURAL AND THE ARTIFICIAL.

A correspondent—Thos. J. Lane, of Boston—suggests that some patriotic person should make a series of experiments in order to determine what color of a building will most completely protect the interior from the changes of temperature of the external air. If Mr. Lane will examine the proper books he will find that the whole matter of the reflection, absorption and transmission of heat has been investigated in a far more thorough and satisfactory manner than it would be by the series of experiments which he advises. We commend to him especially the researches of Melloni. The explanation of the mystery of polar animals being covered with white fur which reflects the heat, while the negro and other tropical animals generally have dark or high-colored coverings which absorb the heat, is simply this: the heat of our bodies is principally supplied by the chemical combination of oxygen and carbon in the lungs, and as the same colors which reflect the most heat emit the least, animals in cold climates are furnished with white fur to keep the heat in, while the skin of the negro is dark to allow the heat to escape.

The same correspondent has some original ideas in regard to art. He thinks that all real beauty is based wholly on utility. If he means any other utility than the utility of the beauty itself, the idea is absurd. Of what use are the spots on a butterfly's wing, or the countless variations in the petals of the pansy? There is great utility in beauty; it is a source of the purest, most refined and most exalted enjoyment, and thus contributes largely to the sum of human happiness. The wonderful adaptation of the eye to the flower and of the flower to the eye, producing exquisite pleasure by the mere arrangement of form and color, is one of the most striking proofs of the thoughtful care with which the Creator has made abundant and overflowing provision for the happiness of his creatures.

Our correspondent also objects to imitations of nature, such as vines and leaves, in ornaments for stoves, fences and buildings. He says that what is natural should be wholly natural, and what is artificial should be wholly artificial, mechanical or geometric. In regard to the illustrations which he cites in proof of his strange proposition, we agree with him. We have never seen a rustic fence or piazza made of poles with the bark upon them, which we did not think was a failure as a work of art; and the ornaments of our stoves, fences, &c., are in general sufficiently hideous. But if our correspondent should see the oak-wreath sculptured over the entrance to Trinity church, in this city, he would probably change his opinion. Indeed, his rule, in order to be true, should be exactly reversed. Natural forms, if they are well imitated, are the very ones which are always most pleasing to the eye. In the production of beauty, nature is unapproachable by the highest art, either in form or color. Delicate indeed would be the chisel which could

reproduce the petals of the rose or the stamens of the fuchsia. And we may ask—

"What skillful limner e'er would choose
To paint the rainbow's varying hues,
Unless to mortal it were given,
To dip his brush in dyes of heaven?"

OLD WORLD CONSERVATISM.

In another column will be found an article entitled "Ferries Wanted in England," copied from the Philadelphia *Ledger*, which forcibly illustrates the slowness of the English in adopting any improvements from abroad, and especially from this country. While Americans engaged in calico-printing, in ship-building, in agriculture, in every department of industry, are always on the alert to adopt any improvement from whatever source it may come, the Frenchman, the German, and the Englishman, each deems his own nation so superior that it has nothing to learn from any other. This contrast between Americans and Europeans has been exemplified a hundred times.

Some years ago the Messrs. Hovey, of Boston, embarked in an extensive series of trials to produce an improved strawberry; it was said that they fruited over 2,000,000 of new seedlings, and out of these they selected two remarkably large and fine varieties. Has any one ever heard of these being cultivated in Europe? On the other hand, our nurserymen are so eagerly on the watch for any new varieties of fruit that may be originated in Europe, that, when the "Victoria Currant" was first produced, the Messrs. Parsons, of Flushing (L. I.), paid \$30 for the first bush which they could procure.

How slow were the English in adopting from this country the sharp bow for ships, and especially in dispensing with the heavy bowsprit on steamers! Like the Chinese, they look upon the Americans as "outside barbarians," and like the Jews of old, they ask, "Can any good thing come out of Nazareth?" The comparative absence of this feeling among the Americans was most strikingly shown by Mr. Stevens when he visited England with his famous yacht. While the *America* was lying at Liverpool with the challenge flying from her mast-head to sail against all the English yachts for \$50,000, Mr. Stevens noticed a gaff on one of the English vessels which he thought was better than any other that he had seen. Notwithstanding the extraordinary circumstances of the case, and though he knew that the attention of all England was upon his movements, he immediately went to one of the ship-yards and ordered a gaff like the one which he had observed, and the *America* had that English gaff at the top of her sail when she won the great race. This greater readiness of Americans to adopt improvements, from whatever source they may come, is one considerable cause of our more rapid advance in the arts, and in material prosperity.

BURROUGH'S PAPER-CUTTING MACHINE.

A short time since we noticed the issue of a patent, through our agency, to E. Burroughs, of Rochester, N. Y., for a paper-cutting machine. We have since seen a full-sized working machine at the Inventors' Exchange, 37 Park-row, which is most perfect in its operation, and fully answers the wants of the trade, especially of job printers; being adapted to cutting card-board as well as other kinds of paper, and of capacity sufficient to cut pieces 28 inches in width, and of any length. A cut, with full description, will soon appear in this paper, meanwhile, the machine will be on exhibition at the Fair of the American Institute, and a model can be seen at the rooms of S. A. Heath & Co., 37 Park-row, this city.

IMPORTANT PATENT CASE.

[Special Telegraphic Dispatch to the Scientific American.]
UNITED STATES CIRCUIT COURT, NORTHERN ILLINOIS.
Before Judges McLean and Drummond.

SEPT. 19.—*Obed Hussey vs. Cyrus H. McCormick*.—The opinion of the Court, delivered on the 19th inst., at Chicago, held that Obed Hussey's patent for the combination of the open slotted finger and scolloped sickle is a good valid patent, and has been infringed by McCormick. Second decree for account and injunction against McCormick granted. The case was argued by Harding, of Philadelphia, for Hussey; and by Keller, of New York, for McCormick.

McCormick has succeeded in getting his patents issued, as will be seen by reference to the List of Claims published on another page. This proceeding doubtless involves something important to all makers of such machines