Foreign Correspondence.
Progress of Science, Invention, and Discovery.

LONDON, March 4th, 1854.

AMERICAN PAPER.—The editor of the "London Atlas" speaks in glowing terms of some American wrapping paper which he has received from Col. Colt, of revolving fire arm fame. The English wrapping paper is in general half rotten, and tears with great ease. This is the reason why it is all made so thick—something like English *ben leather*, but instead of being as tough as good old English ben, it is as the Irish say of their old clothes—"tender as a chicken." The American wrapping paper is not half as thick as the British, but it is tougher and will stand more fatigue.

GOLD IN ENGLAND.—There is much excitement at present among the dealers in mining stocks, and this feeling seems to be growing stronger and stronger. It relates to the general diffusion, or rather suffusion of gold among the lead and copper ores of Great Britain. A Mr. Calvert, who had lived some years in Australia, in making a geological survey of England, after his return, came to the conclusion that gold was much more abundant in Wales and some other parts of this Island than had been supposed. This opinion he formed from the geological characteristics of the country as compared with those of Australia. On a visit to some of the mineral districts, he actually was fortunate enough to pick up some pieces of gold, and this at once confirmed the truth of his previous speculations. Since the arrival of Mr. Berdan in this country, with his American grinding and amalgamating machine, the English gold fields have become still more important, for although it was generally admitted that Mr. Calvert had established the fact that gold was suffused through English copper and lead ores, still it was thought that it never could be extracted with profit. This question has apparently been settled as a public matter by Berdan's machine, still there is some controversy on the subject, and although such a man as Dr. Ansted has reported very favorably on the large yield of gold from some of the English ores, it is possible that he may have overlooked some important considerations in the experiments which were performed under his charge. My own opinion is, that some of the English ores reported to contain about two ounces of gold to the tun, will turn out to be far less rich in the genuine metal, and the end of all will be a fall in the *mining stocks*.

GEOLOGY AND COAL.—A number of practical miners, some of them possessing great experience, and a considerable amount of geological knowledge, assert that there is coal to be found at a workable depth near London. Geological savans are skeptical of this, for if true, the science, as it relates to Britain must be revised; and that it will come to this there can be no doubt in my opinion, for facts have already come to light which must lead to new and very important results in the geology of the coal deposits. It has heretofore been asserted that there was no coal below the new red sandstone, hence when any shafts were sunk in search of coal, if they struck upon such a sandstone formation, then the affair was considered settled—no coal could be found below that, and the work of sinking deeper was given up in despair. A few years ago, however, coal was found in the south of England, by boring through the new red sandstone, and the discovery has enriched the person who had the temerity to amuse those who considered themselves good judges of such folly. If it turns out that there are coal beds beneath the London chalk deposits, France will have more reason to rejoice at the discovery than England, for the same formation extends to that country.

CONDENSING CHEMICAL GASES IN CHIMNEYS.—A very great improvement has been effected in many of the chemical works here by condensing gases which used to escape out of their chimneys, and which destroyed vegetation for miles around their neighborhoods. The gases are now drawn into a horizontal flue which runs behind the furnaces and carries the gases to a square tower about 45 feet high, which has a partition running down through its middle filled with pieces of coke. Water is discharged with a force pump worked by a steam engine down one partition of the tower, and the gases being drawn up through the other partition to the top (which is covered) are there condensed, and trickle down with the water through the coke, and pass into a receiver, from which they are taken and treated in such a manner as to render them valuable chemical products. One chemical work after building a chimney 441 feet high to carry off the deleterious gases, just then discovered they did not require the chimney; that the refuse gases which it was built to carry away, could be condensed in a dwarf tower, and made into marketable products. Thus it is, improvements of the most simple character are the means of effecting wonderful reforms in every department of art and manufacture. Some of the English engineers have proposed horizontal chimneys for war vessels; the idea is a good one.

THE CRYSTAL PALACE AT SYDENHAM.—It is well known to the readers of the "Scientific American," that after the Crystal Palace was ordered to be removed from Hyde Park, in London, a joint stock company was formed, which bought the whole materials with the intention of removing them to Sydenham, a few miles from London, and re-erecting them there. The company is very wealthy, and the new will far surpass the old Crystal Palace in every particular; it will certainly be a wonder equal to some of those in fairy tales. The building is situated on the brow of a hill, from which on the one side London and the Thames are distinctly visible, and far in the distance, the ocean. The majestic proportions of the building rise from the sky line of a steep hill side, and far surpass in magnificence the structure of Hyde Park. The building, too, has gained two wings. Towers rise from the ends of the wings to a height of 230 feet. The nave is now 44 feet higher than the old one, and upwards of 120 feet wide. The pillars which support the galleries will be clothed with creeping plants, and it will be painted in such a way as to produce the effect of a vast tunnel of rainbows. An immense collection of rare works of art have been made by Owen Jones, and Digby Wyatt, who were employed to traverse Europe in search of articles of beauty and rarity, with authority to purchase to the amount of $200,000. They returned laden with the richest spoils of European art. All the richest and most beautiful gems of statuary, sculpture, architecture, and painting, are represented.

The nave is to be a splendid conservatory. Flower beds, green banks, trees and shrubs will entwine their green leaves and lovely crests amid iron pillars and flowing fountains, the water of which is raised from an artesian well 500 feet in depth, and is then forced by means of an engine into the great reservoir on the Sydenham side of the Palace, which is 150 feet square, and 20 feet deep. Here another engine drives it into the reservoirs on the summits of the towers, 230 feet in hight. Such will be the circulating system of the garden that 2,000 tons of water may be forced through its entire frame every minute.

This new Crystal Palace will cost ten times as much as the one in New York, namely, £1,000,000, about $5,000,000, before it is finished, thus showing the vast amount of capital in this country. The enterprise is one of the most original and noble ever conceived.

Perhaps the grandest idea connected with it, apart from the building itself, is the construction of a huge organ, of such power that its volume of sound will fill the immense pile. The Directors of the Palace have consulted a committee of gentlemen well skilled in the theory of music and sound, who have reported on the subject. The dimensions of an organ capable of sending its thrilling tones through the whole structure, will be 180 feet wide, 140 feet high, and 50 feet long. The internal construction will be like that of a house in stories, for the convenient support of sound-boards and pipes. The feeder of the bellows will be worked by steam, and this will certainly be a new branch of business for that useful friend of man—the steam engine. Two of the pipes of the organ will be 64 feet long, and will resemble huge chimneys, but they will be of beautiful construction, and form an ornamental frontage to the instrument. This magnificent organ will cost £25,000 pounds, (about $125,000,) I do not know whether such an organ will be built because proposed, but as the Directors have done so much on such a grand scale, it is possible they will not be behind in the music line.

INVENTIONS.—Day & Newell's Lock, known as "Hobb's Lock" in this place, has been picked, so I am creditably informed; well, it took a long time for those here to learn to do it.

The American Reaping machines are the favorites here; they are more simple and less liable to break and wear out than Bell's Reaper. A number of American agricultural machines brought over here have met with much favor owing to their neat and compact make; they are superior to the English in this respect, but it must be acknowledged that the latter have greatly improved since the World's Fair in 1851. England gained a great advantage by that Exhibition.

Remembering the character of the "Scientific American," (*nultum in parvo*) I add no more at present. Yours, R. B.

On a Chemical Cause of Change in the Composition of Rocks.

The following is an abstract of a paper read before the British Association, by Prof. Johnston. The first example of a chemically altered rock adduced by the Professor, was the rotten-stone of Derbyshire,—a light and porous substance used chiefly for polishing metals, and stated in Philips' "Mineralogy" to be composed of silica, alumina, and carbon. It is obtained from a ridge covered with "drift" 10 or 20 feet thick, consisting of brown clay, with manes of black marble, chert and rotten-stone. The rotten-stone is so soft whilst in the soil that the spade goes through it readily, but it hardens on exposure; the holes from which it is dug are sometimes only 2 feet deep, at others from 6 to 8 feet. On examining a series of specimens, Prof. Johnston found that whilst some were homogeneous, others had a nucleus of black marble; he then treated specimens of the black marble with weak acid, and found that on the removal of the carbonate of lime, there remained from 15 to 20 per cent. of a silicious substance perfectly like the natural rotten-stone.—He concluded that there existed in the soil some acid which penetrated it and dissolved out the calcareous matter of the rocks below. The agent in this case might be the carbonic acid of the air, brought down by rain; but there were instances not capable of explanation by this agency alone, and attributable to other acids, which are produced under certain conditions and exercise a much wider influence. The bottoms of peat bogs present very strong evidence of the action of acids, the stone and clay are bleached and corroded, only silicious and colorless materials being left, The source of the acid is here the same as in the former instance; the vegetable matter growing on the surface produces in its decay acid substances which exert a chemical action on the subsoil, and escape by subteranean outlets, carrying away the materials dissolved in their progress. Another instance was afforded by the mineral pigotite, formed in the caves of Cornwall by water dripping from the roof: this water contains a peculiar organic acid, derived from the soil of the moors, which dissolves the alumina of the granite and combines with it. The organic acids are very numerous and different in composition, but, agree in producing chemical action upon rocks. They are produced over the entire surface of the earth, especially over uncultivated tracts, and are the means provided by nature to dissolve the mineral food of plants; they are also amongst the chief causes of the exhaustion of soils. The author then alluded to Prof. Way's examination of some of the green-sand strata of Surrey, known as fire-stone,—a light and porous rock, containing silica in a soluble state. It was well known that common sandstone, quartz, or rock crystal were not acted upon by potash or soda at ordinary temperatures; but of the firestone 30 per cent, and sometimes 50 or 70 per cent., may be dissolved. In all such cases the silica must have been originally in a state of chemical combination with lime, alumina, or something else, which has been subsequently removed. The silica in the rotten-stone was soluble, but he had never met with instances of black marble in a bedded state converted into rotten-stone. He believed, however, that a similar cause, operating over a wide area, and during a long period, had produced the altered condition of the firestone.—Prof. Johnston then alluded to the nodules of phosphate of lime in the green-sand and crag, and suggested that the phosphorus had been derived from animal remains in higher strata, dissolved out by acids and re-deposited at a lower level. The last example was the fire-clay of the coal measures, a stratum almost universally found beneath beds of coal. It differs from the other clays both in color and composition, being whiter and containing less of those substances which acid bodies could dissolve, viz., the earthly basis, which would render the clay fusible in fire; the condition of the fire-clay might be accounted for by the action of acids developed during the production of the vegetable matter now forming coal.

Reaping Machines---Original American Inventor.

In your paper of the 25th inst., I notice the claims of priority in the invention of grain reapers, by the Rev. P. Bell, of England. Having noticed such claims repeatedly, I have concluded to speak for myself, and briefly tell my own experiments and the results in horse power grain reapers. For with me the thing was original, I neither copied from Englishmen or Americans. I was born and reared on a farm near Union Village, Washington Co., N. Y. While yet a boy in 1824, I tried my first experiments with shears, the blades of which were so curved as to present nearly the same angles of edge from heel to point while cutting. But still the shears pressed the grain forward in cutting. In 1825 I tried further experiments with a reel and sickle edge, but returned to the vibrating edges. In 1826 I completed my experiments with the reel and vibrating cutters. And I also tried experiments with vibrating bearded rods in order to gather the grain on the platform for binding and dumping the bundles. I hoped to be able to bind on the machine, and I still believe it will be done to advantage. My machine extended into the grain to the right, and it was mounted on the hind wheels of my father's lumber wagon. The wheels being large and the gearing so simple, that in 1826 a single horse drew my brother and self on the machine and cut rye at the rate of one acre per hour. The wise ones of the east viewed it as original with me, and derided me alone by calling it Harvey's Folly, but when they become astonished at its operation, they gave it the new name of Harvey's Great Amazement.

I have antique drawings before me of the said machine, which I preserved, hoping to secure some profit by taking out letters patent and by manufacturing, if I ever became able to do so. My father refused to help me in this, for he said the Patent Laws were only calculated to draw men into ruinous law suits. I tried to get help from others, but all refused to help me when they learned my father's views of the Patent Laws. In support of the main facts above, I presume twenty living witnesses can still be found. Yours, &c.,

HARVEY H. MAY,

Galesburg, Ill., Feb. 27, 1854.

[The father of our correspondent labored under a very mistaken idea of our patent laws. Had he encouraged his son and secured a patent, it would have made both him and his family wealthy. Those who patented their reapers afterwards, have become rich. We are sorry to say that there are many men who have now the same erroneous opinions respecting our Patent Laws; hence they dig and sow, while others come after them and reap the fruit of their labors. No man who invents any useful improvement should neglect to secure it by patent. Not a week passes over our heads but some inventor expresses his regret for neglecting to patent some invention for which another secured a patent afterwards and made a fortune by so doing.—[ED.

Gold Coinage of England.

There were coined at the English Mint, in 1853, 10,597,993 sovereigns, 2,708,796 half sovereigns—nearly $60,000,000.