

New Mineral Discoveries.

From the proceedings of the Academy of Natural Sciences of Philadelphia, just published, we extract the following among the mineral deposits recently discovered:

A New Locality for Amethyst.—Mr. W. W. Jefferis announced that amethysts, well crystallized, and of a rich purple color, had been found this spring, for the first time, in the northern part of Newlin Township, Chester county, Pa. They were brought to the surface by deep plowing, and were supposed to be derived from a vein of this mineral.

A New Corundum Locality.—Mr. W. W. Jefferis remarked that a vein of blue corundum, similar to that found in North Carolina, was struck, on the south side of the Serpentine ridge, in Newlin Township, Chester county, Pa., a short time since. The vein is well defined, between walls of calcasagite, in large plates of a yellowish-green color. Over 500 pounds of massive blue corundum has been taken out within ten feet of the surface.

Minerals in North Carolina.—Mr. H. C. Lewis communicated the following list of minerals which he had found near Dobson, Surry county, N. C., during a recent visit to that locality:

Native sulphur, galena, pyrrhotite, pyrite, chalcopyrite, hematite, menaccanite, magnetite, limonite, hausmannite, psilomelane, wad, hornblende, actinolite, asbestos, garnet, talc, steatite, ripidolite, chlorite.

The psilomelane occurred in a bed about 18 feet in thickness.

The magnetite was frequently polar. Native sulphur occurred in cavities in quartzite as a coarse loose powder of rounded wax-like grains, and was the result of the decomposition of pyrite.

It was also stated that rutile occurred in Alexander county, N. C., a new locality.

Fossil (?) Casts in Sandstone.—Dr. J. M. Cardeza exhibited specimens of quartz sandstone (Potsdam?) which he had found lying loose upon the soil at Dutton's Mills, Pa., in which were oblong rounded casts of sandstone, about an inch in length, and similar to one another in shape. It was questioned whether they might not be fossils.

An Inclosure in Quartz.—Mr. H. C. Lewis exhibited a crystal of quartz from Herkimer county, N. Y., in which, hanging from a bubble which moved in a cavity containing liquid, was a tuft of minute acicular crystals of a pure white color. A microscopical examination had failed to identify them with any known substance. The crystals were similar to those of many organic salts. It was conjectured that they had crystallized out from the liquid. Under a power of 75 they looked like tufts of white wool, and it was suggested that if future investigation failed to refer them to a known mineral species, it might be convenient to give them the name *Ervilite* (from Gr. *erion*, wool).

In other cavities in the same crystal there was an amorphous yellowish-brown waxy substance of unknown composition.

Menaccanite and Talc from Maryland.—Mr. Wm. W. Jefferis remarked that in Harford county, Md., near the village of Dublin, there is a vein of green foliated talc in the serpentine, which has been opened about 6 feet in length. It has furnished cleavage foliated specimens over a foot in extent. The same vein contains menaccanite in tubular crystals, well crystallized. Yellow beryl has also been found there, showing all three in the same specimen.

Sunstone in Labradorite.—Mr. Jefferis stated that on examining a specimen of labradorite in his possession, from the coast of Labrador, he found that in addition to the usual play of colors (blue and green), by turning it in another direction it showed innumerable crystals of goëthite, making it a beautiful sunstone, which, he believed, was an unusual thing, and which he had not found mentioned in the books.

Tanning in China.

A writer in one of our foreign exchanges thus describes the Chinese mode of tanning: The skins are put into tubs containing water, saltpeter, and salt. After thirty days they are taken out, the hair is shaved off, and the skins well washed in spring water. Each hide is then cut into three pieces, and well steamed, which is done by passing them several times backward and forward over a steaming oven. Further, each piece is stretched out separately over a flat board, and secured with nails, in order that it may dry gradually and thoroughly in the sun. The smoke of the oven makes the leather black, and if it is required to give it a yellow appearance it is rubbed over with water in which the fruit of the so-called wongchee tree has been soaked. Of the offal glue is made by heating it in pans for twelve hours over a slow fire. The glue so obtained is poured into rough earthen vessels, where it remains three days in order to coagulate. The solid mass is cut into pieces with sharp knives, and carefully laid upon grating-like trays to dry, which are placed in open spaces resembling the Dutch thrashing floors. The time taken in drying varies according to the season of the year; with a northwest wind it will be about five days only, but with a southwest wind as much as thirty or forty days will be required. The dregs from the offal left in the pans, as well as the hair from the skins, are sold to the farmers for manure. At Oak-sha, a village near Canton, there is an extensive establishment for the manufacture of leather, which is well worth a visit. The Mongols in wild parts of the country make clothes from goat skins, which are excellent and durable protection against the cold and wet. When the hair is taken from the

skins, carpets and mats are made from the latter. In the south of China the hides are eaten, and the hair is either sold for dung or utilized in various ways in the manufacture of Chinese feathers.

Concentration in Business.

A writer in the *Economist* warns merchants and others against engaging in business foreign to their legitimate vocation. Successful business men, he claims, are of a conservative nature. Like skillful generals, they mass their forces in solid columns, instead of thinning ranks in trying to cover a wide area of ground. Solid battalions resist successfully the fierce onslaughts of the enemy and win the day, while weak columns go down at the first charge of the bayonet. Merchants who concentrate their energies and talents upon their legitimate business and let outside matters alone, keep their affairs well in hand, and are therefore fortified against sudden disaster. When they, however, begin, in addition to selling merchandise, to go into outside speculations, they weaken their forces and try to cover too much ground. A merchant cannot run a store and farm safely side by side, either the one or the other will suffer. Dry goods and silver mines do not mix well together when the same hand guides both. A collision detrimental to one or both interests will sooner or later occur. A manufacturer should not attempt to raise sheep because he uses their fleece in his mills. His business is to see that out of every pound he buys he turns out as many yards of goods as it is possible to do and produce a good fabric. Here is enough to occupy his time profitably, without buying land and going into sheep husbandry. With many business men the trouble is not so much in making money as to keep it when it is made. They are of a restless temperament, never satisfied, always on the *qui vive* eager for speculation and ready to dabble in outside ventures. They speculate in stocks, take a venture in grain or pork, risk largely in wool or cotton, and always willing to subscribe handsomely for the shares of gold or silver mines. Such men lack the power of concentration. With divided mind, divided energies, and divided capital, they are scattered over too wide a surface, and at the first wave of a panic they go down into insolvency and financial ruin.

Not so the business man who steadily pursues his legitimate occupation. He husband his resources of energy and capital, he gathers renewed strength with the profits of every year, he looks ahead for breakers, and is fortified with a good bank account when disaster threatens the commercial world.

Conservatism in business does not allow of a trade far exceeding the bounds of capital employed. Here is also a source of danger. It is never safe to depend upon outside aid to float an extended business. The danger may be delayed when crops are splendid and the country prosperous, but sudden reactions occur frequently in trade, and money grows tight and capital timid. In such seasons the business man who has attempted to cover too much ground is often forced to the wall. Had he kept his trade under wise control he would have passed safely through the sudden flurry. Credit and character are both important in commercial affairs, and are secured only through well directed conservatism. For a man to succeed he must concentrate his powers and abilities, mark out a safe, straight line and steadily pursue it. He will find in the long run that one pursuit furnishes ample scope for all his energies, and if wisely followed will bring appropriate reward.

Boston Founded on a Gold Bed.

An artesian well is now being sunk in Boston, which, according to the *American Architect*, seems to have at least one peculiar feature. The well has been driven rather more than fifteen hundred feet without reaching any considerable spring, although there is a constant moderate flow of water into it, but it seems that at a distance of fourteen hundred feet from the surface a stratum of gold-bearing quartz, twenty feet thick, was reached and pierced. As the city is itself situated on a mass of diluvial clay and gravel, although surrounded on all sides, at a distance of a few miles, by granite and porphyry formations, it might naturally be inferred that the auriferous vein would crop out somewhere about the edge of the basin, and as "bonanzas" twenty feet thick are not only rare but valuable, possibly further attempts may be made to trace the course of the deposit. We are not informed, adds the editor, whether the material brought up by the auger proved to be very rich in the precious metal; probably it was not, but no surprising results could be expected from a random incision into the rock. Whether any one succeeds in making any profit out of it or not, the thought that Boston, alone of large cities, rests upon a plateau of gold ore may at least serve to gratify the vanity of its inhabitants.

Manufacture of Oil Barrels.

The American paper barrel makers are quite confident that barrels produced directly from pulp can be made to take the place of the barrels now used for petroleum. At present it appears to be purely a matter of cost. The barrel factories of the Standard Oil Company turn out daily 30,000 iron bound, blue painted, wooden barrels, costing \$1.35 each. The barrels are hooped by machinery, each machine, requiring a man and two boys to attend to it, hooping 1,200 barrels a day. The barrels are also painted by machinery. The saving of but one cent a barrel in cost would save the company \$300 a day.

AGRICULTURAL INVENTIONS.

Mr. William W. Hopkins, of Thorntown, Ind., has patented an improved wagon scale, the object of which is to enable farmers to have a convenient set of farm scales for general use, and one adapted to weigh the contents of a wagon in bulk. It consists in the peculiar arrangement of a set of weighing levers fastened to the bottom of the wagon body, and adapted to bear against the bolster, in combination with a graduated scale beam, also carried by the wagon body.

Mr. William I. Ely, of Freehold, N. J., has patented a harvester for cutting cornstalks while standing in the field. It is so constructed as to raise inclined or fallen stalks, cut them, and drop them upon the ground in even bundles.

Mr. Joseph Howard, of Bryan, Texas, has patented an improvement in rolling hopper planters, which consists in the construction and arrangement of the devices whereby the hopper is attached to the beams or frame of the machine.

An improved hay elevator and carrier, patented by Mr. George Rundle, of Palmyra, Wis., consists in certain novel details of construction, arrangement, and combination of a hay fork, a carrier, and devices for raising and lowering the fork and its load and for operating the carrier.

Mr. Robert N. Boston, of Chestertown, Md., has patented an improvement in the class of machines adapted for simultaneously dropping and covering corn and guano or other fertilizer. The corn and guano are placed in separate hoppers, between which is a rotating wheel whose shaft or axis projects into the respective hoppers, and is provided with teeth that agitate and assist the discharge of the contents of the hoppers. The latter deliver corn and guano, respectively, into separate pockets or receptacles, from which they are taken up by cups affixed to the ends of radial arms projecting from and revolving with the aforesaid axis. The pockets and revolving arms are between the hoppers, and a seed spout is located in front of the pockets, so that the seed and fertilizer are delivered simultaneously into the same, and thereby mingled and conveyed into the furrow.

Mr. Joseph P. Prairie, of Raleigh, N. C., has patented a combined cotton planter and guano distributor, which is so constructed as to drop cotton seed and guano at the same time in uniform quantities and cover the seed and guano, and which can be adjusted to drop a larger or smaller quantity of either or both as required.

Mr. William Rucker, Sen., of Murfreesborough, Tenn., has patented a harrow so constructed that it will thoroughly pulverize the soil, will readily pass over obstructions, will not be liable to clog, will level and smooth the ground, and may be adjustable to work at any desired depth in the ground.

A novel combination, with a plow beam, of a clevis, a pivoted bar, a spring, and a supporting and carrying arm, whereby provision is made for raking and leveling weeds, stubble, corn stalks, and grass during the process of plowing, and for allowing the raking bar to yield when meeting obstructions, has been patented by Mr. Chauncey E. Worline, of Radnor, Ohio.

Honors to Sir Henry Bessemer.

The freedom of the city of London was lately conferred on Sir Henry Bessemer, F.R.S., at a special Court of Common Council. In acknowledging the honor thus conferred on him, Sir Henry Bessemer referred to the condition of the steel manufacture before the introduction of his process, and the rapid development of the industry which that process had caused. He compared the total steel production of the country, which did not exceed 51,000 tons a year, to the present output of nearly a million tons, and the reduction of price from £50 to £10 a ton. The document conveying the freedom of the city was presented to Sir Henry Bessemer in a gold casket of very excellent design, appropriately illustrating his process; this casket was the production of Mr. J. W. Benson, of Ludgate Hill.

The Electric Light on a Volcano.

The railway up Vesuvius has been successfully lighted up by fourteen Siemens and Halske electric lamps, and, according to the *Elektrotechnische Zeitung*, the illumination of the sides and crater of the volcano is grand in the extreme. Eleven of the lamps are placed along the line itself, and the remaining three at the upper end between the terminus and the crater. Various other essays of electric lighting are reported from abroad. For instance, the Brush lamp has been introduced into the anthracite mines of Pennsylvania, and the Place de Paris at Berlin has been lighted by four Siemens lamps erected on poles over 30 feet high, and each having a power of 1,200 candles. The port of Havre will soon be lit by Jablochhoff's system, as also will a new light-house at Marseilles.

Patent Brakes on the Car of Juggernaut.

The tendency of science to put intellectual brakes on human errors and superstitions has been demonstrated a thousand times. A pretty illustration of material interference of like sort for the benefit of humanity is furnished in the action of the English magistrate in Pooree, India, who lately compelled the priests of Juggernaut to put patent safety brakes on their famous car before they could have their annual procession. It will be remembered that the car is enormously heavy, and is very apt on down grades to get beyond control and run down large numbers of the processionists.