that would be impossible and wrong. But he would have an art teaching that would suit the nineteenth century.

Like Mr. Ruskin, Mr. Wilde has a horror of this mechanical age. He pronounced against machine made ornaments, as being ugly, coarse, and bad, as compared with beautiful and durable handiwork, but he wisely observed that he only objected to machines when making machines of operatives, and not when they relieve men from ignoble tasks. They must not mistake the material of civilization for civilization itself. It is the use to which we put these things that determines whether the telephone, the steam-engine, electricity, are valuable to civilization. The workmen require to be strong, have a healthy physique, and a sense of individualism, which is the keynote of art. The lecturer appealed for schools of design, and means of teaching art to the poor, so that they can beautify their homes. He did not want the rich to possess the more beautiful things, for they have enough. One might live in a whitewashed cottage with a fireplace set with red tiles, where an ill designed and vulgarly furnished house would be unendurable. Mr. Wilde gave many practical suggestions on household decorations and art studies.—*Builder.*

CURIOUS ARTIFICIAL FORMS OF SILICA.

Curious artificial forms of silica, which are interesting as illustrating the structure of agates and chalcedonies, are produced by Messrs. Anson & Dankhurst in the following manner. The method would appear to be susceptible of forming an interesting lecture experiment:

A strong solution of an alkaline silicate (water-glass) is taken, containing a certain amount of alkaline carbonate, and a strong acid (sulphuric is recommended) is introduced by means of a pipette to the bottom of the vessel in which the solution is contained. Bubbles of carbonic acid gas at once arise, carrying with them a certain amount of the stronger acid. Around the stream of ascending bubbles silica is deposited by the decomposition of the alkaline silicate, and in a few minutes a tube is formed reaching from the bottom to the surface of the solution. This tube is at first very thin, and through its walls the ascending acid continues to act upon the surrounding silicate, the walls of the tube in consequence constantly increasing in thickness by the deposition of additional silica on its outer surface. As long as the flow of acid is kept up, so long does the tube increase in diameter by the deposit of successive layers, and the result is a hollow stalactite ringed in cross sections.

The authors note that the action can be kept up until a tube of nearly one inch in diameter is formed by forcing the acid through the walls by applying pressure to the surface, and suggest a number of means whereby the process may be varied with the same results. They then proceed to state that the natural silicious stones like agate, chalcedony, etc., and in such minerals, where stalactitic forms occur, a central core of iron or other oxide is frequently observed, which, in the opinion of the authors, appears to represent the original tube, which has subsequently been filled up, while sometimes the cavity remains more or less completely as such. These stalactites, of course, do not grow up in regular forms, but are irregular in form, and branched more like those of coral than anything else, according to the direction taken by the gas bubbles in escaping from the end, or from points of least resistance along the sides of the tube. The authors consider that the banded stalactitic growths that occur so frequently with siliceous minerals, have been produced in a manner very analogous to the stalactitic forms produced in their experiments. They have been able, by the use of acid solutions containing various metallic and earthy salts, to cleverly imitate the coloring of natural minerals, such as jaspers, moss agates, onyx, etc.; and they conclude that under suitable conditions of heat and pressure, natural agates and allied siliceous minerals might be imitated, both in form as well as in hardness and stability.

The paper is published in full in the *Mineralogical Magazine*, current volume, to which we refer for many interesting details which we have been compelled to omit.

THE COLLECTION OF AMERICAN WOODS AT THE CENTRAL PARK MUSEUM.

The directors of the American Museum of Natural History are now preparing for exhibition in the Arsenal building, in Central Park, one of the finest collections of native woods ever brought together. When rendered complete by the addition of 26 specimens that are expected to arrive before winter sets in, the collection will embrace specimen-blocks from each of the 420 trees indigenous to this country, and most of which have some economic or commercial value. As is usual in collections of this kind, each specimen-block is sawn longitudinally, diagonally, and transversely, so as to show the characteristics of the wood.

Among the many curious specimens in the collection now being prepared for exhibition, says the *New York Times*, one which will excite the greatest curiosity, is a specimen of the honey locust, which was brought here from Missouri. The bark is covered with a growth of thorns from one to four inches in length, sharp as needles, and growing at irregular intervals. The specimen arrived here in perfect condition, but in order that it might be transported without injury, it had to be suspended from the roof of a box car, and thus make its trip from Southern Missouri to this city without change. Another strange specimen in the novel collection is a portion of the Yucca tree, an abnormal growth of the lily family. The trunk, about two feet in diameter, is a spongy mass, not susceptible of treatment to which the other specimens are subjected. Its bark is an irregular, stringy, knotted mass, with porcupine quill-like leaves springing out in place of the limbs that grow from all well-regulated trees. One specimen of the Yucca was sent to the museum two years ago, and though the roots and top of the tree were sawn off, shoots sprang out and a number of the handsome flowers appeared. The tree was supposed to be dead and thoroughly seasoned by this fall, but now, when the workmen are ready to prepare it for exhibition, it has shown new life, new shoots have appeared, and two tufts of green now decorate the otherwise dry and withered log, and the Yucca promises to bloom again before the winter is over. One of the most perfect specimens of the Douglass spruce ever seen is in the collection, and is a decided curiosity. It is a recent arrival from the Rocky Mountains. Its bark, two inches or more in thickness, is perforated with holes reaching to the sapwood. Many of these contain acorns, or the remains of acorns, which have been stored there by provident woodpeckers, who dug the holes in the bark and there stored their winter supply of food. The oldest specimen in the collection is a section of the *Picea engelmanni*, a species of spruce growing in the Rocky Mountains at a considerable elevation above the sea. The specimen is twenty-four inches in diameter, and the concentric circles show its age to be 410 years. The wood much resembles the black spruce, and is the most valuable of the Rocky Mountain growths. A specimen of the nut pine, whose nuts are used for food by the Indians, is only fifteen inches in diameter, and yet its life lines show its age to be 369 years. The largest specimen yet received is a section of the white ash, which is forty-six inches in diameter and 182 years old. The next largest specimen is a section of the *Platanus occidentalis*, variously known in commerce as the sycamore, button-wood, or plane tree which is forty-two inches in diameter and only 171 years of age. Specimens of the red-wood tree of California are now on their way to this city from the Yosemite Valley. One specimen, though a small one, measures five feet in diameter and shows the character of the wood. A specimen of the enormous growths of this tree was not secured because of the impossibility of transportation, and the fact that there would be no room in the museum for the storage of such a specimen, for the diameter of the largest tree of the class is thirty-five feet and eight inches, which represents a circumference of about one hundred and ten feet. Then, too, the Californians object to have the giant trees cut down for commercial, scientific, or any other purposes.

To accompany these specimens of the woods of America, Mr. Morris K. Jesup, who has paid all the expense incurred in the collection of specimens, is having prepared, as an accompanying portion of the exhibition, water-color drawings representing the actual size, color, and appearance of the fruit, foliage, and flowers of the various trees. Their commercial products, as far as they can be obtained, will also be exhibited, as, for instance, in the case of the long leaved pine, the tar, resin, and pitch, for which it is especially valued. Then, too, in a herbarium the fruits, leaves, and flowers are preserved as nearly as possible in their natural state. When the collection is ready for public view next spring it will be not only the largest, but the only complete one of its kind in the country. There is nothing like it in the world, as far as is known; certainly not in the royal museums of England, France, or Germany.—*Scientific American.*