Forests a Necessity of Fertility.

The value of forests to a country in retaining moisture is well illustrated by the late severe freshets of the Connecticut valley. The snow melts quicker in an open country, and is retained longer among groves. Formerly the Connecticut river and its tributaries were clothed with forests; now they are largely denuded, and we have reason to expect greater freshets than formerly. The present barrenness of Greece and Palestine as contrasted with their former fertility, is similarly accounted for. Dr. Unger, a celebrated naturalist of Vienna, claims that the climate lacks its original moisture. He says the hordes of warriors who have followed each other for centuries on that soil, have burned up the forests, and every effort of nature to make restoration is subdued by a superabundance of goats. The population live on the products of the goats, and the goats crop every twig, thus bringing barrenness. If the forests should ever again grow. Dr. Unger thinks fertility would be restored.

Apparatus for enabling persons to remain under Water.

At the last sitting of the French Academy of Sciences, a new apparatus for enabling persons to remain under water, or in places filled with deleterious gases, was described. The apparatus consists of a piece of wood having the form and dimensions of the human mouth when open. To this piece of wood two india-rubber tubes are fixed, of any length, according to the exigencies of the case. The man engaged in the operation is further provided with a nose pincher, or instrument for compressing the nostrils, so as to prevent the introduction of the deleterious gas or of water, as the case may be. The operator puts the piece of wood into his mouth, and puts on the nose pincher; he stops up one of the orifices with his tongue, and inhales pure air from the other; after which he shifts his tongue to the latter orifice, and exhales his breath through the other. He continues thus regularly shifting his tongue from one orifice to the other in the order of the inspirations and expirations; but even a mistake would be of little consequence.

Popular Science.

Of the sixty-two primary elements known in nature, only eighteen are found in the human body, and of these, seven are metallic. Iron is found in the blood, phosphorus in the brain, limestone in the bile, lime in the bones, dust and ashes in all. Not only these eighteen human elements, but the whole sixty-two of which the universe is made, have their essential basis in the four substances—oxygen hydrogen, nitrogen, and carbon—representing the more familiar name of fire, water, saltpetre, and charcoal. And such is man, the lord of earth —a spark of fire—a drop of water—a grain of gunpowder—an atom of charcoal!

Cheap Coal Gas.

In the city of Liverpool, England, the price of gas has been reduced to about 86 cents per 1,000 cubic feet. It is also stated that this price pays a fair profit to the stockholders.

The first Iron-Clad Ship of War.

In 1613, William Adams, in a letter from Japan, dated December of that year, in a mention of his voyage from Firando to Oösaka through the Inland Sea, by the Strait of Simonoseki, writes thus:—

"We were two daies rowing from Firando to Faccate. About eight or tenne leagues on this side the straights of Xeminaseque we found a great towne, where there lay in a docke a juncke eight hundred or a thousand tunnes burthen, sheathed all with yron, with a guard appointed to keep her from firing and treachery. She was built in a very homely fashion much like that which describeth Noah's arke unto us. The naturals told us that she served to transport soulders to any of the Islands if rebellion or warre should happen."

Photosculpture.

References from time to time have appeared in the papers respecting this novel application of photography. Preparations are being made in Paris for carrying it out on a very extensive scale. The results are stated to be very successful. The *modus operandi* will be easily understood. The sitter or object to be sculptured is placed in the centre of a well-lighted, spacious apartment; twenty-four or even a larger number of cameras are ranged in a circle around him, at equal distances from each other, with plates duly prepared, and by a simple mechanical arrangement the operator, by one movement of the hand, simultaneously uncovers all the lenses, and after a sufficient length of exposure closes them. The plates are then developed in the usual manner, a sufficient number of operations being employed for the purpose, and proofs are subsequently printed. There are thus obtained twenty-four or more views of the subject from twenty-four or more different points of sight. Each view is then in succession, by means of a magic lantern arrangement, thrown upon a screen on an enlarged scale. In order to transfer these likenesses from the photographs to the modelling clay, an instrument on the principle of the pentagraph is then made use of, having a tracer at one end and a cutting tool at the other. The lump of modelling clay is fixed on a stand capable of turning on its axis, with divisions corresponding to the number of photographs employed, and is placed in a position so that while the tracer of the pentagraph passes over the outline of the photograph thrown on the screen, the cutting tool at the other end cuts the clay into the corresponding outline. The clay is then shifted one division on its axis, and the next corresponding photograph thrown on the screen, and the operation repeated, and so on in succession till the clay has the twenty-four or more outlines accurately transferred to it. It then only remains for the artist to connect these tracings or outlines on the clay, and here, of course, his skill is shown. The artist thus has a large amount of work mechanically and rapidly prepared for him, and he is enabled, in a comparatively short time, to execute a model combining all the truthfulness of mechanism and the skill of the artist. From this model casts in plaster, or statues in marble, can be taken in the usual way. It is stated that the sculptures thus produced are remarkably good, and can be supplied at a very cheap rate, as compared with sculpture produced entirely by hand.—*Journal of the Society of Arts.*