ELEPHANT ROCK AND OTHER BOWLDERS.

BY CHARLES ALMA BYERS.

A group of huge granite bowlders, of which Elephant Rock is king, at Graniteville, Iron County, Mo., located in the heart of the Ozark Mountains, has for many years furnished to geologists a subject for much study and has proved an attractive curiosity to thousands of tourists. In some respects this group might be termed a freak of nature, for freakish it undoubtedly is, and unquestionably is it of nature's designing. It is often referred to as "the granite potato patch of the Ozarks," which name is fitting, as is also the name given the giant one of the group, viz., Elephant Rock.

Elephant Rock is not only so called because of its immense size, but partly so because of its broad resemblance to an elephant. To one standing at a certain point on the north side of the bowlder, the resemblance of a portion of it to an elephant's head and trunk is easily discernible, while its color is almost exactly the same. Elephant Rock is about twenty-two feet from base to top and about thirty-five feet in length, and is of pure red granite, as are also all of the other bowlders of the group. The surface of the slight elevation on which the bowlders lie is also of solid granite, and in most places, is almost as level as a floor.

Whether these bowlders are of glacial origin has been the theme of considerable discussion by geologists. It is certain that their shape in every way indicates that they have traveled as detritus many miles in a glacial stream; but when one observes their immense size and notes the fact that they are now in the heart of a very large granite deposit, he is inclined to doubt the probability of that theory. From the latter fact it would seem that they are of local origin. And it seems evident that these bowlders could not have been deposited here during the glacial period, when the Laurentian glacier moved outward from the highland north of the St. Lawrence River in every direction, and covered North America with a continental ice sheet, for we have much evidence that this glacier did not extend below the Ohio and Missouri Rivers. North of these rivers have been found the glacial drift caused by the melting of the glacier.

Geologists of late years have generally conceded that the Ozark Mountain range in Missouri and Arkansas is the oldest land in the American continent; and were it not that this group of bowlders is found in the only granite region of the Ozark Mountains, one might believe that it had been carried here by a glacier from a more elevated part of the range; that they are the oldest remains of glaciers in the American continent. Iron Mountain and Pilot Knob are thought to have been the first elevations to rise above the waters that once covered all America, and these mountains are only four and five miles respectively from the group of bowlders, although no granite is to be found on either of them.

In connection with this, it might be of interest to state that Prof. Moorhead, instructor of archæology of the Phillips Academy of Andover, Mass., in the belief that the Ozarks are the oldest elevations on this continent, is now going over these mountains to investigate the probability that here is to be found evidence of a more primitive man than has yet been found elsewhere on this continent.

Radium and Cancer.

Dr. Alexander Graham Bell has in a letter to Dr. Sowers, a physician of Washington, made a suggestion which may lead to good results. He said in the letter: "I understand from you that the Röntgen X-rays, and the rays emitted by radium, have been found to have a marked curative effect upon external cancers, but that the effects upon deep-seated cancers have not thus far proved satisfactory. It has occurred to me that one reason for the unsatisfactory nature of these latter experiments arises from the fact that the rays have been applied externally, thus having to pass through healthy tissues of various depths in order to reach the cancerous matter. The Crookes tube from which the Röntgen rays are emitted is, of course, too bulky to be admitted into the middle of a mass of cancer, but there is no reason why a tiny fragment of radium sealed up in a fine glass tube should not be inserted into the very heart of the cancer, thus acting directly upon the diseased material. Would it not be worth while making experiments along this line?" To this letter Dr. Sowers replied: "The suggestion which you make in regard to the application of the radium rays to the substance of deep-seated cancer I regard as very valuable. If such experiments should be made I have no doubt they would prove successful in many cases where we now have failures."

"COAL-PORCELAIN."

BY L. LODIAN.

"Coal-porcelain" is probably known only in the anthracite regions of Pennsylvania. Those who live in other States of the Union, with the exception of a few relic-hunters, certainly know nothing of the beautiful utensils which are made of coal in the mining country. The exquisite natural polish to which coal-porcelain is susceptible when turned on a buff lathe, is unexcelled in black brilliancy, and exceeds in brightness the shining white surface of the finest china. Coal is a pure natural black. China, on the other hand, is rarely a pure white.

A CUP CUT FROM A BLOCK OF COAL.

The only qualities of coal that are commonly associated with it are its combustible properties. It has, however, many uses. The jet which jewelers use is nothing but coal of a very compact texture. In a Welsh country town there may be seen a foot-bridge made of coal, originally intended to be only a temporary structure, but found of sufficient strength and firmness to warrant its being used as a permanent footway. At Barcelona, Spain, there was constructed in 1888 a lighthouse of compressed coal-blocks. On a portion of the southern English coast, at a small point called Kimeridge, circular shale-disks, with a square hole (very much like Chinese "kash"), have been turned up by the plow. They are used as fuel. Curious geologists who heard of the disks, found that they were nothing but coal money; for it seems that in ancient England, in pre-Roman days, coins or tokens of coal-shale were quite common, and were perforated in order to be strung together (like Chinese "kash"), that they might be more conveniently carried.

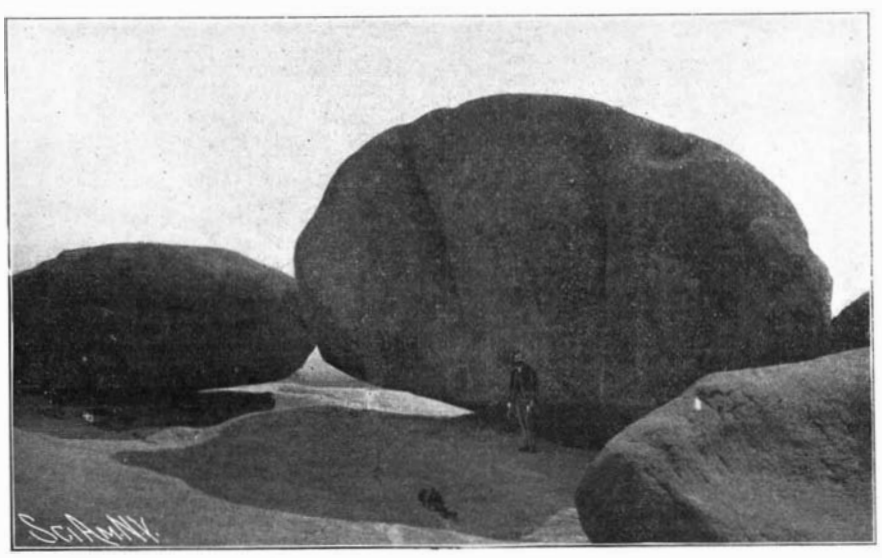
Not the least curious of these many applications of coal, is coal-porcelain. Just what can be done in the way of shaping a bit of hard coal into a useful vessel is shown by the accompanying illustration, which represents a drinking-cup or miniature bucket. Coal flower-vases, milk-mugs, plates and saucers, book-covers, clock-frames, wash-basins, inkstands, spools for lace-work, candlesticks, and scores of other articles are made in like fashion.

Since coal is a rather brittle substance, it is impossible to produce the fine ornamental work of good china-ware. There are many natural minute air-cells which may cause chipping in the making of a vessel. Still, a broken or chipped coal-utensil can be mended with cement just as readily as a bit of broken china.

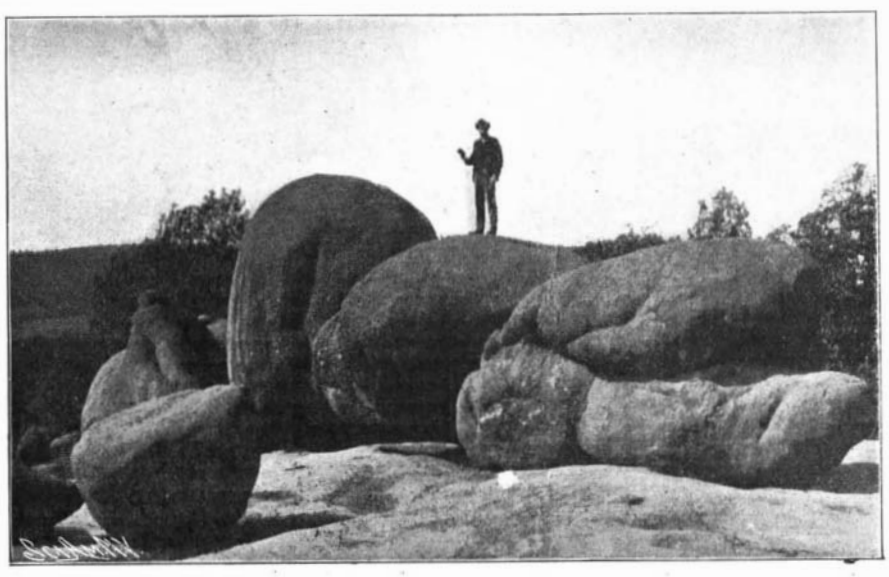
A model coal-porcelain factory is to be found at Summit Hill, Pa. Here an ex-coal miner and a few associates have for years been turning out exquisite pieces of coal ware. Although the finished coal product is cleanly enough (it can be washed in boiling soapsuds without discoloring the water), still its manufacture is one of the most uncleanly callings imaginable. As might be supposed, objects such as that here pictured are turned on lathes. These lathes are run at a very high rate of speed. The peeling off of coal-particles gives rise to small clouds of fine coal dust which settle on everything in the lathe-room. The working equipment of the coal-porcelain factory is of the simplest. Two or three chuck- and buff-lathes, and a few hand-tools of the chisel-cutting and pick order, are all that are needed. The rest is supplied by the good taste and skill of the coal craftsman.

Only the very best blocks of the hardest anthracite can be successfully used in the manufacture of coal ware. Blocks from what is known as the Mammoth vein in the Lehigh region are most prized. It requires long experience and a trained eye to determine how a piece of coal in the rough is likely to behave under the cutting lathe. The high, permanent polish which can be given to coal by the buffing-wheel serves the purpose of closing many minute pores, and renders the finished vessel impervious to hot or cold liquids.

The price of coal-porcelain averages about 50 cents a pound. The manufacturer buys the raw material for $2.50 a ton. Fashioned into utensils, the coal becomes worth about $1,000 a ton.



ELEPHANT ROCK, GRANITEVILLE, MO.



POTATO ROCK, GRANITEVILLE, MO.

Ancient Statuary in China.

Under date "Hsiaochang, via Te Chou, Tientsin, North China, April 27, 1903," Dr. Sewell S. McFarlane sends the following communication to the Royal Geographical Society: "In February, during one of my journeys in the southwest province of Chili, North China, I came across a number of stone horses, sheep, lions, etc., some in a fair state of preservation. They were in two parallel rows, and beside them were several 'petrified' Buddhist priests, supposed to be on guard. The people seemed to know nothing about them and cared less. Upon inquiry among the gentry of the adjoining village, one old gentleman informed me that it was the entrance to a very old subterranean tomb of one of China's prime ministers, who lived under the Han dynasty. This would be about the year A. D. 25. Many years ago a tablet stood there, which they unearthed with the above stone figures, giving full particulars, but the disinterested inhabitants destroyed it 'as it was in the way of their cart track.' How the people came to unearth these huge statues is interesting. During the past generations the severe dust-storms experienced in North China have swept over the district and steadily but effectually buried out of sight the beautiful tomb and all its accompaniments. The inhabitants frequently dig out their land to make mud bricks for their houses, and in this manner the stone figures came to light. It is said there are a great many more of them ere one reaches the actual tomb. Had this been in England these ancient curios would have been excavated and a correct description published centuries ago. But in China the country folk, who simply live from hand to mouth, somewhat take after Gallio, of sacred writ, and 'care for none of these things.'"

It is reported that Mr. Brodrick has sanctioned the expenditure of $10,000 on experiments with a dirigible balloon. These experiments will be carried out by the Royal Engineers, under Colonel J. L. B. Templer, the superintendent of the balloon factory.