

left off the worship of Baal, and have deserted the groves and high places, and have sworn allegiance to the true god of science, that you, the people, should wander off after all manner of idols, and delight more and more in patent medicines, and be more than ever at the hands of advertising quacks. But for a time it must be so. This is yet the childhood of the world, and a supine credulity is still the most charming characteristic of man.

Some of the brightest hopes of humanity are with the medical profession. To it, not to law or theology, belong the promises. Disease will always be with us, but we may look forward confidently to the time when epidemics shall be no more, when typhoid shall be as rare as typhus, and tuberculosis as leprosy. Man, naturally a transgressor daily, both in ignorance and deliberately breaking the laws of health, will always need doctors; but the great group of preventable diseases will disappear. The progress will be gradual. What has been done is but an earnest of the things that shall be done. Amid many disappointments, we must not be impatient, as "science moves but slowly, slowly creeping from point to point."

BAUXITE IN ARKANSAS.¹

THE Geological Survey of Arkansas has discovered deposits of bauxite in that State, the first considerable ones thus far found in this country. In 1887 a small deposit was discovered in Floyd County, Ga., but that is said to cover "an area of about half an acre" only.²

The Arkansas beds occur near the railway in the vicinity of Little Rock, Pulaski County, and near Benton, Saline County. The exposures vary in size from an acre to twenty acres or more, and aggregate something over a square mile. This does not, in all probability, include the total area covered by bauxite in the counties mentioned, for the method of occurrence of the deposits leads to the supposition that there are others as yet undiscovered by the survey.

In thickness the beds vary from a few feet to over 40 feet, with the total thickness undetermined. The average thickness is at least 15 feet.

These Arkansas deposits occur only in tertiary areas and in the neighborhood of eruptive syenites ("granites"), to which they seem to be genetically related. In elevation they occur only at and below 300 feet above tide-level, and most of them lie between 260 and 270 feet above tide. They have soft tertiary beds both above and below them at a few places, and must therefore be of tertiary age. As a rule, however, they have no covering, the overlying beds having been removed by erosion, and are high enough above the drainage of the country to be readily quarried. Erosive action has removed a part of the bauxite in some cases; but there are, in all probability, many places at which it has not yet been even uncovered.

It is pisolitic in structure, and, like all bauxite, varies more or less in color and in chemical composition. At a few places it is so charged with iron, that attempts have been made to mine it for iron ore. Some of the samples from these pits assay over 50 per cent of metallic iron. This ferruginous kind is exceptional, however. From the dark-red varieties it grades through the browns and yellow to pearl-gray, cream-colored, and milky white; the pinks, browns, and grays being the more abundant. Some of the white varieties have the chemical composition of kaolin; while the red, brown, and gray have but little silica and iron, and a high percentage of alumina. The analyses given below show that this bauxite is as good as that of France, Austria, and Ireland, for the manufacture of chemical products, for refractory material, and for the manufacture of aluminum by the Deville process. Should there be a market in this country for such material, Arkansas will be able to supply any demand that may be made for it. No use has ever been made of the Arkansas material except for road-building: indeed, it was not known what it was until

January last, when the announcement was made by the State geologist in a letter to the governor.

Partial Analyses of Bauxite from Arkansas.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
Alumina.....	55.59	57.62	58.60	55.89	44.81	62.05	55.64	51.90
Silica.....	10.13	11.48	3.34	5.11	33.94	2.00	10.38	16.76
Ferric oxide.....	6.08	1.83	9.11	19.45	1.37	1.66	1.95	3.16
Titanic oxide.....					2.00	3.50	3.50	3.50
Loss on ignition (water).....	28.99	28.63	28.63	17.39	17.28	30.31	27.62	24.86

Average of Fourteen Partial Analyses of Bauxite from France, Austria, and Ireland.¹

Alumina.....	52.7 per cent.
Silica.....	7.1 " "
Ferric oxide.....	19.1 " "
Water.....	16.4 " "

The above analyses made by the State Geological Survey show the composition of average samples.

REMOVING TASSELS FROM CORN.

EXPERIMENTS with strawberries made at the Ohio Experiment Station indicate that pollen-bearing is an exhaustive process, and that larger yields of fruit, as a rule, may be expected from those varieties which produce pollen so sparingly that a small proportion of other varieties producing pollen abundantly must be planted with them in order to insure a full crop, than from those which produce sufficient pollen for self-fertilization.

The following very interesting and valuable experiment on corn, made by the experiment station of Cornell University, at Ithaca, N.Y., gives strong support to this theory.

It has been claimed that if the tassels were removed from corn before they have produced pollen, the strength thus saved to the plant would be turned to the ovaries, and a larger amount of grain be produced. To test the effect of this theory, the following trial was made during the past season.

In the general cornfield a plot of forty-eight rows, with forty-two hills in each row, was selected for the experiment. From each alternate row the tassels were removed as soon as they appeared, and before any pollen had fallen. The remaining rows were left undisturbed. The corn was Sibley's Pride of the North, planted the last week in May in hills three feet six inches by three feet eight inches, on dry, gravelly, moderately fertile soil.

On July 21 the earliest tassels began to make their appearance in the folds of the upper leaves, and were removed as soon as they could be seen, and before they were fully developed. A slight pull was sufficient to break the stalk just below the tassel, and the removal was easy and rapid.

On July 25 the plot was gone over again for the removal of such tassels as had appeared since the previous work, and at this time by far the greater number of the tassels were removed.

On July 28, when the plot was gone over the third time, the effects of the tasselling became apparent in the increased number of silks that were visible on the rows from which the tassels had been removed.

On the 1,008 tasselled hills there were visible 591 silks; on the 1,008 untasselled, 393 silks.

On Aug. 4 the plot was gone over for the last time, but only a few tassels were found on the very latest stalks. The preponderance of visible silk on the tasselled rows was still manifest, there being at this time 3,542 silks visible on the tasselled rows, and but 2,044 on the untasselled rows. The corn was allowed to stand without cutting until ripe.

¹ By John C. Branner, F.h.D., State geologist of Arkansas (American Geologist, March, 1891).

² Transactions of the American Institute of Mechanical Engineers, xvi. p. 905.

¹ From analyses principally by Saint-Claire Deville given in the Ann. de Chimie et de Physique, lxi. 1861, p. 309 et seq.; Bull. Soc. Geol. de France, xvi. 1888, p. 345; Dingler's Polytechnisches Journal, 198, p. 156, and 234, p. 465; Bischof's Feuerfesten Thone, p. 194; Percy's Metallurgy, p. 133.