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, Ph.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.

Sept. 29 to Oct. 1 the rows were cut and husked, and the stalks and ears weighed and counted, with the following results: —

	Aggregate Yield.		Comparative Yield.	
	Tassels left on.	Tassels removed.	Tassels left on.	Tassels removed.
Number of good ears	1551	2338	100	151
Number of poor ears	628	885	100	141
Number of abortive ears	2566	951	100	37
Total number of ears	4745	4174	100	88
Weight of merchantable corn (pounds)	710	1078	100	152
Weight of poor corn (pounds)	130	187	100	144
Number of stalks	4186	4228	100	101
100 stalks weighed (pounds)	82	79	100	96

It will thus be seen that the number of good ears and the weight of merchantable corn were both a little more than fifty per cent greater on the rows from which the tassels were removed than upon those upon which the tassels were left. This is not only true of the two sets of rows as a whole, but with the individual rows as well. In no case did a row upon which the tassels were left produce anywhere near as much as the tasselled rows on either side of it. In fact, the results given above are really the aggregate results of twenty-four distinct duplicate experiments, each of which alone showed the same thing as the aggregate of all.

By abortive ears is meant those sets that made only a bunch of husks, and sometimes a small cob, but no grain. It will be noticed that they were by far the most numerous on those rows from which the tassels were not removed. It will also be noticed that the total of the good, poor, and abortive ears is about fourteen per cent greater on the rows on which the tassels were left, while the weight of merchantable corn is more than fifty per cent greater on those rows from which the tassels were removed.

HEALTH MATTERS.

Action of an Infusion of Coffee on Bacteria.

IN studying the germicidal action of coffee, Dr. Luderitz made use of infusions of different degrees of concentration, varying from five to thirty grains of coffee to ten cubic centimetres of water. According to *The Sanitary News*, he mixed from four to six drops of pure culture-broth with eight to ten cubic centimetres of this infusion, and at the end of a certain time he withdrew parts of this mixture and cultivated them in gelatine. Experiment showed that the micrococcus prodigiosus dies in a ten-per-cent infusion of coffee in from three to five days, the bacillus of typhus in from one to three days, the proteus vulgaris in from two to four days, the staphylococcus aureus in from four to seven days, the streptococcus of erysipelas in one day, the bacillus of cholera in from three to four hours, the bacillus of anthrax in from two to three hours, and the spores of anthrax in from two to four weeks. In a thirty-per cent infusion of coffee the typhus bacillus dies in one day, the staphylococcus aureus in from one to three days, the bacillus of cholera in from half an hour to two hours, the bacillus of anthrax in two hours, the spores of anthrax in from two to four weeks. In a second series of experiments Luderitz studied the influence of an infusion of coffee mixed with gelatine on the development of bacteria. These experiments showed that the micrococcus prodigiosus does not vegetate in gelatine containing from three to nine per cent of coffee, the bacillus of typhus in gelatine with three per cent of coffee, the proteus vulgaris with from five to nine per cent, the staphylococcus aureus with two per cent, the streptococcus of erysipelas with one per cent, the cholera bacillus with one, and the bacillus of anthrax with 0.6 per cent. The action is the same for the different qualities of coffee, and is due, not to the caffeine, but to the products of the roasting of the coffee.

NOTES AND NEWS.

A FEW more points may be added to what was said on the Etruscan question in *Science*, Feb. 20, p. 99. M. Zanardelli has published, in the last volume of the *Bulletin de la Société d'Anthropologie de Bruxelles* (1890), a paper on the relationship of the Etruscan, Umbrian, and Oscan languages to the modern Italian. So far as the first-named goes, the resemblances are merely phonetic, as in the frequency of syllables ending in vowels. Professor Ferdinando Borsari of Naples has contributed to the last number of the *Rassegna Scientifica* à new study of the famous inscription of Menep phtah (of the nineteenth dynasty), in which the Etruscans, and, as he thinks, the Sicilians and Sardinians, are for the first time mentioned (*Etruschi, Sardi e Siculi nel* XIV° *Secolo prima dell'Era volgare*). He does not meet all the objections offered to these identifications, nor does he note the recent suggestions as to the interpretation of the inscription by Dr. Max Müller and others.

— From the annual report of the special committee of the American Society of Civil Engineers, on uniform standard time, we learn that the advantages of the 24 hour notation are beginning to be recognized in various branches of civil life. In hospitals, for example, to prevent mistakes by nurses in the administration of medicine, in recording temperatures, and in other matters, the new system is being gradually introduced; also in weather-tables and in the recording of meteorological readings: indeed, in departments where simplicity of system and accuracy are essential, the new notation is being spontaneously brought into use in many quarters. For two or three years back the Canadian Almanac has abandoned the old notation and substituted the new. It is in connection with railway service, however, that the general introduction of the 24-hour notation may mainly be looked for.

— The notion that the Welsh had in pre-Columbian times some knowledge of the American continent has for centuries found advocates, but never a competent critic. The latest is B F. de Costa, who reprints from the *New England Historical and Genealogical Register* of January, 1891, his article on "The Pre-Columbian Voyages of the Welsh to America." He complains that the accounts of the alleged voyages of the Welsh to America about 1170 have not received the attention they merit; but Mr. De Costa aids little to this end. The passages he quotes are at second-hand and translations, and are eminently vague. They tell us at most that some sea-rover Madoc (there were many Madocs) found land in the West, and settled there. But both the date of this occurrence, and any definite information as to the land, are wanting. Why not print the originals, with a discussion of their sources? We are the more inclined to require this from a writer who dares the misleading statement that "the ancient literature of the Welsh carries us back to a period before the Christian era."

— In the "Report of the Lightning-Rod Conference" (London and New York, Spon, 1882), on p. 62, we read, "On the 13th June, 1854, the 'Jupiter' was struck by lightning. The conductors were in place; that of the mainmast which was struck went 2 metres (6 feet 6 inches) into the sea, and had at its end a ball 2 kilos in weight. After being struck the conductor had disappeared and the pieces of it were scattered everywhere." Further on, the report states that "the 'Jupiter' received no damage." There are a large number of cases on record in which the conductor is reported as destroyed or even dissipated, and yet no damage (always with the proviso noted below) occurred to the buildings or ships to which the conductors were attached. Generally it is stated that this fortunate result was in spite of the de-