

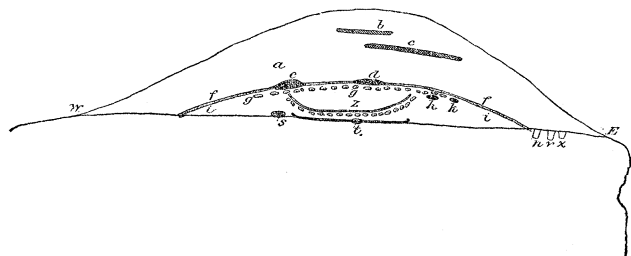
cent. The analyses are to be found in the *Baltimore American* of April 22, 1888, and are signed by the writer and his co-worker, Dr. William Simon. Both of us had repeatedly bought in the markets, and together had analyzed, similar candy with the same results. The quantity sold in a market on a market-day apparently was not less than ten nor more than thirty pounds. We have preserved samples of the material, and shall be glad to divide them with workers in this field. Such candy, consumed in such quantities, cannot have failed to produce in Baltimore an abundance of lead-poisoning.

From all this we deduce the following conclusions: that lead hromate breathed as dust, or taken into the digestive apparatus, produces lead-poisoning; that commercial chrome yellow ingested with food-stuffs produces more quickly the same result; that chrome yellow is a mixture of lead chromate and lead sulphate, to which frequently is added white lead ($2 \text{ Pb CO}_3 + \text{Pb H}_2\text{O}_2$); that none of these substances are corrosive poisons; that bakers' and confectioners' products not infrequently are colored with chrome yellow, and often are sources of lead-poisoning, which may exist largely in a community and yet escape detection. WM. GLENN.

Baltimore, April 26.

A Mound in Calhoun County, Ill.

MR. MIDDLETON, one of the assistants of the Bureau of Ethnology, has recently excavated quite a number of mounds in Calhoun County, Ill., among them one presenting some features of special interest. The following description is taken from Mr. Middleton's field-notes.



This mound, which forms one of a group of five located on the spur of a bluff about one hundred and fifty feet high, overlooking the Illinois River, stands at the brink of a precipice. It is conical in form, and ninety-five feet in diameter at the base.

As the internal structure is the most interesting feature, a figure is given showing a vertical section, in which *W-E* indicates the line of the natural surface of the bluff, as well as the direction of the section.

"From the top downward to the depth of fourteen feet," says Mr. Middleton, "we passed through a layer composed chiefly of yellow clay (*a*) obtained from the surrounding surface of the bluff. Near the centre, at the depth of four feet, was a horizontal bed (*b*) of hard gray earth, — apparently muck from the river, — eight inches thick, and covering an area about twenty feet in diameter. Three feet lower was a bed (*c*) of burnt clay about the same thickness and extent as the preceding. Although particles of charcoal were mixed through it, no ashes were observed on or about it.

"At the depth of fourteen feet we reached what seems to have been the nucleus or original mound, over which the heavy mass of clay had been cast at some subsequent period. Over this lay a thin covering of whitish material (*f, f*), apparently light ashes, not more than two inches thick, and extending on all sides to the original base. This rested, for the most part, on a single layer of stones (*g, g*), the latter lacking several feet of extending to the outer margin. Examining carefully the stones which formed this layer, evidences of weathering on the upper side were distinctly visible, showing that the mound must have remained undisturbed at this height for a considerable length of time. The thin stratum of ashes over it seems to confirm this view, as the charred stems of grass near the outer margin show that this was produced by burning a covering of grass which had grown over it. The dark spots (*d* and *e*) indicate two small fire-beds resting on the layer of stones.

"Removing the stones, and cutting a trench through the low, broad, original mound or nucleus to the natural surface of the bluff, we found the construction to be as shown in the figure, — an oval basin (*z*), ten by thirteen feet in extent and three feet deep, lined throughout with a layer of stones similar to those above. It was filled with the yellow surface soil of the ridge. The stones, which bore very distinct marks of weathering, were covered with a thin layer of white ashes mixed with charred leaves and grass. Under the stones, and resting on the natural surface of the ridge, was a thin layer of decayed vegetable matter. The slopes (*i-i*) surrounding the basin were of yellow clay similar to that of the thick upper layer of the mound. The dark spots (*h* and *k*) are small fire-beds.

"Partly under and partly in the bottom layer of decayed vegetable matter, and exactly in the centre of the mound, was a single skeleton (*z*) lying on the back at full length, the feet to the south; but the head was wanting. Not a tooth, or particle of the jaw or skull, was to be found, though careful search was made. As all the other bones were well preserved and comparatively sound, except that the pelvis and some of the ribs were broken, I presume the head must have been removed before burial. This is the second instance I have observed in which the head was removed before burial. The first was dug up at Pecan Point, Arkansas.

"Six feet south of the centre of the mound was a small deposit of burned bones (*s*), lying on the natural surface of the bluff. Seven feet west of the centre, lying on the original soil, were the remains of an infant. It had been doubled up until the knees touched the chin, wrapped in a grass covering, and placed upon its left side.

"A shell-shaped vessel at the right shoulder of the large skeleton, and a shell, were the only specimens found in the mound. The latter was in a stone box or cist two feet and a half square and one foot deep, resting on the natural surface of the ridge. Not a fragment of bone was found in this box.

"Another singular feature observed consisted of three small pits (*n, v, x*) under the eastern base of the upper layer. These were three holes, from fifteen to eighteen inches in diameter, and one foot deep. One of them contained particles of rotten wood. There were several intrusive burials in the thick upper clay layer, which presented nothing of special interest."

It is apparent, from Mr. Middleton's figure and description, that we have in this tumulus a specimen of the Ohio "altar-mound" type, possibly a prototype. What he calls the nucleus or original mound is beyond question one of the so-called "altars" of the type described by Messrs. Squier and Davis, and is one more item of evidence that the Ohio mound-builders came from the West, as I have contended elsewhere.

CYRUS THOMAS.

Washington, D.C., April 23.

New Sources of Heat.

IF, as I take it, the communication of your correspondent "X," on p. 329 of your issue of April 26, is intended as a sort of exposure, it is to be warmly welcomed.

What Mr. Blodget has actually done, I cannot say; but that his assertions are extremely inaccurate, I know. He states that "in all cases where a powerful blast is applied to the limited area of a melting-furnace . . . the degree of heat generated is greatly in excess of the theoretical yield of the number of pounds of coal consumed." This is absolutely untrue. On the contrary, measurements of the heat actually developed under these conditions agree surprisingly closely with the "theoretical yield of the number of pounds of coal consumed." This is well exemplified in Bell's calculations and measurements of the heat developed in the blast-furnace.

Mr. Blodget's statement that this excess of heat generated over the theoretical yield of the coal is particularly great in the Bessemer converter, is a case of astonishing ignorance, or, as I prefer to believe, of extreme carelessness in the use of words. I supposed that every reader of *Science* knew that no carbonaceous fuel was burned in the Bessemer converter (except, of course, in heating the converter between operations). A new Keely motor seems to be born. *Caveat emptor.*

HENRY M. HOWE.

Boston, April 29.