lery is due to the presence and growth of the yeast-fungus. At the time of the publication of Schloesing and Muntz's memoir, it was remarked in corroboration of their view, that tradition has taught, that in the days when 'saltpetre plantations' or 'saltpetre yards' were worked in Europe, in order to obtain a supply of the nitrate for making gunpowder, pains were taken to use the earth of a yard over and over again, after the nitrate had been leached from it; and that, in order to insure success, when a new yard was to be started, some earth had to be brought from an old yard, and mixed with the new earth, — all of which went to show a recognition of the truth, that something useful for the process of nitrification was contained in the old earth. But the wisdom of the fathers is expressed even more emphatically in the following citation from the 'Diary of Samuel Sewall,' recently published by the Massachusetts historical society (see 'Sewall papers,' vol. 2, p. 10, of the preliminary 'Miscellaneous items'). It appears that in the year 1686 Judge Sewall copied upon the cover of his journal this receipt: —

"To make a salt-petre bed. All the sward of the ground is to be taken off or trenched in, and the stones to be taken clean out as deep as the trench. Then get the best and richest mould you can, and fill up the trench according as you will make it in greatness — length or depth as you see cause. When the ground is made clean and fitting, turn over the ground and trench it in again, and as you trench it in mix it with strong lime about a tenth or sixth part; and the Seed-Petre, or Mother of Petre, and hen or pigeon's dung as much as you can get, the more the better. And after 'tis trenched in as above, let all the butcher's blood and lees of wine be mixed often with the upper part of the mould about half a foot down, that it be not lost or run away from the bed or bank. Let the bank be made upon rising ground, and a ditch about it, that the water rest not, nor run into the petre-bed; with a dry house over it, to keep it from rain."

Surely it is something more than a curious coincidence that our forefathers should have thus spoken of the 'mother of petre' as they did habitually of the 'mother of vinegar.' In the face of expressions so distinct as these, it is impossible, as a matter of history, to deny that just conceptions of nitrification and acetification were current long ago. It is, perhaps, the fault of their descendants, rather than of themselves, that this knowledge of our ancestors was not more firmly grasped or sooner formulated with precision. F. H. STORER.

Archeological frauds.

As an illustration of the demand and supply of archeological material, I will call attention to a carved stone representing a naked child about two feet in length, which was said to have been dug up near the Hot Springs in Arkansas. The carving was partly enclosed by a cement, which, it was said, covered the stone when it was found. This was received at the Peabody museum, with its history, apparently well authenticated, describing it as an antique. This piece of carving proved to be a child of the 'Cardiff giant' family. The fraud was unquestionable; and the image was returned to its owner with a full statement of the evidence against it, and the request that in the interest of science the object should be destroyed. Since then I have heard nothing more of it, and in case it has not been destroyed this notice will serve to put others on their guard. This is, however, but one of the many fraudulent specimens offered for sale; and we have received a number of pipes, tubes, dishes, ceremonial and other objects, made in Philadelphia, and sold as having been found in such or such a locality. The variety of these articles made by the Philadelphia manufacturer, and the character of the work, are such that many have found their way into collections in this country, and not a few have supplied the foreign demand for American antiquities. A manufacturer in Indiana confines his attention chiefly to 'mound-builders' pipes,' which are carved from stone, and offered in a systematic method to collectors. In Ohio a large business has been done in the so-called gorgets, cut from blue slate, and in hematite celts. In southern Illinois, a few years ago, many specimens of pottery were made, until the demand fell off so that one manufacturer acknowledged that he was no longer paid for his trouble by their sale. Another man who made this pottery is, I believe, no longer living; but much of his work is still extant. This list might be lengthened; but it is already sufficient to show that the demand for 'antiquities' is considerable in this country, and that we are not behind the old world in keeping up the supply. F. W. PUTNAM.

Cambridge, Feb. 19.

AMERICAN INSTITUTE OF MINING ENGINEERS.

THE American institute of mining engineers, organized in 1871, and consisting at that time of mining and mechanical engineers, metallurgists, and chemists, held its second February meeting in Boston, in 1873, with a membership of about two hundred and fifty. Since that time the American chemical society and the Society of mechanical engineers have been formed, in a measure limiting the field of the institute to the mining engineers proper, the metallurgists, those chemists who are engaged on the problems connected with the profitable extraction and working of metals, and those geologists whose work lies in the same direction. But, even with this specialization of the aims of the institute, it has just held its twelfth annual meeting in Boston, Feb. 20–23; and the membership at present numbers over twelve hundred.

The decade which has elapsed between these two meetings has witnessed a most marvellous growth of mining and metallurgical enterprises. It is now very generally recognized that our mineral resources in extent and richness rival those of any other country. It is, on the other hand, true that the mining-lands of America present obstacles to the extraction and transportation of their mineral wealth such as no