Aboriginal Rock-Mortars

H. L. Bruner
SOME EXPERIMENTS FOR THE PURPOSE OF DETERMINING THE
ACTIVE PRINCIPLES OF BREAD MAKING.

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(ABSTRACT.)

This paper described a series of experiments made by the author at the Iowa
State University during the winter and spring of 1891, together with their results.
The problem was to separate the bacterium, Bacillus subtilis, and the yeast plant,
Saccharomyces cerevisiae, found together in ordinary soft yeast, to obtain pure
cultures of each, and to determine the part each played in bread making.

It was found that bread made of sterilized flour and raised with the pure Bacillus
culture was light, but not as spongy as ordinary bread, sweet, close-grained, rather
dark colored, smelling and tasting much like "salt-risen" bread.

Bread raised with the pure yeast culture under exactly the same conditions as
the first was somewhat light, sweet, not so fine-grained nor as light as either ordi-
nary bread or that made with bacteria. It had a peculiar, insipid odor unlike
either of the other kinds, and was tasteless, as if made out of sawdust.

The results of these experiments seem to show that neither the yeast plant nor
the Bacillus alone will make as good bread as both together; that either without
the other will produce alcoholic fermentation and cause the bread to rise; that the
Bacillus is rather more efficient alone than the yeast. No one set of experiments,
however, can be regarded as conclusive.

ABORIGINAL ROCK-MORTARS.

BY H. L. BRUNER.

A few notes by the writer, under the above title, were published in the American
Anthropologist for October, 1891.

These "mortars", excavated in rock in situ, are located on the east slope of the
Franklin Mountains, about eleven miles north of El Paso, Texas, and near the
mouth of the "House Canon."

In the canon, about three-fourths of a mile above the excavations, is a spring of
excellent water. To the eastward is a gradual slope toward the mesa, which is
perhaps three hundred feet lower. Within a few steps of the excavations is a trail
leading northward to another spring, and thence westward over the range.
The mountains in the immediate vicinity are composed of intrusive granite, which also underlies the detritus below the mouth of the canon and crops out here and there in low knolls and ridges. In two such granite knobs, about one hundred yards apart and one-fourth of a mile from the mouth of the canon, the excavations are found. One of these, which is quite bare, contains a small number. The other is partly over-laid and partly fringed with large granite rocks, all more or less tilted or moved from place. On this knoll, some in detached rocks, some in undisturbed granite, are upwards of sixty excavations. All stand nearly or quite perpendicular, the detached rocks having undergone little change of position since the excavations were made.

A description of this group will serve the purpose of this paper.

The excavations themselves are of two kinds, which differ both in size and shape. The larger, thirty-two in number, are uniiformly semi-fusiform, the diameter and depth being about in the proportion of three to five. The largest of these measures fourteen inches in diameter at the mouth, and nineteen inches in depth. A small one is ten and one-half by fourteen inches; a wide one, fifteen by sixteen inches; a narrow one, twelve by eighteen inches.

The wide excavations are, naturally most weather-worn, other things being equal. A few in sound granite and particularly narrow or shaded holes, are in a perfect state of preservation. Fourteen are well preserved. Five, made near an edge of a rock, have been partly worn away on the outer side; one similarly situated has been split open lengthwise and others, crowded in a small area, are more or less fractured.

Twelve excavations, in separate groups of five and seven, are found a few steps apart from the rest and are more exposed. The remainder lie in or near the shadow of a large, tilted block of granite. These excavations also appear oldest, and in the shade are much crowded.

Scattered among or near these shaded excavations are found more than thirty smaller basin-shaped ones, which, moreover, occur nowhere else. These vary in size from six inches wide by three inches deep, to two inches wide by one-half inch deep. Seven only are of the former size, the majority being much smaller.

Some plainsmen say that the excavations are Indian grain-mortars; others assert that they are cooking-holes in which food was boiled by throwing heated stones into the water covering it. It has been suggested, also, that they were used for crushing ores, but the absence of any workable ore in the vicinity would seem to render this improbable. The writer would add that they may have served, also, for the storage of water from the spring which is somewhat difficult of access. They were, however, doubtless used for a variety of purposes as occasion required. The basin-like excavations probably served to hold round-bottomed vessels, such as are still used by the Indians of the Southwest, or the largest of them may be mortars.

The knoll was, presumably, a camping place for hunting parties or roving bands. The site commanded an extensive view of the mesa and of the approaches to the spring, and the loose rocks afforded shade and an ambush to the hunter and concealment from enemies.

No excavations are known to exist in the canon near the spring, though suitable rocks are abundant. Such a site would be distant from the trail and further from the mesa. Preference for this rock-covered knoll was quite natural.

Numerous small fragments of pottery were found, both plain and decorated, and resembling very much in quality and style of adornment some of the modern
ware. A few of these fragments were on the surface; others were buried a few inches. Some at least were very old.

A few flakes were dug up between the loose rocks and a rude ax was found on the surface. The place, frequented at present by hunters and stockmen and formerly by prospectors, is not likely to yield many relics of a portable kind at this day. However one very interesting implement was obtained and has been pronounced unique by the Bureau of Ethnology. This was found on the surface about one-third of a mile below the excavations, having been transported presumably by water. It is an oval-lenticular tool of quartzite, its greatest length, breadth and thickness being respectively four and one-half, three and one-third and one and three-eighth inches. One surface is somewhat rough and has been worked into its present form, which nicely fits the hollow of the hand when the fingers are slightly curved. The other surface is smoothly worn and shows distinct longitudinal scratches; these, moreover, make a small angle with the line of greatest length, which fact, together with its shape, curvature and markings, suggests that the stone held in the concave palm, was used as a sort of pestle, by a vertical motion against the sides of the larger excavations or "mortars." How much reduction the pestle has suffered cannot be known.

Other pestles may also have been used, but the large excavations were uniformly pointed at bottom and would not permit the use of the ordinary sort.

NOTICE OF ARROW POINTS FROM THE LOESS IN THE CITY OF MUSCATINE.

READ DECEMBER 29TH, 1891, BY F. M. WITTER.

No other question has ever engaged the attention of man more than that which relates to the origin and destiny of his race.

Many theories have been advanced to account for man's origin and there is likewise great diversity of opinion as to his destiny.

Evolution, it seems to one, is competent to explain the natural order of things from the crystal to man. Except we build on the sure foundation of the past and present all speculation concerning man's destiny must be conjecture.

The geologic history of the earth is determined from its rocks and what they contain.

The beautiful and multifarious forms of nature's mineral flowers, the legions of plants and animals whose impress are stamped in its rocky beds form chapters in the history of our globe.

So, too, the imperishable remains of primeval man, such as the cave-dwellings, shell-heaps, earth-mounds and works of stone are the sources from which the early history of this paleolithic man or man-like animal is derived.

Man began his career as master of the world when he commenced the use of fire and stone.

The various forms of quartz, such as chert, flint, agate and obsidian, bore to him the same relation that iron bears to us.