

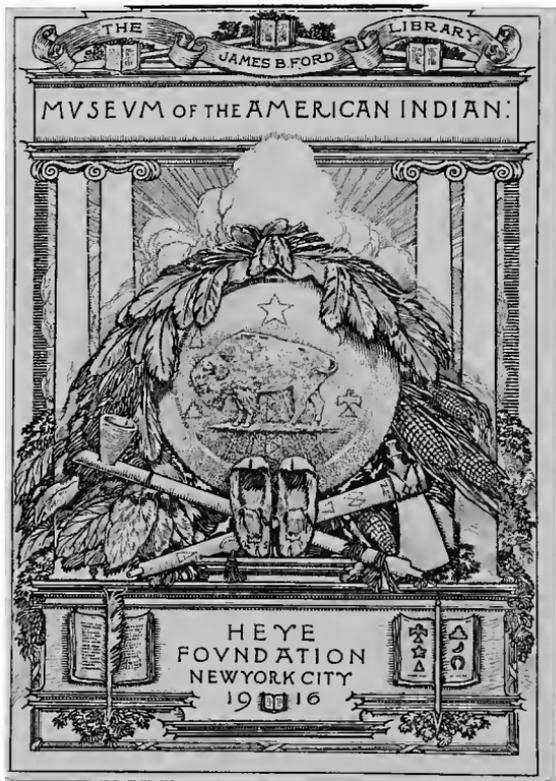
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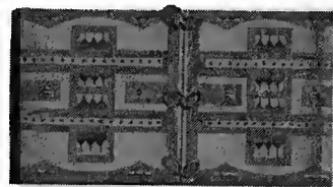
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Some Obsidian Workings in Mexico.

By ADELA BRETON.

Some Obsidian Workings in Mexico.

BY

ADELA BRETON.

Having visited several obsidian workings in the States of Hidalgo, Michoacán and Jalisco, chiefly for the purpose of obtaining geological specimens, I think a brief note of them may be useful to any one who has opportunity to study them more thoroughly.

In Hidalgo, the Cerro de Nabajas near Pachuca, is so well known that I need scarcely mention it, especially as Professor W. H. Holmes has printed an account of his visit there. It is most easily reached from Pachuca, by riding on the Tulancingo road about two hours and then straight up the hill, altogether three and a half hours of fairly fast riding. This is to the first pits and mounds of rejects, but as they extend all over that side of the hill, and also on the north, towards the Rancho of Zembo, a stay might with advantage be made at the Hacienda of Guajolote, from which they could be observed at leisure. The rejects on the surface are mostly of the ordinary types.

Near Tulancingo, to the northeast, about two miles from the town, are two mounds of chips and rejects, where lance-heads have been made. The mounds are 20 feet across and 8 to 10 feet high. Some of the rejects are carefully finished while others are only roughly shaped. All are broken, so that one finds pointed ends, square-shaped ends and middle pieces, which belonged to implements from 10 to 17 centimeters long and from 5 to 6 centimeters wide. Another shape is larger, and must have been 22 centimeters long, and 9¹/₂ wide; these also are pointed at one end. The obsidian may have been brought there either from a neighboring hill, or from the Cerro de Nabajas on the other side of the valley, the mounds being at the eastern end of the ancient site which begins below the large cave traditionally said to have been made by the Toltecs.

At Zacaultipan, 22 leagues north, obsidian was also worked, as there is an outcrop of it there, and small heaps of rejects remain.

To the south of Tulancingo, about four and a half hours' ride on the road to Apam, and beyond the Rancho of Lagunita, there is a ridge of obsidian, which has been worked, partly at so remote a period that a thick lichen has had time to grow on some of the chips in that extremely dry climate.

There are some small shady caves in the side of a low hill near, to which the workers brought their roughly shaped pieces to finish, and the fragments are strewn down the slope. There are all sorts of bits, broken and half-finished implements, in fact everything except those many-sided objects which hitherto have been called cores, but which are conspicuous by their absence from all the workings I have seen, except one, to be mentioned later on.

Michoacan.

Zinapécuaro, or place of Tzinapo, the Michoacan name for obsidian, is a pleasant town about half an hour's drive from the station of Huingo on the Mexican National Railway between Acámbaro and Morelia. Obsidian crops out in several places, the chief of which is a low hill beyond the church. Here are numbers of pits and heaps of rejects. The obsidian has been regularly mined, the pits being about two feet in diameter and fifteen or more deep. From the convenient situation this would be an admirable place to study. The pits could be descended with a rope ladder and their comparative age, and the method of working observed. In addition to the pits which are on top of the hill, some caves have been made on the far side, and careful digging might give interesting results as the floor is deep in refuse. A curious thing in one of the caves is that rounded hammer-lumps, which have apparently been used, are embedded in the white crystalline, sandy stuff of which the cave walls are composed, as if *in situ* like the other lumps of obsidian.

Some of the heaps of rejects consist almost entirely of very small thin chips, perhaps left from the making of awls or needles. Specimens of rejects from Nabajas and Tinapécuaro, are in the museum at Bristol, England.

Zinapécuaro must have been a very ancient place of settlement. The climate is delightful, the soil rich, there are medicinal, warm springs and several isolated hills well adapted for fortification. One of these has had its slopes shaped into low terraces one or two

feet high and eleven or twelve feet broad. Another, the largest, in the centre of the valley, is scarped and terraced, and has remains of buildings on top, including a subterranean chamber with steps leading down to it, now covered with fallen stones. Beyond this hill, in the valley, is an ancient site, about 5 miles from the town, with mounds and leveled spaces. One sculptured stone was still lying there in 1896. The building of a hacienda, near by, may have absorbed any other worked stones.

Jalisco.

Ixtlan de los Buenos Aires takes its name from the *ixtili* = obsidian, to be found near it, but I failed to discover the spot. It is, I believe, in the direction of Hostotipacquillo.

Nearer to Guadalajara, the Volcano of Tequila has developed obsidian to a remarkable extent. Above the town of Tequila, the walls of the fields are made of great blocks of it, but I had not time there to look for any workings. On the opposite side of the mountain, at Teuchitlán, obsidian rejects are thickly strewn over a great extent of ground.

Teuchitlán is a small town at the foot of a long spur of the volcano, five leagues from Refugio, a station on the railway from Guadalajara to Ameca, but probably more easily reached now from the new branch line to San Marcos. In addition to the obsidian, it has a most interesting ancient site on the summit of the hill, and the remarkable mounds and circles called Huaerchi Monton half way up.

The obsidian rejects are massed at three points. One is a terrace by a mound on a slope above the town, where the ploughed ground is covered with unusually large and long pieces, roughly flaked. The second is a spot at the foot of the hill, near a spring, where vast quantities of flakes and rejects of all descriptions are wedged together in a layer about 12 feet square. I have not been able to refer to my notes for the dimensions of this layer, but an American told me he had taken out 5000 flakes (some of which are in the Field Columbian Museum at Chicago) and I took out 2000 in 1896-7, and that made a very small hole in the deposit. Very many of the flakes are broken. They are of all sizes, from razor-like blades 8 or 9 inches long, to the smallest and thinnest possible. Some of mine are in the Peabody Museum at Harvard and others in the Museums of Bristol and Manchester, England.

On this deposit I found some bones, which, with the skull, were partly in two red earthen bowls. The front teeth, both upper and lower, had been filed into peculiar shapes.

Some three miles from Teuchitlán, on another spur of the ridge, the obsidian cropping out along the top, has been worked, and the heaps of rejects extend for a mile. Some of the flakes are covered with a thick white crust. Obsidian takes a long time to weather, and the lance-heads at Tulancingo are as fresh as if made yesterday, so that where the volcanic glass has materially weathered, a prolonged period must have elapsed.

The town of Etzatlán, about 20 miles beyond Teuchitlán, is a station on the railway to San Marcos, and from it the Island in the Lake of Magdalena can be visited. This is in some respects the most remarkable of the obsidian workings which I have seen, as it appears to have been a manufactory of the many-sided objects hitherto, called cores. There are no pits, but lumps of obsidian occur on the surface, and these objects are strewn over the ground in quantities. In an hour or two my servant collected so many that I brought away thirty-one, and only left the others as too heavy to carry.

Now, in not one of the other workings, among the very many thousands of pieces of all shapes which I have handled, was there one of these "cores." I have found them on temple sites in other parts of Mexico, and at Teotihuacán and Mitla they have been numerous, but their marked absence from the extremely varied heaps of rejects I have mentioned (especially at Teuchitlán, their presence in burial deposits, as at the mound at Guadalupe near Etzatlán, and this enormous quantity, apparently rejects, at Magdalena, seem to make a reconsideration of their name desirable). That they were originally developed from real cores is most probable, the Mexican mind being peculiarly ingenious in finding uses for things which other people would throw away.

