

II.

COMMUNAL MORTARS IN THE PROVINCE OF CORDOBA (ARGENTINE REPUBLIC). By G. A. GARDNER, F.S.A.Scot.

Throughout the north-western provinces of the Argentine Republic, wherever there are traces of ancient Indian settlements, there may be seen in the outcrops of rock which occur with frequency in these mountainous regions, numbers of cylindrical or cup-shaped holes. These are generally considered to have been communal or village mortars, and there is no doubt that they were used as such by the prehispanic tribes.

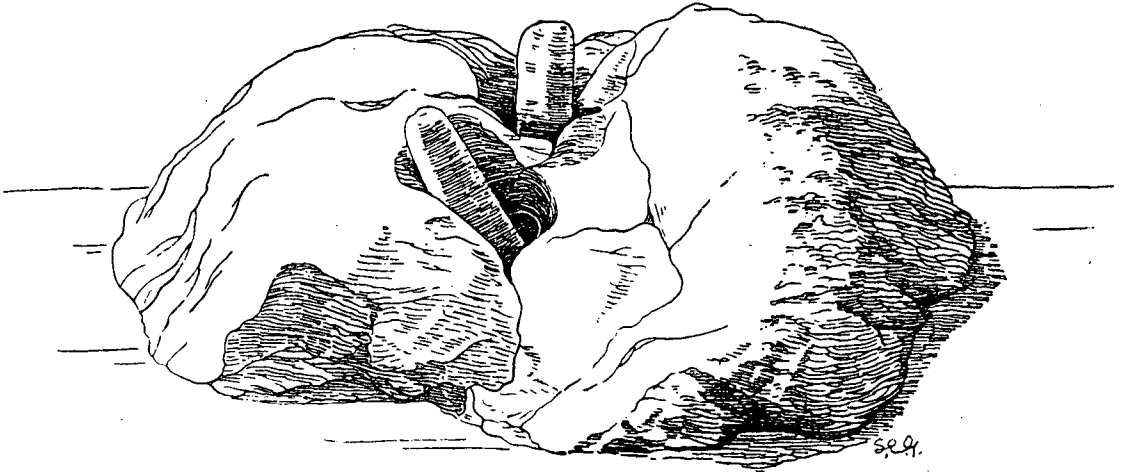


Fig. 1. Mortars with ancient Stone Pestles in them.

The heavy stone pestles employed are sometimes found in them (fig. 1), and the present inhabitants of the districts still use some of the mortars, replacing the ancient stone pestles with wooden ones (fig. 2). Their origin, however, is by no means clear, and presents a question of considerable interest.

In the province of Cordoba these mortars are situated in the near neighbourhood of streams and mountain torrents sometimes on level

ground, but more frequently on the slopes of the surrounding hills. In addition to the mortars in the living rock there are to be found examples excavated in comparatively small, loose boulders, forming what may be considered a link between the small, portable domestic mortars and the groups of fixed communal ones.

The larger outcrops of rock contain mortars varying in number from

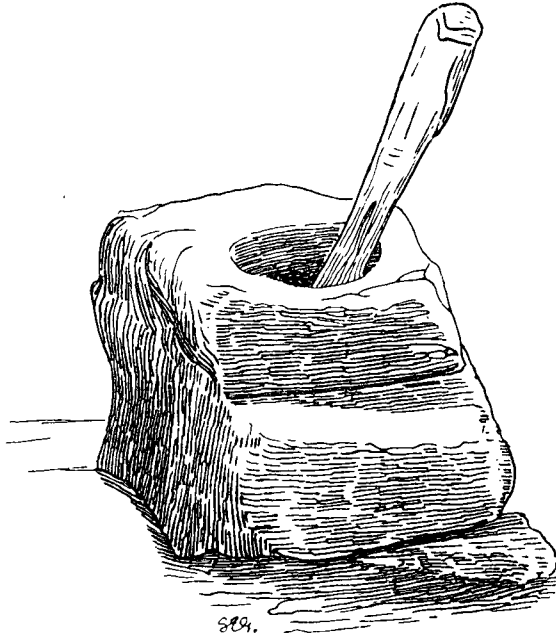


Fig. 2. Mortar with modern Wooden Pestle.

two to ten. One such group examined, consisting of seven mortars, was in a flat bed of decomposing granite at the top of a steep path leading up from a stream, and which at one time might have been the course of a tributary torrent (fig. 3). In a ridge of granite running down towards the upper course of the same stream seventeen mortars were observed, ten in the lower part of the ridge and seven in the upper (fig. 4). Many of the mortars were firmly packed with earth and overgrown with small plants. From one of them eight fragments of an ancient earthenware bowl were removed with the earth, and in others were small pieces of pottery and quartz scrapers. A neolithic settlement was afterwards discovered near this ridge, and the mortars no doubt had been used by the inhabitants.

The smaller masses of rock seldom contain more than one mortar,

although there are notable exceptions. In a dome-shaped rock, for instance, were found eight mortars, three in the more level part, and five in the steep side of the rock, forming as it were pockets.

The three on the level were so close together that they almost merged into one another. Two of them were of a curious funnel shape, unlike any of the other mortars examined.

As regards the mortars in general, they vary from hardly perceptible circular depressions to well-defined cup- or crucible-shaped holes



Fig. 3. Flat Bed of decomposed Granite containing Mortars.

measuring from 60 mm. to nearly 400 mm. in depth, and from 130 mm. to 350 mm. in diameter. In a few cases the openings of the cupules were distinctly oval in shape. Many of them have a smooth depression at one side forming a kind of lip, and where two mortars are found side by side such a lip often forms a shallow channel between them. There is apparently no relation between the diameters and the depths. One cupule, for example, with a depth of 340 mm., has a diameter of 195 mm., while another of the same depth has a diameter of 260 mm.

It has been stated that the artificial origin of these mortars is beyond all doubt. This statement, unsupported as it is by any argument, may be

disputed. The irregular and capricious grouping of the cupules led me to consider whether they might not have had a natural origin before being utilised, as they undoubtedly were, by the primitive inhabitants of the region for grinding their grain.

Their position in the close vicinity of running water suggested the possibility of their being small "pot-holes," and the appearance of many of them favoured this theory. Again, as already mentioned, a prominent feature of many of the cupules is a smooth depression or lip, nearly always on the

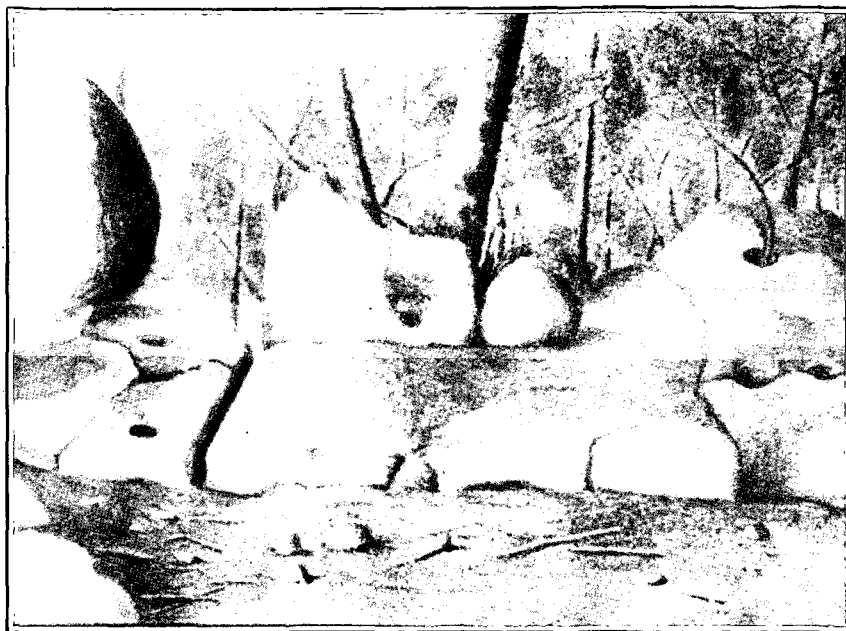


Fig. 4. Granite Ridge containing Mortars.

lower side of the orifice, and strongly conveying the impression of having been caused by water constantly flowing over the edge. To some of the mortars, however, this theory seems inapplicable. In the first place, many of them are situated on the crests of ridges, and, secondly, in several cases the cracked and angular appearance of the rocks in which they lie does not in any way suggest the action of water. Another cause must therefore be sought if the purely artificial origin of the mortars be doubted. This may be found in the character of the rock, either granite or gneiss, which in some parts shows a marked tendency to split in such a way as to leave angular hollows, and in others to decompose, the surface

peeling off in patches, leaving shallow, cup-like depressions underneath. Such depressions were frequently noted in decaying granite, in shape exactly similar to the depressions that have been considered as the beginnings of mortars, with the only difference that instead of being smooth and polished as from rubbing, the interior surface was rough and friable, showing the successive edges of the crusts of rock which had been broken away by the action of the weather. Possibly when natural water-worn cupules were not available use may have been made of such depressions, with the result that they gradually deepened and assumed their present symmetrical shapes. Finally, it seems only natural to suppose that were the mortars of entirely artificial origin they would have been more conveniently placed than many of them are, and in a more regular manner. In several of the groups the mortars are so arranged that simultaneous work at them all would be difficult, if not impossible.

As to one use to which the cupules were put there can be no reasonable doubt. They served, as many of them do to this day, for grinding maize or other grain, but it is possible that some of them may have had a sacrificial use, for, in a defile of the Cordillera to the north-east of Valdivia, is a block with cupules known as the *Piedra Santa de Retricura*, where the Araucanian Indians make offerings for the success of their journey when they go from Chile to Patagonia.

MONDAY, 13th January 1919.

GEORGE MACDONALD, C.B., F.B.A., LL.D.,
in the Chair.

A Ballot having been taken, the following were duly elected:—

Fellows.

ALEXANDER GRAHAM DONALD, M.A., F.F.A., 5 Craighouse Terrace.
WILLIAM DONALD, Flower Bank, Prestwick.

The following Donations to the Museum and Library were announced:—

(1) By Miss ROLLO, 15 Albany Street.

Cup of Lambeth Delft Ware, $3\frac{1}{2}$ inches in diameter, $2\frac{1}{4}$ inches in height, found in the back green of 15 Albany Street in 1918, at a depth of 4 feet below the surface.

(2) By THE ARCHÆOLOGICAL SURVEY OF INDIA.

The Astronomical Observatories of Jai Singh. By G. R. Kaye. Calcutta, 1918. Imperial 4to.

(3) By the DIRECTOR OF THE NATIONAL MUSEUM OF WALES.

Eleventh Annual Report (1917-18), presented by the Council to the Court of Governors. Cardiff, 1918.

(4) By Major T. M. ALLISON, R.A., M.C.T., Member of the Newcastle-on-Tyne Antiquarian Society, 59th General Hospital, B.E.F., France, the Compiler.

Genealogical Tree to illustrate the connection between Normandy and the Royal line of Scotland—through the de Brus or Bruce Family.

(5) By EDWIN HANSON FRESHFIELD, M.A., F.S.A., Juniper Hill, Reigate, the Author.

Cellæ Trichoræ and other Christian Antiquities in the Byzantine Provinces of Sicily, with Calabria and North Africa, including Sardinia. Vol. II. Privately printed, 1918. Royal 8vo.

- (6) By T. J. WESTROPP, M.A., M.R.I.A., 115 Strand Road, Sandymount, Dublin, the Author.

Five Large Earthworks in the Barony of Shelburne, Co. Wexford. Reprint from the *Journal of the Royal Society of Antiquaries of Ireland*, vol. xlviii., Part 1.

- (7) By THE NATIONAL ART-COLLECTIONS FUND.

Facsimile of the last letter of Mary Queen of Scots, addressed to her brother-in-law Henry III., King of France, on the night before her execution at Fotheringay Castle, 8th February 1587. 1918. Crown folio.

- (8) By NINIAN HILL, 3 Murrayfield Avenue, the Author.

The Story of the Scottish Church from the Earliest Times. Glasgow, 1919. 8vo.

The following Communications were read :—