

## II.

NOTES ON QUERNS, WITH SPECIAL REFERENCE TO ONE OF UNUSUAL FORM FOUND IN A MOSS NEAR THE MEIKLE LOCH, ABERDEENSHIRE. BY LIEUT.-COLONEL WILLIAM ROSS KING OF TERTOWIE, F.S.A. SCOT.

Few relics of bygone days are more generally distributed than the quern or handmill. It is, however, an error to suppose that they belong to a particular period, or are necessarily of great antiquity. They have undoubtedly been common in Scotland, as in many widely distant parts of the world, from the earliest ages; nor can we fail to recall to mind the frequent references made to them in Scripture. Their existence also in the pre-Christian era of this country has been demonstrated by their discovery in graves containing the calcined remains of pagan funeral rites. They have been exhumed with ancient Scottish canoes; have been found in our own prehistoric lacustrine pile-dwellings and in the *crannogs* of Ireland; in the *airde houses* of Aberdeenshire and Forfar; in the aboriginal grain-pits of Wiltshire; on the line of the great wall of Antoninus Pius; in the ruins of ancient Isurium and other British-Roman sites; as well as in *lejkkenmöddings* and tumuli. But though their antiquity is thus sufficiently attested, it is to be recollected that their use can hardly be said to have become as yet quite extinct among us.

Water-power probably first began to be employed in Scotland for the purpose of turning flour-mills, somewhere about the latter end of the eleventh century; but the quern, nevertheless, long continued

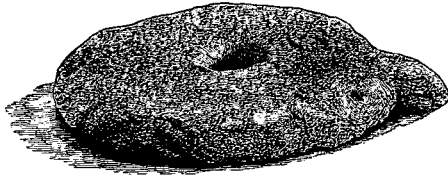
to be more or less used, in spite too, of fines and penalties incurred when the custom of "thirling" was established; and they may occasionally be seen at work to this day in remote parts of Sutherlandshire, and in some of the islands west of Scotland. It is, therefore, almost impossible to say what may be the age of any quern *per se*, and though there are ruder forms among them to which we may safely assign an earlier date than to others, it is chiefly by attention to the circumstances and conditions under which they are found that we can arrive at any reliable approximation to the antiquity of individual specimens.

The original means employed by primitive man for the purpose of reducing his grain to meal would obviously be the first suitable stone that came to his hand; the artificially rounded one, with its slightly hollowed slab (which are so often found in Scotland), would soon follow, and from these "grain rubbers" the transition was a simple one to the rudely made millstone revolving on a pivot; the principle thenceforth adopted all the world over. For we find the handmills of the early Egyptians, of the Jews of old, of the Romans, of primitive Scotland, England, and Ireland, of the Arab and of India past and present, all of one and the same type—though naturally presenting varieties in minor points.

The quern may be described in general terms as two flat round stones placed one above the other, the upper with a grain-hole through the middle, and a socket near its edge for the upright stick by which it was turned, the lower one having a vertical pivot which worked in the feeding-hole of the other. The pair are usually of the same material, and though granite and sandstone of different kinds appear to have been most commonly employed, querns have been found of gneiss, grit, elvine, micaceous-quartzite, pudding-stone, syenite, and other rock, as well as of wood, though, from its perishable nature, the occurrence of the latter is rare. The upper stones or "riders," on which part the principal amount of skill and labour was necessarily expended, range in diameter from about nine inches to twenty-four, while their thickness varies from an inch and a half, to a foot; they also differ in the form and size of the grain-hole or "eye," in the position of the handle, and in their general amount of finish. In many instances the grinding faces of the upper stones are to a greater or less extent concave, and the lower ones correspondingly convex; more generally both are flat. The circular quern is most common,

but oval riders are not unfrequently met with. Of these I recently saw a good specimen, found at Esslemont, in Aberdeenshire.

The upper stone here figured is of an unusual form, and most probably of a very early date. It was found some sixty-five years ago in a moss near the Meikle Loch, Slains, Aberdeenshire, in a spot where several flint arrow-heads have since been obtained. This stone lay embedded in undisturbed peat at a depth of about seven feet below the surface, and was accidentally discovered in digging a pit for the concealment of smuggled spirits. It remained at a neighbouring farm-house, exactly as dug up, from the day of its discovery until the present year, when it came into my hands, (through the kindness of Mr Dalgarno, Corr. Mem. S.A. Scot.)



Quern Stone found near the Meikle Loch.

The fact of the superincumbent peat being, as remarked, in an undisturbed state, would appear to indicate a very remote date as the period of the quern's burial, without accepting the theory of M. Boucher de Perthes on the accumulation of that matter, according to whose calculation of only three centimetres growth in a century, it would have required nearly 7134 years to form the seven feet of thickness which lay above this stone. The increase of peat is, in fact, so materially influenced by vegetation, by moisture or dryness of climate, by the presence or absence of forest, and the occurrence and extent of inundation, that it appears almost impossible to arrive at any data by which an average rate of increase could be calculated; consequently, the depth at which such remains are found in it is of little use in estimating their probable age.

The material of which this quern is formed is a kind of syenite which

is naturally so adapted to the purpose as to require little of the usual dressing given to the grinding faces. The process said to have been adopted with similar stones was that of placing them in running water till the more porous portion of the inner face was so far softened as to be easily scraped off, thus leaving the harder parts in the required relief. In the present case, the soft and hard portions are nearly balanced, the latter being closely and evenly interspersed over the whole surface in separate particles, curiously resembling grains of boiled rice.

In diameter the stone is about 15 inches, by  $2\frac{1}{2}$  in thickness, and its upper surface is very rough and unfinished, indicating little care or skill in the manufacture. The feeding-hole is smaller in its outer orifice than is usual, but the chief characteristic of this quern is the absence of any socket for a handle. In the commoner forms, as is well known, this is placed near the edge of the upper face, in some cases it is in the side or thickness of the rider, and in others in a projection left for the purpose beyond the outer circumference; but the projection in the present instance has never been bored at all. On its under side, however, is a slight groove, which may also be imperfectly traced on either side at its point of junction with the body of the stone, from which fact it would appear that the quern had been rotated by means of a thong or withy tied round this neck. The downward inclination of the point seems to strengthen that belief, as being intended to prevent the liability of the thong slipping off from the upward strain. That the stone might have been turned by this means with as great facility as with the stick is evident, and the groove could hardly have had any other use; were it so, however, the projection itself must then have been employed as a handle, which is equally unusual; for excepting in the case of very large stones, which were turned by a horizontal or inclined lever, we know of no other means by which it was customary to work the handmill but the upright stick, and in some few instances finger-holes.

In a *kjokkenmödding* or refuse heap near Seacliff, East Lothian, a specimen of the latter kind was lately discovered, having two holes side by side, and close together, near the circumference, undoubtedly intended for the insertion of the fingers in order to turn it, and described as "worn perfectly smooth, and highly polished by long use."<sup>1</sup> As illustrating the

<sup>1</sup> Proc. Soc. Ant. Scot. viii. 359.

principle of the lever, I may mention a large Dorsetshire quern in the British Museum, which has the handle-socket cut in the side of a massive rider nearly a foot thick; this, by the way, revolves upon a conically formed nether-stone fitting into its hollowed centre, thus obviating the necessity for a pivot and assisting the exit of the meal. A modification of the same principle is not infrequently found in the shape of a small raised boss on the centre of the lower stone, with a corresponding cavity in the upper, an arrangement which is sometimes reversed, the projection being on the upper stone, and the cup or hollow in the lower. In the Museum of the Royal Irish Academy also is a very heavy top stone, 7 inches in thickness, on the outer side of which is a square hole for the reception of a metal bar, by means of which it has been turned. In this instance "the grain-hole is a double cone, meeting in the centre like an hour-glass, the openings above and below being  $3\frac{1}{2}$  inches across, while the small oblique aperture by which they are united scarcely admits the point of a finger."<sup>1</sup> The heavy stones are still in use in India, the long wooden handle or lever (which is in the form of an obtuse angle or elbow, with the shorter horizontal part fitted on the upper stone), being moved by a person walking round the mill. The smaller quern, similar to our own, may also be found in daily use in many parts of that country; I have often seen them on the Nilghiri Hills, with two women squatted opposite each other, grinding.

In contrast to the above-mentioned massive specimen in the British Museum, and in the same case with it, is a pair of stones, upper and lower, from Northumberland, in which, although of unusually large diameter, the thickness of the rider does not much, if at all, exceed 1 inch; it is probable, however, that this may be in part the result of long use and friction.

Professor Wilson<sup>2</sup> alludes to an engraving of a quern, in which the upper stone is funnel-shaped, with grooves radiating from the centre, and to another of similar character, in the Scottish Antiquarian Museum, which, being found on an ancient Roman site, is doubtless, like the former, correctly assigned to that people. In the later examples of British querns the "eye" is sometimes encircled by a plain raised lip, in some cases extending to the handle-hole or socket. In others the circle is rudely

<sup>1</sup> See Cat. Mus.

<sup>2</sup> Prehist. Ann. Scot.

chiselled, or in the form of a simple, channelled groove, and these are probably the first attempts at ornamentation, which becomes more developed in succeeding specimens. Of such I may mention one in the Irish Academy Museum, decorated with a cross and circle carved in high relief, and a second, somewhat similar in design, but neatly incised. An ornamental cross of superior work is shown on a quern found along with a number of bronze relics at Balmaclellan, Galloway, which is engraved in vol. iv. of the Proceedings of this Society. In vol. vi. also is a top-stone carved in vertical ribs, having a raised fillet round the eye as well as round the socket of the handle, which is in a projection of the stone.

Another description of handmill of more recent invention than the flat stones, though of some antiquity, is the "pot-quern," of which, however, instances are less common than of the other. This consists of a round, or sometimes hexagonal, stone bowl, containing the rider within it, and having an outlet for the meal bored obliquely through the side of the lower part. The eye or hopper is formed in the upper stone exactly as in the simple flat quern, and similarly some have a single handle, some two, on opposite sides of the circumference, and others finger-holes; while the metal and wooden pivots, and the stone boss already described as their substitute, are common to both. I had an opportunity of seeing in Ireland an example with feet attached to the bowl, a type which according to Wilson is principally confined to that country.

Pot-querns vary considerably in dimensions, some of the smaller ones being only 4 inches high by  $9\frac{1}{2}$  inches in diameter, others  $8\frac{1}{2}$  inches high and as much as 17 inches in diameter, and others again measuring 10 and 11 inches in height, with a diameter of 16 inches, the interiors of these latter being respectively 7 inches, and 1 foot across. These different measurements will show that the size and proportions of the pot-quern are as various as those of the more ordinary one.

The pot-quern was possibly invented subsequently to the introduction of mills turned by water, which were at first very primitive and ineffective machines, having stones not much larger than those of the ordinary quern, and performing but little more work. Such corn-mills existed within a comparatively recent period in the Shetland Isles, where each farm had its own, placed generally in a small rude shed, and grinding from day to day only so much as the immediate necessities of the household might demand.