

SOME STONE CIRCLES IN IRELAND.

By A. L. LEWIS.

It is well known that dolmens or cromlechs, great and small, are very numerous in Ireland, but little is heard of circles in that country; still there are some, and it is to be regretted that Mr. Borlase, when collecting and arranging the materials for his great book on *The Dolmens of Ireland*, in which he records 898 of them (p. 418), did not prepare a list of the circles which he found mentioned on the maps and in the books and manuscripts consulted by him. He does indeed mention a few examples "which, amongst others," came under his notice, and gives some illustrations, mostly from drawings by J. Windele; but, as he leaves out the largest and most noteworthy, about which nevertheless it is obvious from his book (p. 1011) he knew something, I am inclined to think that he may have intended to write another book about Irish antiquities, and may have reserved some of the information in his possession for that purpose.

The circles of which Borlase reproduces drawings are very small, and at first sight appear unimportant, but they are interesting, and even valuable, in helping to show the numerous varieties of circles that exist in different places. Although these are so small, the stones composing them are as large as many of those in the circles of Cornwall and Dartmoor; one circle, only 9 feet in diameter, has an outstanding stone 12 feet to the south; another, only 8 feet in diameter, has an outstanding stone 9 feet to the north-east: these stones seem to be too near the circles to be useful for astronomical observation, and the question arises whether they may not themselves have been objects of adoration. In another place we have two small circles in line, N.N.E. and S.S.W., with a dolmen between them. Two other circles have the central stone which the modern "Druids" regard as a necessity, but which does not seem to have existed at any time in the English circles; these are most likely to have been burial cists from which the

FIG. 1.—FROM BORLASE, *Dolmens of Ireland*.

covering mounds or cairns have been removed, but, if they should chance to be merely stone tables, and if similar things should be proved to exist in Wales, it must be borne in mind that the connection implied is not between England and Wales or England and Ireland, but between Wales and the south-west of Ireland.

The largest circles in Ireland, as I have already said, are not mentioned by Borlase; they were concentrated around Lough Gur, which is 10 or 12 miles south from Limerick and 9 miles north from Kilmallock railway station. Murray's Handbook of 1864 states that one hundred early remains and circles are known to have existed there within the memory of man, but it does not say much about them. Mr. Crofton Croker, who wrote—as he said from memory—a very good account of some of them in the *Gentleman's Magazine*, of 1833, said there were monuments all round Lough Gur, and even fifteen miles from it, connected with one another. The letters of the alphabet only just suffice to denote the circles and other stone remains marked on the 6-inch ordnance map (surveyed in 1840 and revised in 1900–1), and that without regard to forts and other constructions of earth and stone, but many of the things marked on the ordnance map, or described in the older accounts, are not now to be found.

Lough Gur is in 52°31' north latitude, and its present very irregular coastline is about three miles round; up to about 1839 it was nearly double that, but a large shallow area was then partly drained, and a rocky island in the middle converted into a peninsula; access to this island was formerly by two causeways, each guarded by a square tower and other fortifications, which again were hopelessly commanded by the island hill behind them. There are two smaller islands which are thought to be partly if not wholly artificial, on one of which there is also a mediæval tower, and on and round these, when the water was lowered, great quantities of bones of animals, and numerous stone and bronze weapons, etc., were found. The surface of the lake is from 240 to 250 feet above sea-level, but some of the seven hills close to its banks rise to more than 500 feet above sea-level, and give it a very picturesque appearance; each of them was crowned in prehistoric times by a fort, now destroyed, and those appear to have been connected by other works, so that it was a place of great strength, and probably of great sanctity, in prehistoric and also in mediæval times, for the country round is as full of remains of the latter as of the former. It was a great stronghold of the Desmonds up to the time of our Queen Elizabeth.

I will now proceed to describe the circles and other remains denoted on the plan by letters.

A. Rockbarton, the seat of Lord Fermoy, is a large demesne, nearly two miles long, and in it, about a mile off the edge of the map, was a circle, the stones of which seem to have been broken up to make a wall for a plantation which occupies its site. About 650 feet from this circle, in a line 18 degrees E. of N., according to the 1-inch ordnance map, there still remains a standing stone, 7 feet high, 5 feet broad at the base, and 1 foot thick. One mile in the opposite direction, 18 degrees W. of S., is a little hill-top, well-marked on the ordnance map, but now

hidden from the site of the circle by trees, etc. This line is nearly the same as that through the circles at Stanton Drew to Hauteville's Quoit, and Sir Norman Lockyer tells me that having regard to the latitudes and to the estimated heights of the respective horizons this was the direction in which at this circle Capella rose in 1300 B.C. and Arcturus in 950 B.C., while at Stanton Drew¹ the date indicated by Arcturus was 1690 B.C. There are some scattered stones in another plantation in this park which may be the remains of some other monument.

B. Here are six small stones in line, 50 degrees W. of N., and E. of S., with three in another line at a right angle on the north-east side, and two or three more at the south end; these are incorrectly described on the 6-inch ordnance map as a stone circle. A circular cup-shaped hollow in the ground, either natural or artificial, is said to have existed south-west from these, but is not marked on the 6-inch map, and I did not see it.

C, D, E, F, form a group which I will describe fully presently.

G. A stone circle is marked here on the 6-inch map; there are in fact seven small shapeless masses of stone forming an irregular ring, 10 yards by 8 yards across, but they have a very natural appearance, and may have been under water in prehistoric times. Close to, but above them, are some earthworks, enclosing a space about 70 feet square, open to a low cliff, which was, I suppose, at one time the bank of the lake.

H. At this spot is a ring of low turf bank with small stones, about 24 yards in diameter, with what may be the remains of a tumulus inside it, all very imperfect and hardly visible on the side nearest to the lake, toward which the ground on which it stands slopes.

I. Here is a similar but better structure; a double ring of stones, some of which are 4 feet square by 1 foot thick. The two rings are about 6 feet apart and the space between them is more or less filled up with earth; the area inclosed by this wall of earth and stone is about 100 feet in diameter, and its surface is very irregular. Professor Harkness, F.R.S., who contributed a good description of some of the monuments round Lough Gur to the *Quarterly Journal of Science* of July, 1869, dug into this circle and found some human remains, mostly of children from six to eight years old, which included parts of a skull; so far as these remains enabled Professor Harkness to form any opinion he thought they belonged to "a broad-headed people, with small eyes and of short stature, approximating more nearly to the present Finns and Lapps than to any other race of men." Borlase (*Dolmens of Ireland*, p. 1011) says the fragments of this skull are in the museum at Queen's College, Cork, where he examined them.

K. This is the site of another small stone and earth circle of similar construction, which Professor Harkness found to be very imperfect forty years ago, and which I did not find at all. All these are described on the 6-inch ordnance map as "stone circles," but it will be seen that they are very different from what

¹ *Stonehenge*, p. 174.

we in Great Britain understand by that term, and I see no reason to suppose that they were anything more than burial grounds. There appear to be some very like them in Strathspey, near Aviemore Junction, but each of the Scottish examples was surrounded by an open circle of pillar stones, of which there is no trace round those on Knockadoon in Lough Gur.

L, M, N, O, P, form another special group which I will describe presently.

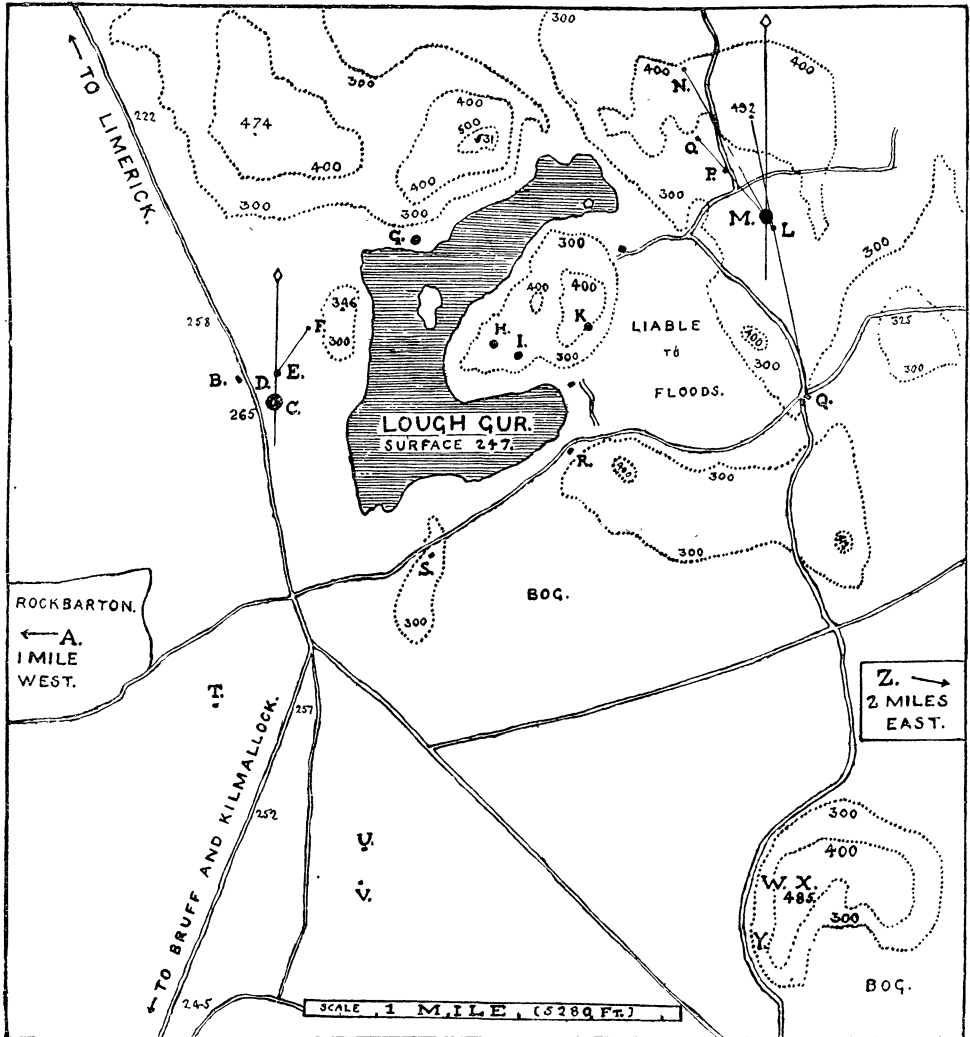


FIG 2.—MAP OF DISTRICT (TRACED FROM 6 IN. ORDNANCE MAP AND REDUCED BY PHOTOGRAPHY).

Q. At this point, called Lough Gur Cross, there are some cottages, and in the garden of one is a "leagaun," or standing stone, about 8 feet by 8 feet by 2 feet thick. A woman came out of the cottage and told me there was a crock of gold under the stone, which was guarded by a terrible ghost. In reply to a question she said she had never seen the ghost, but other people had, and, on my

inquiring why they did not look for the gold in the daytime, she said it was no use, because it could only be found at night, and then the ghost was there to protect it.

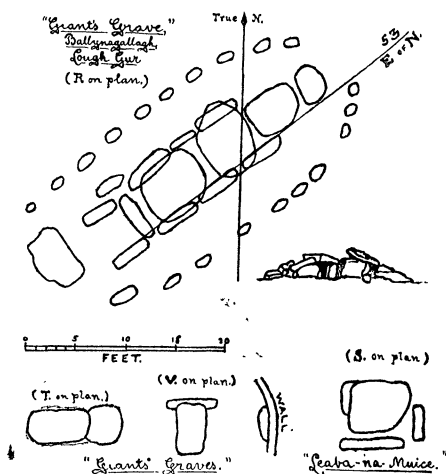
R, S, T, U, and V are remains of "Giants' Graves," probably sepulchral chambers, with which I will deal fully presently.

W, X, Y. Stone circles are marked on the 6-inch ordnance map at these spots, but do not now exist. I walked along the road by the side of which they are supposed to stand, but could find nothing. I also inquired of cottagers on the way about them, and was told there were no such things there.

Z. At a place called Ballynamona, two miles east from this point, another circle is marked on the 6-inch ordnance map, but, as I was told it had been destroyed, I did not go to look for it. I do not know whether it may have been the circle near Inch St. Lawrence of which the Rev. P. Fitzgerald wrote in 1826 :—"There is a stone circle near High Park, where a number of stones are to be seen, some lying in confusion, others in circles or direct lines ; it is remarkable that they are all round, and one large stone detached from the rest stands erect which measures 9 feet in height, nearly the same in breadth, and is 4 feet thick on one side." Some remains are also marked on the 6-inch O.M. and spoken of by Crofton Croker on the south edge of the lake. Those I did not see and do not know whether they were really remains of circles or of doubtful origin and purpose like those at G on the north side.

We have now to return to the "Giants' Graves," R, S, T, U, and V, and to the two great groups of circles and stones, L, M, N, O, P, on the north-east side, and B, C, D, E, F, on the west side of Lough Gur, and I will ask you to observe that the outlying stones of the circles on the east side of the lake are to the north-west, and that those of the circles on the west side are to the north-east.

Of the "Giants' Graves" that marked R on the map is the largest and best preserved ; its total length is about 35 feet, in a line 53 degrees E. of N., and W. of S. ; its central feature is a chamber about 14 feet long, 5 feet wide, and 3 feet high, the capstones of which seem to have been shifted, though two still remain on the upright stones which supported them ; there is probably another smaller chamber at the north-east end, and, at the south-west end, there was either another chamber or a small open shrine, such as appears in an almost identical structure in Antrim, described by Dr. Sinclair Holden in *Anthropologia*. In both cases several small stones surround the chamber, extending the width of the whole monument, in this



case to about 15 feet. A description of this "Giants' Grave," from the Ordnance Survey Letters, is given by Borlase, who thought it had been destroyed, and he also gives a copy of a sketch made by Miss Margaret Stokes "between the date of the survey and its destruction"; this however very fairly represents its present condition, the alleged destruction not having taken place. Murray's Handbook, 1864, says that a chamber covered over with large flags was destroyed by treasure seekers after the death of an old woman who used to dwell in it, but it is not clear whether that refers to this or to some other monument formerly existing nearer the lake.

The "Giant's Grave" marked T on the map consists of two stones, each 1 foot thick, one 6 feet by 3, and the other, 4 feet square, lying on the ground level, and apparently resting on one or more underneath, but so closely that I could not see what was below.

Of that marked V on the map only three stones are left, one, 5 feet long and 2 high, probably in its original position; another, 5 feet by 3, one end of which rests on the upright stone and the other on the ground, and a third stone built into a wall, 5 or 6 feet away from the others.

The monument marked U on the map is enclosed in private grounds, and, as I was told that there is no more left of it than of that marked V, I did not go to see it. It was of one of these two that the Rev. F. Fitzgerald wrote in 1826, that it had "lately been broken down by a farmer, who had two of the stones taken to make pillars for his gateway."

The dolmen marked S on the map is also described by Borlase from the Ordnance Survey Letters; it consists at present of two upright stones in position, and a third fallen, with the capstone which they supported lying upon it, inside the chamber it originally covered, and which is about 6 feet by 3 or 4, and 3 feet high; whether it were ever any larger cannot now be ascertained. I have found no record of other stones forming any extension of it. This little monument is situated on the north end of Bally-na-gallagh hill, overlooking the south end of Lough Gur, and is called Leaba-na-Muice, which, I am told, means the bed of the pig or pigsty, a use to which this little dolmen may very likely have been put at some time or other. Mr. Lynch, however, strongly objects to any such suggestion, and says that pigs were offered as sacrifices, and that priests were on that account called pigs by the Phœnicians and others, and that the name in the case before us really means "the bed in which the Druid sleeps." The Rev. F. Fitzgerald writing in 1826, said that a few years previously a stone coffin and a human skeleton were found near this dolmen; they may however have been found in the graveyard of the old nunnery, a quarter of a mile south from it. Borlase mentions but does not give plans of any of these structures, and does not appear to have visited this part of Ireland himself.

Of the group on the north-east side of Lough Gur, L represents a circular wall 33 to 34 feet in diameter, of small stones, Lynch says 28 in number, standing 3 feet high; the space inside them is filled up with earth nearly to their tops, and forms in fact a round raised platform: 75 feet from it are two concentric circular walls, 184 and 155 feet in diameter respectively, formed of stones 5 or 6 feet high; the space

between these walls (nearly 14 feet) is also filled with earth to a height of 5 feet, so that they form really one round wall, 14 feet thick and 5 feet high. In the middle of this enclosure (marked M on the map) is another circular wall of upright stones of similar height, enclosing a space about 48 feet in diameter; this wall also had an earthen bank with perhaps an outer stone facing on the outside of it, for some of the bank still remains on the east side, the rest having, I suspect, been used in making the fence which runs through the circles. This fence I was told was constructed "when the bad times came," it being thought desirable to divide what was then one farm between two brothers. Mr. Crofton Croker (writing as he said from memory) in 1833, said there were several concentric circles here, and there are some small stones on the east side of the inner circle which look like part of another, but the ground slopes down there, and I think they were only placed there to make a step or terrace, and were never part of a complete circle. A line drawn from the centre of L through that of M and its inner circle, in a direction 29 to 30 degrees W. of N., arrives at a stone (marked N on the map), 8 feet high, which stands on the top of a ridge 2,500 feet away; this stone is now hidden by trees and buildings, but for which it would certainly be visible on the sky-line (2 degrees high) from the circles. Two other standing stones (marked O and P on the plan) are shown on the 6-inch ordnance map in another line, 41 degrees west of north, from the centre of circle M, and 860 and 1,450 feet away from it respectively; the nearest is now only 4 feet 3 inches high, but looks as though it had been broken down; it stands on a bank above the side of the road. I did not go to the other, which Croker, in 1833, said was 9 feet 4 inches high, 6 feet 9 inches wide, and 13 inches thick, but I think I was told it had been thrown down. Ten degrees W. of N. from circle L is the highest point round about, and in the same line, 10 degrees E. of S. is the stone marked Q on the map, where the ghost is said to guard the gold; it is 2,480 feet away—within 1 per cent. of the same distance as the stone N to the north-west. None of these stones can now be seen from the circles, because of modern obstructions, but I believe all were visible originally; the fact of their forming lines with the circles has not, I think, been mentioned by any previous writer, although it is clearly shown on the 6-inch ordnance map. Not one stone of this whole group is to be found, however, on the 1-inch map, and Mr. Borlase seems to have thought that it was a dolmen surrounded by a stone setting.

Before going further, I should like to draw attention to the very striking resemblance in principle, though not in detail, of the plans of these circles in Ireland, and those of Stanton Drew in Somersetshire. In both we have a line, from the centre of a smaller circle through that of a larger one, to a single stone at a considerable distance in a northerly direction; and a second line from the middle of the larger circle in another direction. At Stanton Drew these lines point to the east of north, and in these Carrigalla circles they point to the west of north, but I shall presently deal with some circles on the other side of Lough Gur, which are planned in a very similar manner, and in which the lines point, as at Stanton Drew, to the east of north.

Respecting the Carrigalla circles Captain Boyle Somerville, R.N., writes to me: "The alignment of N. 29, 30 W. with an altitude of 2° produces a declination of $33^{\circ} 35' N.$, namely, for Capella in 1600 B.C., or Arcturus 500 B.C. (of course, setting). The alignment of N. 41 W. at an altitude of 2° produces a declination of $28^{\circ} 52' N.$ and is for Capella 2500 B.C., Castor 2000 B.C., or, what I believe to be the real object, as I have got declinations in several places of about the same amount, which do not fit with the above early date, the MOON! The moon changes her tropic declination gradually from about $28\frac{1}{2}^{\circ} N.$ and S. to about $18\frac{1}{2}^{\circ} N.$ and S.; it takes 18.6 years to get from $28\frac{1}{2}$ back again to $28\frac{1}{2}$ (the Metonic Cycle) and I believe the alignment in question was intended to mark the ends of each such cycle." (At Stanton Drew the Metonic Cycle number 19 appears to be embodied in the proportional measurements. See *Journ. Anthropol. Inst.*, 1897, p. 199.)

In single instances, such as the "Friar's Heel" at Stonehenge, it has been asserted that the outlying stone had no connection with the adjoining circle, but when we find so many cases so much resembling each other, it can no longer be contended that all these things had no meaning, but were purely accidental. There must have been a connection and an intention of some kind, and the similarity of the system indicates that that connection and intention were the same in principle, though the differences in detail show that the particular objects in view were not exactly the same in all cases. It is, however, important to discover if we can whether the influence under which these stones were arranged in this manner passed from Ireland into Great Britain or from Great Britain into Ireland.

We come now to the last remains which I have to describe—those on the west side of Lough Gur, marked C, D, E, F on the map. At E is a circle 55 feet in diameter, composed of fifteen large irregular masses of stone, with a space for another, or for an entrance, which, I think, from its position, is more likely; the dimensions of the stones vary from 3 to 7 feet, and they do not for the most part look as though they had ever stood in a more erect manner than they do now, though it is said by Croker that they did. Looking to 35 degrees E. of N., according to the 6-inch ordnance map, we see a stone 10 feet high, 7 feet wide, and $2\frac{3}{4}$ thick, 740 feet away, and we seem also to have here a group of three hills such as I have often noticed in other places. A prolongation of this line to the south-west, through the entrance to this circle, would probably have struck the centre of a circle destroyed in or about 1830, which is variously described as having been 50 yards, or 160, or 170 feet in diameter—perhaps it was 165 feet, or three times the diameter of circle E. It is said to have possessed 72 stones in 1826, but only 60 in 1828, and of these all but six were destroyed in 1830; if any of those six are left now, they are probably built into some of the stone fences, for I did not see them; the stones of this circle are said to have been about 3 feet high, some close together, and others wide apart, which seems to suggest that originally there may have been many more filling up the gaps. As this circle is entirely destroyed I cannot say positively that its centre was strictly in line with that of circle E and

the outstanding stone F, but, having regard to the distances at which it is stated by various authors to have stood from circles E and C, I think it must have been so, and in that case we have this line through the centres of two circles D, E, to the outstanding stone F, and to a prominent hill-top beyond it, in a line 35 degrees E. of N. Neither the destroyed circle D, nor the still existing circle E, is known to have had any bank of earth about it, but Beaufort, writing in 1828, speaks of an irregular conical stone, 4 feet high, 20 feet S.E. from the destroyed circle, and of another fallen stone 45 feet due east from the stone just mentioned; this is most likely the one spoken of by Crofton Croker in 1833 as a large flat stone, $7\frac{1}{2}$ feet by $4\frac{1}{2}$ by 6 feet high, supposed to have been an altar. Croker also mentions a stone, 5 feet high by $6\frac{1}{2}$ by 4, 160 yards north-east from circle E and another (that which still remains) 11 feet 9 inches high, 100 yards further in the same direction; but here again it is uncertain whether this stone were in the line E F, or whether it

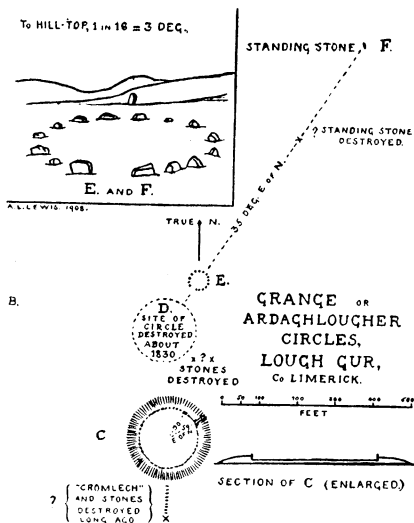


FIG. 4.—PLAN OF GRANGE CIRCLES, ETC.

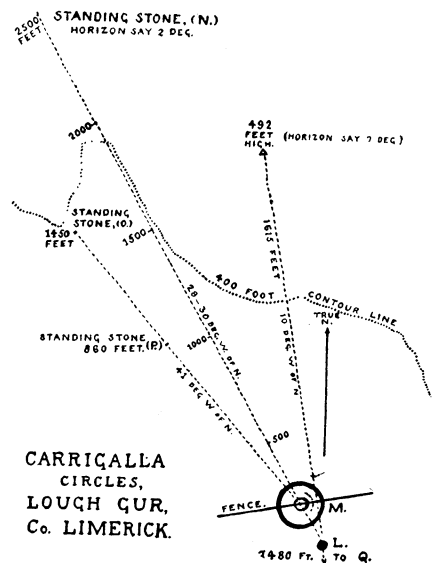


FIG. 5.—PLAN OF CARRIGALLA CIRCLES, ETC.

were in a different direction from the centre of E, like the stones marked O and P at the Carrigalla circles. The line 35 degrees E. of N. is, however, still existing as between E and F, and is the same as that of the "Kingstone" from the Roll-rich circle in Oxfordshire, and of some prominent hills from other British circles. Sir Norman Lockyer informs me that, estimating the height of the horizon at three degrees, this line, in the latitude of Lough Gur, would have struck the rising points of Capella in 1750 B.C., and of Arcturus in 500 B.C.

Lastly, we come to the consideration of the circle marked C on the plan, which has for various reasons attracted more attention than any of the others. In its present restored condition it is a circular space, 150 to 155 feet in diameter, fenced in by a perfect wall, about 5 feet high, of large stones, several of which are 6 feet or more in height, the largest being 9 feet high, $6\frac{3}{4}$ wide, and 3 thick; before the

restoration the ground here seems to have been lower and this stone consequently higher above it; this stone stands 30 degrees E. of N. from the centre of the circle, the line in which Sir Norman Lockyer says Capella rose in 1950 B.C., and Arcturus in 250 B.C. A bank of earth 30 feet wide surrounds the stone wall, which forms an inner facing to it; on the outer side the bank slopes to the ground level, which is 7 feet below its summit, the inside being 2 or 3 feet higher than the ground outside. There is but one entrance—a passage, 3 feet wide, lined with stones on each side, those at the inner end being $6\frac{1}{2}$ or 7 feet high; this entrance is 59 degrees E. of N. from the centre of the circle, a direction which Sir Norman Lockyer connects with the rising of the sun in May. There are now about 125 stones in the wall, and 12 in the entrance passage. Beaufort in 1828 described this circle as possessing only 43 stones, some of them very small, surrounded by a mound about 15 feet broad and about 4 feet high, which skirted along the outside edge of the stones, enclosing the area within them as a pit of 3 or 4 feet deep. Crofton Croker in 1833 called it a sloping bank, 12 feet wide, and 6 feet high. These apparent discrepancies are explained by the fact that the circle was restored, some time in “the sixties,” by Messrs. John and Edward Fitzgerald, who occupied the land on which it stands, and by their landlord, the Count de Salis. Mr. Edward Fitzgerald, however, told Mr. Lynch that only a few new stones were put in at the restoration, all the others now on the ground belonged to the circle, but were covered by earth from the surrounding rath or bank. It is said that formerly there was a cromlech 100 feet due south from this circle, the tops of the stones of which approached one another, and that a row of flagstones led like stepping-stones from it to the circle, but all these have long been destroyed.

Before this restoration took place the appearance of the then sloping bank and the half ruined and half buried wall of stones would, I suppose, have been very like that of the mysterious structure on Bodmin Moor called “Arthur’s Hall”; and if the restoration of the Irish circle be correct it seems likely that while the Grange circle certainly was as “Arthur’s Hall” is, “Arthur’s Hall” probably was originally as the Grange circle now is, the chief difference between them being that one is round and the other oblong. Both are in the midst of a number of circles from which they very much differ in construction, and with the general scheme of which they do not appear to have any connection, and it has occurred to me that they may have been used for a very different purpose. The Grange circle as restored would be useless as a fortification, the rampart being much easier to ascend from the outside than from the inside, and the single narrow entrance would be very inconvenient for most purposes. Lynch says that Lough Gur was the centre of one of the hunting districts of the ancient Irish, and vast quantities of bones of *bos longifrons*, pigs, goats, stags and dogs, were found when the surface of the lake was lowered; and I would suggest that in prehistoric times there may have been great tribal game drives, in which (as formerly in Australia) a large tract of country would have been surrounded by an ever-narrowing ring of men, women, and children, shouting and howling, and driving all the wild animals before them over the rampart

wall into the pound where—the narrow entrance having been closed—they could be kept and killed as they were wanted. Against this it may be said that the cromlech at the south and the orientation of the entrance suggest some religious purpose for the circle, but it is not unlikely that the festive game drive might have been preceded and followed by some rites or ceremonies. It may also be asked why should the inside of the pound have been raised above the natural surface, but that question may be asked in any case, and it may be that some of the raising and levelling is due to the restoration. I do not, however, say that this circle was a game-trap or pound, but merely that it may have been, and that it would have been a very convenient means of providing a continuous supply of animals for sacrifices and food.

In the absence of exact measurements and plans, I cannot say much about proportionate distances, but I may point out that the inside diameters of circles C and M are apparently about equal, and that the distances of stones N and Q from circle L are also the same within the allowance of 1 per cent. for errors of workmanship, which Professor Flinders Petrie has found in British earthworks. The distance also between circles L and M is about two diameters of L, and the distance between the centres of L and M is about five diameters of L.

Having now finished my description of the various remains around Lough Gur, I wish, before making some general observations on circles and their surroundings, to acknowledge my indebtedness for information and assistance in my investigations in Ireland to the late Mr. William London, M.P., to Mrs. Fitzgerald, with respect to the Grange circles, and to Mr. O'Donnell, regarding the Carrigalla circles.

There are some things to unlearn as well as to learn respecting stone circles, and at the present time the most important of these seems to be the idea that they are all alike and all intended for the same purpose; this idea has been fostered by four or five generations of antiquaries and travellers, who, whenever a fresh circle has come to light in any part of the world, have dwelt on its resemblances to others and ignored its differences from them. As we have seen, even in eight square miles in Ireland, there are three or four quite different types of circles, and I must remind you that these differ not only from each other, but from circles in England and Wales, and also from those in Scotland, some of which indeed differ from all others.

Since the circles vary so much in construction, it is surely not unreasonable to suppose that their objects may have varied also, yet Mr. Rice Holmes in his book on *Ancient Britain and the Invasion of Julius Caesar* (note on p. 211), complains that Mr. A. L. Lewis “seems to be satisfied with almost any kind of orientation; thus he tells us that of 21 circles which he observed in Southern Britain, 19 had a special reference to the north-east, that is to the midsummer sunrise, but he maintains that a line due east through the Stannon and Fernacre circles to Brown Willy, evidently was meant to indicate the equinoctial sunrise; and in another case he insists that the object pointed at was the pole-star.” In view of what I have been able to show in this paper, and of the fact that what I have stated now is

only a small addition to what I have shown here and elsewhere at intervals during many past years, I submit that it is not unreasonable to suppose that the sun did receive astronomical observation, or religious observance, or both, at various periods of the year in some of the circles, and that other circles, or even the same ones, may have been adapted and used for observation or observance of some star or stars. As to the pole-star, we know that it has been, and perhaps is still, regarded with veneration by some people, who even look upon it as the abode of their dead friends.

Another consequence of the great differences I have been pointing out is that it is not safe to conclude that, because some particular thing is not to be found in connection with some circle or circles, it does not exist in others, or that if or because it exists in some it should necessarily do so in all.

Mr. F. R. Coles supplies us with an instance of this kind of reasoning in the *Proceedings of the Society of Antiquaries of Scotland* (April 9, 1906, vol. xl) where, in describing a very small sepulchral circle in the island of Arran, he says, "It may be mentioned that the friends who assisted me in measuring this circle, were as keen as possible on the theories started by Mr. Lewis as to the relationship between the circle sites and any prominent hills; the opportunity of testing this was too good to lose, and I therefore noted that at a point south by compass, 64 feet distant, there stood a huge rough block of quartzitic conglomerate; if this same line were continued (also by compass) northwards we found it struck the summit of Goat Fell; again a line bisecting the centres of two stones of the circle strikes direct to Ben Nuish, a very fine peak about six miles distant; but surely the fact that these measurements and observations were by *compass*, and not by the true north, ought to invalidate them from any sort of confirmation of the theories suggested." It happened that I visited this little circle in 1899, and described it in my paper on the "Stone Circles of Scotland" read here in 1900; it is a purely sepulchral circle, only 21 feet in diameter, in which I should not expect to find any reference to sun or stars, and which in my paper I carefully differentiated from the great monuments of Brogar and Callernish where such references do exist, and I did not refer to Goat Fell, although I noticed its direction myself when I was there; since it is in a line with the outstanding stone it is indeed quite likely that the latter was purposely so placed as to be in that line; it is just seven radii of the circle from its centre, and excavations made by the side of it have not revealed remains of any kind. On the question of compass bearings Mr. Coles is in company with no less a person than Dr. Stukeley, who, in his own days, noticed the frequency with which the direction of the rude stone monuments coincided with the variation of the compass; the explanation of this, so far as points near the pole are concerned, has been given to us by Sir Norman Lockyer; it was not to the pole-star that such monuments referred, but to the rising or setting of some circumpolar star or constellation.

The evidence as to the sight lines from circles, formed by stones, other circles, and hills, is not my statement about them, but that of the ordnance maps, or of

some equally competent surveys, made by men who frequently do not agree with my interpretation of the facts; photographic evidence is also sometimes to be had, and I have in most cases verified the maps and plans by personal observation. The facts cannot indeed be disproved, but the conclusions to be drawn from them may of course vary. It is for each one to decide for himself whether they are all mere accidental coincidences, as some think, against, as it seems to me, very heavy odds, or whether they were intentional, and if they were intentional what was their object, for if they were intentional there must have been an object; and, if there were, I do not know of any but sun or star observance that has been or can be suggested.

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