

and beautifully-chipped leaf-shaped arrow-heads" have been found in one or two instances, and this type of arrow-head, which is unbarbed, is the only one yet discovered. In no case has any trace of metal been found with the primary interments. Fragments of a coarse black pottery are occasionally met with, and in one barrow, that of Norton Bavant, Dr. Thurnam was fortunate enough to discover a tolerably perfect vessel of extremely rude construction, and utterly devoid of the ornamentation usually found in the pottery from the round barrows. Thanks to the courtesy of the Society of Antiquaries, we are enabled to reproduce Dr. Thurnam's drawing of this vessel. We are likewise indebted to the same Society for the other figures which illustrate this paper.

Remains of oxen of the ancient small species, *Bos longifrons* or *Bos brachyceros*, are often found in long barrows not far from the human remains; antlers and bones of the red deer are still more frequent. Tusks and bones of swine have also been discovered. It would appear that oxen were slaughtered at the funeral feasts, and that the heads and feet (the bones of which parts are more frequently found), not being used for food, were buried in the barrow, perhaps as offerings to the gods or to the spirits of the dead.

Secondary interments in the upper portion of long barrows are not infrequent, and afford valuable evidence of the antiquity of these tumuli. Some of these interments are assigned without hesitation to the Anglo-Saxon period; others, again, undoubtedly belong to the Ancient Britons of the bronze age, being sometimes burials after cremation, sometimes interments of entire skeletons in the contracted posture characteristic of the round barrows. In the latter case the remains are frequently associated with pottery undoubtedly of the round-barrow period. In order to show the difference between this pottery found with secondary interments in long barrows, and part of the long-barrow period itself, we reproduce (Fig. 3) an elegantly ornamented drinking-cup found at Figheldean, and now in possession of Dr. Thurnam.

In the present article we have only touched upon some of the most interesting of Dr. Thurnam's researches. It still remains for us to notice the chambered long barrows, and the most important evidence of all, that derived from the skeletons disinterred in both chambered and unchambered barrows. We have been able from the archaeological evidence to gain some idea of the state of barbarism in which these primitive people lived; but still further information is to be obtained even on this point from the very bones of the people themselves; and from these sad relics alone can we obtain any ray of light as to the relation of these most ancient Britons to the population of more civilised times.

HOW LARGE SEEMS THE MOON?

IN a communication addressed to the Association Scientifique, M. Viguier remarks on the linear dimensions which ordinary observers employ to define the size of celestial objects. They seem to imagine that they are really pointing out the size of a meteor, for instance, when they state that it was a yard in diameter, or the like. Of course, such a statement is absolutely without meaning to the astronomer; while the seemingly less precise mode of speaking which compares the size of a meteor to that of the moon, is in reality much more valuable. It is true that when an observer says a meteor was as large as the moon, he makes a wider error than when he says it was a yard in diameter; but the astronomer knows what one statement means, whereas he can form no real estimate even of the meteor's apparent size from the other.

If every observer formed the same estimate of the linear dimensions of a celestial object, one might indeed interpret a statement of the linear dimensions of a meteor. But this is not the case. As M. Viguier justly remarks,

the short-sighted or the far-sighted person each forms his own estimate of the moon's real size, the position of the moon affects the judgment, nay, even the state of the weather influences our instinctive estimate.

But it is interesting to consider what is really implied by such a statement as that the moon is a foot in diameter. This is a size often assigned to the moon, I may remark, though many judge her to look larger. The moon subtends an angle of about half a degree, so that this estimate makes half a degree of the celestial sphere one foot in length. Thus the circumference becomes about 720 feet, and the radius about 115 feet. This, at any rate, is the distance which the estimate assigns to the moon. And this last view is the more correct, since the varying estimates made of the moon's dimensions according to her position, suffice to show that the mind instinctively assigns to the celestial vault a somewhat flattened figure, the part overhead seeming nearest to us. In fact, a common opinion that the moon's diameter looks about twice as large when she is on the horizon as when she is nearly overhead, would assign to the celestial dome the figure of a segment of a sphere, less than a fifth of the sphere's surface being above the horizon.

It is worth noticing, though M. Viguier does not consider the point, that we can conclude from the estimated size of the moon as compared with the intervals separating certain stars, that the mind intuitively assigns to the moon a distance considerably greater than that of the fixed stars. For example, I find that if, when the moon is below the horizon, an observer be asked whether the distance separating the three stars in Orion's belt (ζ from ϵ , or ϵ from δ , I mean) be greater or less than the moon's diameter, the answer is that it is about equal to that dimension. In reality, the moon's apparent diameter is but about one-third of the distance between these stars. It follows that the mind estimates the distance between the stars on a scale one-third only even of the small scale according to which it measures the moon; in other words, that it regards the distance of the fixed stars as about one-third that of the moon.

It may be, however, that the result of this comparison merely indicates that the mind assigns to the celestial sphere as seen on a moonless night a distance equal to only one-third of that which separates us from the faintly seen stars of a night on which the moon is full.

RICHD. A. PROCTOR

NOTES

WE are informed that her Majesty's Government has determined to issue a Royal Commission to inquire into the present state of Science in England. This step will be hailed with the liveliest satisfaction on all sides, and much good will certainly follow from such an inquiry, especially at a time when the arrangements for the prosecution of Science in this country are acknowledged on all hands not only to be "chaotic," but positively detrimental to the national interest. We learn that some of the commissioners have already been designated, but as their number is not yet complete, we withhold the names.

WE have been favoured with a copy of the report just issued by the Rivers Pollution Commissioners on the Mersey and Ribble basins. We hope to return to this subject shortly.

THE first Royal Society's Soirée of this Session will take place on Saturday evening next.

MR. E. RAY LANKESTER has been elected by examination to the Radcliffe Travelling Fellowship at Oxford.

WE have received the third part of Vol. I. of the Transactions of the Edinburgh Geological Society, containing the communications made to that body during its session 1868-1869. These are numerous, and testify to the activity of the members of the