

## III.

NOTES ON STONE ARROW-HEADS FROM SOUTH AMERICA, THE PROPERTY OF A. CRAIG-CHRISTIE, F.L.S. BY PROFESSOR DUNS, D.D., F.S.A. Scor.

When my friend Mr A. Craig-Christie recently showed me a collection of minerals and arrow-heads from South America, I thought the latter might be of some interest to the Society, chiefly from the point of view of ethnographic archæology. Materials of any sort illustrative of the social and industrial condition of so-called prehistoric man are ever of real value. The wider the area within which facts are gathered, the more reliable the comparative inferences.

The arrow-heads now exhibited were found in Indian graves, among sandhills near the sea, at Pena Blanca, between three and four hundred miles north of Valparaiso, Chile. The gentleman who gathered them says :—"Some that I have seen were most exquisitely formed of agate, rock crystal, &c. I am sorry I could not procure any fine specimens. Out of the graves are occasionally taken beads, gold ornaments, and a curious wooden image, evidently an idol, about 2 feet high. The [human] remains found in the graves are not of a large-sized race, but the frontal bones are good, and the brain cavity large." There are no Indians in this district now. The present population are Chilians, to whom these graves are those of a prehistoric people, and by whom the arrow-heads are regarded very much as like weapons are by us. Do the beads, the gold ornaments, and the wooden images point to a more recent layer of population than the makers of the arrow-heads, also prehistoric in the estimate of present Chilians?

In a small collection like this, the variety of minerals is comparatively great, and points to the presence of many crystalline and sub-crystalline rocks in the district. They consist mainly of hard, compact siliceous minerals, mostly quartz, varying in compactness, lustre, and colour as the proportions of alumina and iron oxide present vary—giving above twenty different kinds. There are eight specimens of common flint, four of

grey cherty flint, two of jasper, one of chalcedony, two of porphyrite, and two of highly indurated basalt.

In shape two are stemmed, two stemmed and barbed, two sub-barbed, one triangular, one sub-triangular—that is, instead of angles at the base, there are slight curves—three are chisel-end shaped, one is truncated leaf-shaped, and two truncated lozenge-shaped. The rest are straight at the base, tapering to a blunt point. In the centre of the base there is a neat curve, similar on both sides, which does not break the edge of the base line. This is the common type. The prettiest of the specimens exhibited is a stemmed form, on which much care has been bestowed. There is a javelin point of chert, and part of a javelin of considerable size, of a type common on the Continent, though not in this country. It is the same on both sides, with symmetrically serrated edges. While most of the specimens in this collection are, no doubt, arrow-heads, others are no more than chips, or pieces broken off the original nucleus; some are spoiled flakes, and some may have been small scrapers of different sorts.