

The following Communications were read :—

I.

ON SOME BRAZILIAN WEAPONS AND OTHER ARTICLES. BY PROFESSOR DUNS, D.D., F.S.A. SCOT.

The weapons and other articles now shown to the Society seem to me of considerable interest, both because of the tribal elements which make up the present population of Brazil, and also because of their illustrative value in comparative ethnology. There is a large amount of material of this sort in the Society's Museum, which, while deserving of notice for its own sake, cannot fail to be helpful towards reliable inferences in regard to types of form in implements and weapons met with in Scotland. In archæology, as in natural history, specimens can never be so well known in a state of isolation as when set alongside of corresponding ones occurring in widely separated areas. To the happy phrase "the past in the present," we might add "the remote in the near at hand"—the one pointing to type, the other to geographical distribution of typical forms.

Humboldt estimated the extent of Brazil at 144,500 geographical square miles. The weapons to which the attention of the Society is now called were obtained in the provinces of Amazonas, 27,100 square miles, and Para, 22,500 square miles. Their rivers, the Amazon and La Plata, give an immense water-net, and afford in themselves and their tributaries a water-way into the interior. The inhabitants consist of the descendants of the Portuguese conquerors, immigrants from Europe and America, negroes introduced from Africa, and Red Indians estimated to number 500,000, who, by the inroads of the whites and the mixed families resulting from intermarriage with the blacks, have been driven into the interior, where they are met with on the banks of rivers, or in the wide plains, or, more frequently, in the dense virgin forests. Their comparative isolation, their indolence, and the tenacity with which they cling to old habits, give importance to their present customs, weapons, and industrial articles, and furnish the anthropologist with facts of

peculiar interest and value. Material in abundance for trustworthy generalisation in these points may already be found in the works of Ewbank, Kidder and Fletcher, Wallace, Bates, Keller, and H. H. Smith, especially when read in the light of the literature of travel in regions far separated from Brazil. This subject is very wide and might be very fully illustrated, but it can only be indicated here. The present notes are chiefly archæological and ethnological. The former relate to stone articles, the latter to arrows tipped with wood, bone, and iron, and also to some specimens of Indian pottery. The iron collar on the table is of some interest as an article once in common use but now fast disappearing, and which, not unlikely, will soon stand to recent Brazilian civilisation very much in the same relation as the Scottish iron-collar—the jugs—does to ours.

The stone specimens consist of two axe-heads, an arrow-head of pure quartz, a celt of nephrite, and an article the shape of a long pestle. The most massive of the axe-heads (1) is of yellowish quartz, containing comparatively large bits of a softer, but very compact, slate-like mineral taken up by the quartz in the process of infiltration. Its greatest length is $5\frac{1}{2}$ inches; greatest breadth, where the lateral bevel of the bevelled edge begins, $3\frac{2}{3}$ inches; breadth at top, $\frac{7}{8}$ of an inch; girth, a little above the bevel of the cutting edge, $8\frac{5}{8}$ inches, and about $\frac{1}{4}$ of an inch from the tip $3\frac{7}{8}$ inches. It is partially grooved on both sides, not at the edges; groove deepest at the middle.

The next specimen (2) is a green stone, with thickly disseminated crystals of augite. Length, $5\frac{2}{3}$ inches; breadth, where the lateral bevel begins $3\frac{2}{3}$, and at the tip $2\frac{1}{2}$ inches. Girth, a little above bevel of the cutting edge, $8\frac{2}{3}$, and at groove 7 inches. The groove lies on the whole of one side and on both edges, but the half of the other side is ungrooved. Looking at the grooving, not only of the implements before us but of many others I have examined, so great variety of modifications occur as almost to warrant the inference that the implement was made to suit the handle, not the latter for the former.

The celt, or, perhaps better, "the skinning knife," (3) is of nephrite. Length, $2\frac{2}{3}$ inches; breadth, at unbevelled sides of the bevelled edge $1\frac{1}{2}$ inch, at tip $\frac{7}{8}$ of inch; polished both on the sides and margins, but

not sufficiently to hide the inequalities of the surface ; thickness, $\frac{1}{3}$ th of inch.

The arrow-head (4) consists of pure, diaphanous quartz. Length, $2\frac{2}{3}$ inches ; spatulose and bevelled at broad end, where it is $\frac{2}{3}$ of an inch broad ; on each margin a series of sharp points. This is an exceedingly pretty form. Like the others now noticed, it was obtained from uncivilised Red Indians. I have referred to it as a weapon, but it is doubtful if it was ever used as such. Keller and others described the xerembita, or lip-ornament of the Cyaowá, as a cylinder of from 12 to 15 centimetres in length, made of the transparent yellow-green of the jataha tree, inserted in a bamboo tube, and that worn by the Tupi as made of quartz, and worn only by the chiefs and the priests. It is inserted in the perforated under lip ; not unlikely this specimen was used as a lip ornament. But that stone arrow-heads were once much used by these Indian tribes is certain. "The Corvados," says Keller, "fasten old knife blades at the end of the arrows they use for the tiger (jaguar—*Felis onca*), tapir, and wild hog shooting. Formerly they had flint points, quite identical with those found in the Pfahlbauten. Hundreds of these are sometimes discovered in the sites of former settlements."

The only other article in stone to be noticed is the pestle-like form (5) now shown. It is of compact felspar, or felstone ; length, 1 foot $3\frac{1}{2}$ inches ; at the round point it is $1\frac{1}{8}$ inches in diameter ; at the heavy end a blunt oval—major axis $2\frac{1}{8}$ inches, minor $1\frac{6}{8}$ inches. It seems, from the indentations on the small end, that this was the one used for pounding. The arrow type of weapon was, no doubt, a slender straight stick sharpened to a point, and when the tip came to differ from the shaft, the type was not changed, it was only modified—the differentiations being all on the side of efficiency, stone tips being better than wood, bone almost as readily fashioned as stone and less liable to break, and iron more effective than either. The survival of all the forms among the great tribe of uncivilised men, may have no other meaning than that they find an arrow of one material better fitted for a special purpose than one of a different material would be. Keller informs us that the Indians on the Amazon and Madeira rivers make their bows of the dark wood of the *paviuba* palm, and their arrows from the stems of the *ubá* reed.

In some of the ancient burial places axe-heads of diorite and other stone weapons are found alongside of arrows tipped, as at present, with bone and bamboo.

I have been warned to beware of abrading the skin when handling the arrows, as it is usual for their makers to touch the tip with the quick arrow poison—the woorare—prepared by the Indians from the juice of the bruised stems of several strychnos (chiefly *S. toxifera*), and dogbanes (*Apocynaceae*). The juice is boiled over a coal fire, mixed with tobacco liquor and Spanish pepper (*capsicum*), and thickened with the milk of some *Euphorbiaceae*. It is a dark-brown pitchy substance, and as a blood poison very deadly. Whence the knowledge of the noxious principles in these plants, and the skill in organic chemistry by which these Indians were enabled at first to prepare this poison? The question might be as aptly asked in regard to *mandioca*, the “Bread of Brazil”—farinha or cassava—obtained from the manioc plant (*Javipha manihet*), one of the *Euphorbiaceae*, by a process even more complex, in which the starch in the tubers is separated from a strong narcotic poison and utilised as bread. By a corresponding process, learned from the practice of the red man, the white man elaborates from the poison juice of the same tubers the well-known tapioca. The existence of such skill among tribes far remote from centres of civilisation, seems to indicate, with considerable emphasis, that the original state of the savage was not the savage state.

Of the arrows now noticed, five are tipped with wood of a different kind from that of the shaft, two are tipped with bone, and two with iron. Notices are of frequent occurrence in works in Brazilian travel of the use of stone arrow-heads at a comparatively recent period, if not even now, but I have not been able to get examples of head and shaft together. It is interesting to find within one area illustrations of most, if not of all, the materials in use for war arrows. I do not think, however, that the fact suggests chronological sequences of any sort, but simply that man can turn his environments to good account. Perhaps, in efforts to picture the resources of prehistoric tribes, too little account has been made of the varied purposes to which wood may have been turned, both for war implements and in industrial art. Looking at

these arrows, one is much struck with their neatness, and with the ingenuity employed in making them effective weapons. One of the Para wood-tipped forms consists of a slender but comparatively strong bamboo shaft, headed by about seven inches of hard wood tapering to a sharp point. This again is jammed into a piece of bamboo, more than twice the girth of the shaft, and about 14 inches long, shaped like a huge quill, and tied firmly to the hardwood tip. It must make a very ugly wound. The shaft is feathered by the primaries from the wings of the hornbill (*Buceros*). Two of the Amazonas specimens are mounted in a similar way, though they are in all respects much stronger. A Para specimen has the head piece of hardwood tapering to a fine point, near to which a bit of wood of a different kind, in form somewhat like a scalene triangle, is laid on the hard wood, the apex of the triangular piece reaching to near the point, the angle distal to the shaft being replaced by a process like a bird's claw. This forms the barb. One from Amazonas, smaller than these just mentioned, has a dangerous look about it, especially as it has been covered with the sharp arrow poison. Its shaft is of bamboo. Its long tip of hard wood tapers to a fine point, and by a simple process nine barbs have been formed a little below the tip. Weapons similar to those now described are also to be met with in Borneo and the Philippine Islands. Both of the bone-tipped specimens are from Para. The shafts are of pretty large reeds, topped, as in the wood specimens, with hardwood, in one case by a splice, in the other by being, fishing-rod like, fitted into the hollow reed, the top of the one piece and the bottom of the other being firmly tied to prevent splitting, while the string itself is so applied as to present a pretty wavy appearance. The bone tip of the one is comparatively broad, slightly bent in the middle, and with a spatulate point. The convex part lies on the straight wood, and is lashed to it so that its respective ends form point and barb. The tip of the other is affixed in the same way; both point and barb, however, are round instead of flat. The iron-tipped specimens have four-sided points and barbs. A good example of the bow in use among the Indians of Amazonas is shown along with the arrows.

It was a long time after the discovery of America that European

thinkers began to appreciate the value of the knowledge spread out before them. The old world had its history covering thousands of years, but here were immense numbers of men spread over a great continent, without written records, yet with aspects of industrial art and social life as varied and as well marked as those of Europe. And it is only at the present day that we are beginning to see the full significance of this. The immobility with which we have readily credited savage tribes, or tribes far remote and isolated from great centres of civilisation, is yearly having doubt cast on it by the literature of recent travel. Evidences are constantly turning up that there has been movement, though this has not been onward and upward. It has, on the contrary, been retrograde, as the fictile ware of so many tribes show. There are Red Indian antiques as well as Grecian. The contrast between the shape and ornamentation of the pottery of present Indian tribes, and that found in the graves of their ancestors is bold and striking. The advantage lies all with the olden times, both as to pattern and ornament, though the skill to utilise the only materials at hand is as well developed as before. The specimens on the table are good examples of modern Indian pottery. Judging them by touch and scratch, I was inclined at first to conclude they were of stone, but one of them, having been accidentally broken, presented a grain altogether unlike any mineral with which I am acquainted. The substance may be a preparation resembling that which was used by the Tennessee Indian tribes for the manufacture of pottery (Du Pratz, *Histoire de la Louisiane*, 1758. Dumont, *Memoires Historiques sur la Louisiane*, 1753). Having selected the best clay for the purpose, the Indian women pounded shells to a fine powder which they mixed with the clay by adding water and kneading it with feet or hands. H. H. Smith (*Brazil: the Amazons and the Coast*, p. 378) says of the South American Indian woman, with reference to the next step in the process:—"She forms long ropes of clay by rolling it on a board. The ropes are laid one over another from the edge of the circle (which forms the bottom) so as to build up the sides. At intervals the sides are shaped with calabash spoons, scraped with shells, and smoothed with a leathery fungus previously wetted. When the lower part is made it is set in the sun to harden, so that it will support the upper layers. Finally, the

edge is turned over and finished outside with a thin roll, marked with a jaguar's tooth. It is next baked over a hot fire of *jatahy* bark (*Hymenœa mirabilis*); the pot is then polished with a pebble, and varnished, while still hot, with *jatahy* resin." In some cases, instead of powdered shell, the clay is mixed with ash from the bark of a leguminose plant, the *caraiapé-tree*, prepared for the purpose by being beaten in a wooden mortar.

The Brazilian Imperial policy in connection with slavery took a beneficent turn in 1852, when the African slave trade was declared illegal. Since then the amelioration of the slaves' condition has been steadily kept in view, while facilities for enabling them to purchase their own freedom have been greatly increased. In 1856, when Ewbank published his book, *Life in Brazil*, the condition of the slave was still miserable in the extreme. At the whim of their owners they might be scourged, loaded with iron shackles, or made to wear the tin "mask," "the log and chain," or "the iron collar." "The mask is the reputed ordinary punishment and preventative of drunkenness. It hinders her or him from conveying liquor to the mouth, below which the metal is continued, and opposite to which there is no opening. . . . Except a projecting piece for the nose, the metal is simply bent cylinder-wise. Minute holes are punched to admit air to the nostrils, and similar ones in front of the eyes. A jointed strap (of metal) on each side goes round below the ears, and meets one that passes over the crown of the head. A staple unites and a padlock secures them" (*Ewbank*). Its use, however, is not confined to drunkards only. Field negro women and girls were often forced to wear it. "The log and chain" was wont to be the usual punishment for a slave who had absconded, and it is still to be met with, though not so frequently as it was a few years ago. The log is fastened by a strong heavy chain to the neck or leg of the runaway. He is forced to labour with it, laying the log on the ground when at work, and bearing it on his shoulders when he walks. "The iron collar" is of "inch round iron, with a hinge in the middle, made by bending the metal of its full size into loops, the open ends flattened and connected by a half-inch rivet." The upright bar of the specimen before us is a large floreate-like cross, ten inches in height, the transom being nine inches. Its weight is 4 lbs. 11 ozs. When the rivet is in

its place it will thus be nearly 5 lbs. This yoke must be peculiarly galling. It is borne by day and by night. I have laid on the table another article of some interest. In 1856 Ewbank said—"Every gang of coffee carriers has a leader, who commonly shakes a rattle, to the music of which his associates behind him chant." We now know that the negroes borrowed this from the Red Indians. It is an imitation of their sacred instrument the *Maracá*, which is sounded at their religious dances and incantations.

I have thought that these ethnological notes might be of some interest to the Society, when associated with the weapons and other articles now exhibited, especially as most of the forms correspond with those in use in our own and other countries at kindred stages of civilisation.