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1896.

ABORIGINAL ROCK PAINTINGS.

SCALE 4 FEET TO AN INCH.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

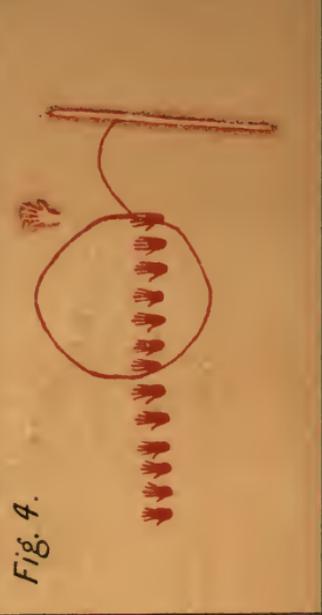


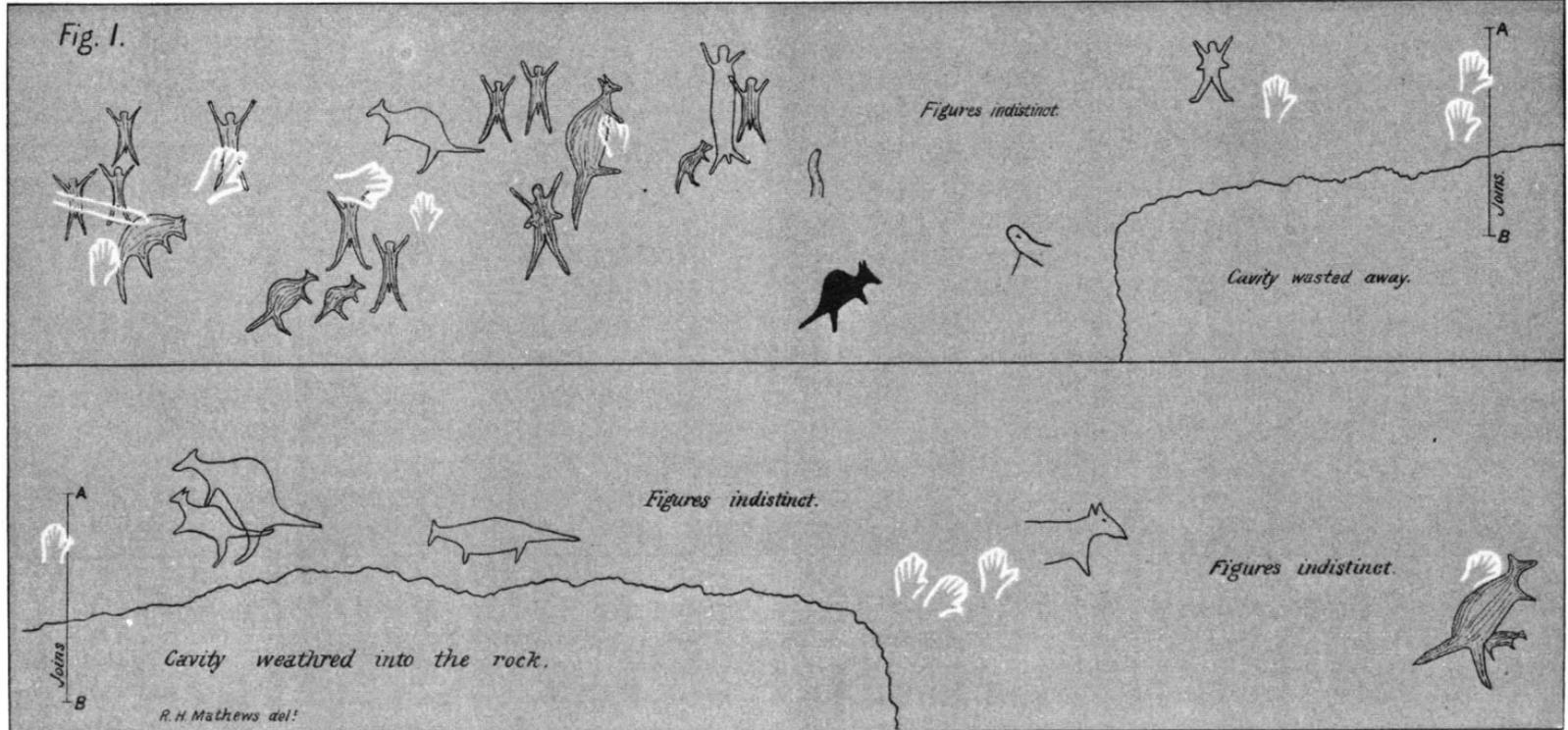
Fig. 5.

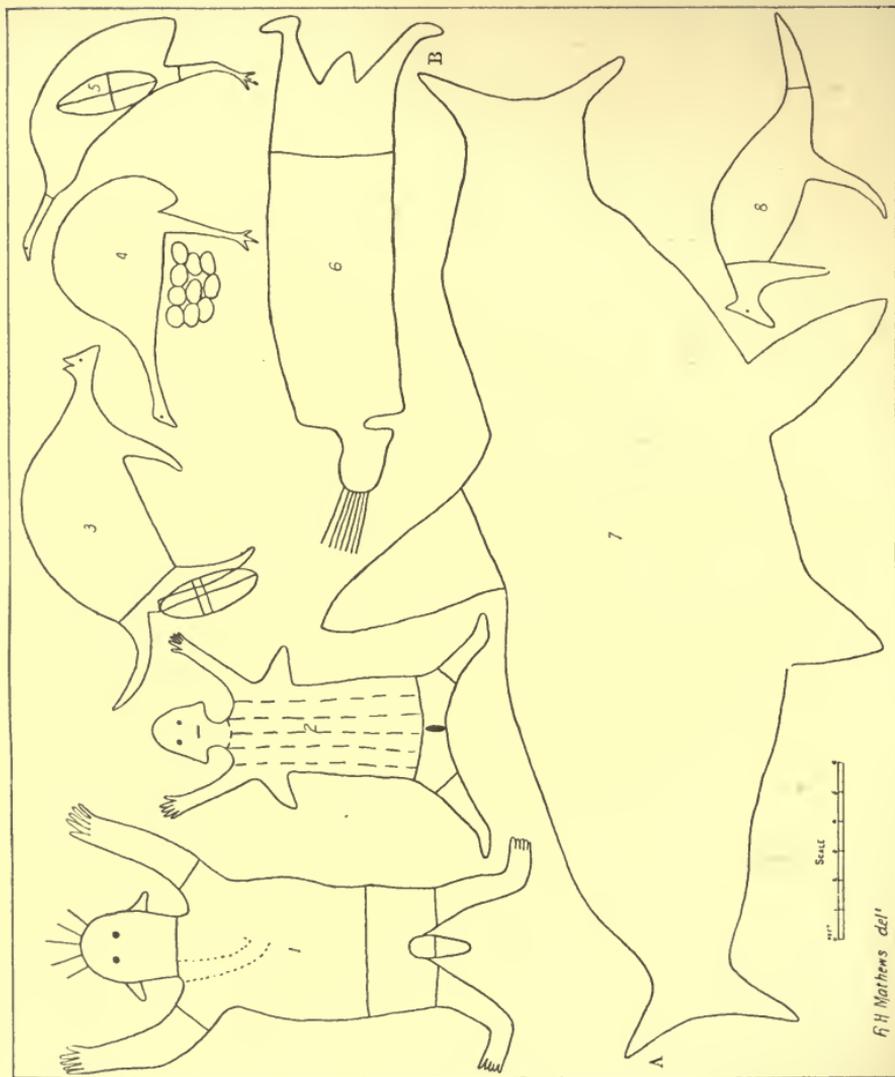


P. H. Mathews del.

ABORIGINAL ROCK PAINTINGS.

SCALE 4 FEET TO AN INCH.





ABORIGINAL ROCK CARVINGS.

they a warlike race, and they may after all only have been a nomadic people like the gipsies, who, indeed, might be able to claim a closer relation with the dark-skinned Indians than the fair Saxons. The survival of stone-cooking among the gipsies is also very suggestive. It is quite clear that the Hastings Midden and the Wildernesse Barrow are of the same age, and if we admit the identity of the implements with those from further south, we must also admit that they were used by men who had immigrated to Britain from India across Africa, Spain and Belgium at the dawn of the bronze age. Taken as a whole we have every reason to consider that these implements were made by a race who lived more by hunting than war, a conclusion which no future research will well vitiate. When we take this remarkable group of implements from India, through Egypt, south of Europe, the Valley of the Meuse, and England, and see such a similarity or, indeed, identity of such highly characteristic or specialised forms, are we not justified in regarding them as the work of a people migrating northward? But whether these were the fathers of the so-called Indo-European branch of the human family is another question, for if they were we should be able to answer the question, "Can the Ethiopian change his skin?" in the affirmative, a conclusion which I fear would not prove acceptable to many of our leading Continental and English anthropologists.

The ROCK PAINTINGS and CARVINGS of the AUSTRALIAN ABORIGINES. By R. H. MATHEWS, Licensed Surveyor.

[WITH PLATES XIV, XV, XVI.]

THE painted and carved rocks of Australia, the handiwork of the aboriginal inhabitants, are widely scattered over the continent, and it is matter of surprise that a subject of so much interest and value to anthropologists should have been so long neglected by scientific men, and others, competent to deal with them. It is greatly to be deplored that these drawings received so little attention from early settlers in the Australian colonies, who must have had numerous opportunities of observing them, and that no efforts were at that time made to record and preserve these specimens of pictorial art, showing the imitative and inventive faculties of a primitive people.

Being desirous of assisting in the discovery and preservation of these works of native art, I have been endeavouring, for some time, to copy and describe in detail as many of them as possible, and to fix their position on the public maps, in order

that they may be readily found by students of anthropology wishing to visit them. Thorough and systematic collection of data can alone give a reliable groundwork for the study of this subject ; and the work must be undertaken at once, while there is still opportunity, or it will prove either incomplete, or too late altogether.

In several of the carvings found by me upon rocks, only parts of the figures could with difficulty be traced out ; in others, the whole outline was faintly distinguishable ; whilst others were clear and well defined. The same remarks will apply to the paintings. In the numerous caves visited by me, some contained paintings which were quite distinct ; whilst in others the figures were in various stages of decay, some being barely discernible owing to the wasting of the rock under atmospheric influences ; and in some instances I was told by old residents that in caves which they once knew to contain paintings nothing is now visible. It is evident that these native drawings will become fainter and fewer as time rolls on, hence it is very desirable that those who have opportunities, and are willing to give us the results of their investigations, should be encouraged by all learned societies to copy these records of a people who are rapidly disappearing before the white race.

In the "Journal of the Royal Society of N.S. Wales," vol. xxvii, pp. 353-8, I described some "Rock Paintings by the Aborigines on Bulgar Creek, N.S. Wales," and in vol. xxix of that journal, now in the press, I dealt with the "Aboriginal Rock Carvings and Paintings in New South Wales," for which I was awarded the Society's Medal.¹ I also contributed a paper on the same subject to the Royal Society of Victoria, which appears in their "Proceedings," vol. vii (N.S.) pp. 143-156. Another paper, on "The Aboriginal Rock Pictures of Australia," was contributed by me to the Royal Geographical Society of Australasia, Queensland Branch, and is published in their "Proceedings," vol. x, pp. 46-70.

Since writing the papers referred to, I have continued my investigations, and have succeeded in finding several other groups of aboriginal drawings which I shall describe and illustrate in this paper. I hope it is only necessary to point out the value of these specimens of native art for scientific purposes, to awaken an interest in them among people who would otherwise pass them by without notice.

The rock pictures of the Australian aborigines must be classed under two distinct heads, *paintings* and *carvings*. In the former, the pictures are painted on the walls or roofs of rock-shelters in various colours ; in the latter, the drawings are

¹ "Journ. Roy. Soc. N.S. Wales," xxviii, pp. 329-330.

in the nature of outline engravings or carvings cut or ground into the surface of the rock. I will therefore deal with the subject under the two divisions indicated :—

Paintings, how produced.—Aboriginal rock paintings are executed in three different ways, which I shall call, for the purpose of my description, (1) the stencil method ; (2) the impression method ; and (3) the outline method, or ordinary drawing.

(1) In *stencilling* figures of the human hand, or other objects, on the walls or roofs of caves or rock-shelters, a smooth surface was selected, and slightly wetted or damped with water. The palm of the hand was then placed firmly on the rock, with the fingers and thumb spread out, and the required colour, in a dry state, blown over it out of the mouth. On removing the hand the space it occupied remained clean, whilst the surface of the rock surrounding its margin was tinted with the colour used by the operator, contrasting strongly with the uncoloured figure of the hand, and giving it the appearance of standing out in relief. In some cases, part of the arm, as far as the elbow, or farther, was also shown. For examples of stencilled hands see Plate XIV Fig. 1. For the white colours they used pipe-clay, and for the red, red oxide of iron, commonly called red ochre. Both Mr. E. Giles and Mr. Winnecke, in their accounts of their explorations in Central Australia in 1873 and 1879 respectively state that they saw hands stencilled upon rocks with powdered charcoal, which was applied in the same way as I have described. I have seen hands and other objects stencilled in white, red or yellow, but black colour does not appear to have been used for stencilling among the natives of the districts visited by me. Previously damping the rock causes the dry powder of whatever colour to firmly adhere to the surface, where it appears to have the durability of an ordinary pigment. This method of drawing was also adopted in many instances in representing implements of the chase, such as boomerangs, tomahawks, waddies, &c. In some of the stencilled paintings which have come under my notice, the colouring matter around the margin of the object had the appearance of having been applied to the rock in a wet or pasty state. I have reason to think that in many instances the colour was applied with some kind of mop or brush, or was blown in a moist state out of the mouth of the operator.

Although it is probable that in many stencilled pictures of hands, the hand was held in position on the rock, and the colour applied by the same operator, an inspection of Plate XIV will show conclusively that two or more persons must have participated in drawing some of the objects. For instance, the stick shown in Fig. 4 must have been held on the rock by one person, whilst another applied the colour. Boomerangs,

tomahawks, and sticks, some of the latter being about 4 feet long, would require at least two persons to join in the work.

(2) In the *impression* method, the colour to be used was mixed with water, or with bird or fish oil, in a native vessel of some kind, into which the palm of the hand was lightly dipped, and then pressed firmly against the surface of the rock, and on the removal of the hand, the coloured imprint of it was left clearly defined. I have never seen or heard of any figures except the hand having been executed in this method, and the only colours used in the caves which have come under my observation are red and white. R. B. Smyth, in his "Aborigines of Victoria," i, p. 291, states that he was informed by Mr. Brown that the natives of Western Australia made these impressions by blackening their hands, and then pressing them against the rock. The black colour would no doubt be obtained by mixing powdered charcoal or soot with oil or water. E. M. Curr, in his work "The Australian Race," vol. ii, p. 301, says, "To mark a clean surface with a dirty, greasy, or painted hand is a common practice of our blacks, and I have seen them do it in several places long distances apart." And again in vol. iii, p. 679, he says, "I have often myself seen the blacks imprint their hands, stained with red ochre, on suitable surfaces, and cannot accept such marks as a proof of antiquity." In the districts visited by me in collecting information on the subject of this paper, I have found impressed hands in comparatively few caves, the stencil method being that generally adopted; and in both these methods, it was the palm, and never the back of the hand, which was used. Correspondents have told me that impressed hands have been seen by them in the Kimberley district of West Australia, and also in the central parts of South Australia, but were not common. For examples in the impression method see the thirteen hands represented in Plate XIV, Fig. 4.

(3) Native pictures of men, animals, and other objects to which neither of the preceding methods would be applicable, were drawn in *outline* in the required colours. In some cases the objects depicted were merely outlined, in other instances they were shown in solid colour all over, whilst in others the space within the margin of the outlines was shaded by strokes of the same colour, or a different one. In these cases the colours were mixed with bird or fish oil, or the fat of some other animal; pipe-clay and red ochre being used for white and red respectively, and when a black colour was required, it was made from ground charcoal or soot, similarly mixed with grease. Mixing the colours with an oily or fatty substance caused them to *penetrate* the surface of the rock, and become very durable.

Judging by the appearance of the lines in several of the figures drawn in this method, I think it not unlikely that in some cases before commencing the drawing, the surface of the rock was damped with water, or slightly moistened with grease, and that then a piece of the required colour, as a lump of red ochre, or pipe-clay, or charcoal, was held in the hand of the operator, and the necessary lines drawn with it upon the rock.

Besides the colours mentioned, vegetable colours were also known to the aborigines. E. Stephens says, "The natives painted red bands on their shields by means of the juice of a small tuber which grew in abundance in the bush." "Journ. Roy. Soc. N.S.W.," xxiii, p. 487.

I have visited a very large number of caves containing native paintings, and only in a few of them have I found yellow colour employed, and then only for a few small figures—yellow clays not being plentiful.

Carvings, how produced.—Three methods appear to have been employed by the aborigines in producing rock-carvings. (1) That most generally adopted was to cut the outline of the required figure on the surface of the rock with some sharp pointed instrument. (2) In other instances the whole surface of the rock within the outline of the figure was cut away to the same depth as the exterior groove, as in the cases mentioned by Capt. Wickham at Depuch Island, quoted by me in this paper. (3) Another method was to trace on the rock the object to be drawn, and then to grind it out by repeated rubbing with a piece of hard stone or pebble along the outline which had been traced.

(1) In visiting groups of native carvings in different localities around Sydney and adjacent districts, I came upon some figures which had been partially carried out, and then abandoned, which disclosed the manner in which the work had been done. A number of holes were first made close together along the outline of the figure to be drawn, and these were afterwards connected by cutting out the intervening spaces, thus making a continuous groove of the required depth and width. In some of the best executed figures I found these grooves about $\frac{1}{2}$ -inch deep, and about $1\frac{1}{4}$ inch wide. In many of the inferior carvings the depth and width are much less. It is probable that the object was first outlined by drawing a piece of coloured stone or hard pebble along the outline to be cut out. Judging by the indentations made in the rock in cutting out the lines of these figures, I conclude that the natives had a hard stone or pebble chipped or ground to a point and used as a chisel. As soon as the outline of the figure was chiselled out to the requisite depth, I think a stone tomahawk as well as the

chisel was used in completing the work. I am led to this opinion, because the sides of the groove are cut more evenly than could have been done with such an instrument as the holes were punctured with; and there is no doubt the work could thus be done with greater expedition. In support of these conclusions I may state that close to Fig. 1, Plate XVI, I found a sandstone rock which had been used by the aborigines for grinding their stone tomahawks. I saw similar grinding places¹ on the rocks close to other drawings. The carvings of men and other objects are generally found on horizontal surfaces, but are not infrequently met with on the walls of rock occupying various slopes between the horizontal and the perpendicular position.

(2) In some of the Depuch Island carvings, described by Capt. Wickham in the "Journal of the Royal Geographical Society," xii, pp. 79-83, the whole surface of the rock within the figure was cut away, whilst others were only in outline. The depth of the cutting is not given in either instance, but it probably did not exceed about $\frac{1}{2}$ -inch, the object being merely to expose the unweathered surface of the rock. Capt. Wickham, who examined the carvings carefully and made drawings and descriptions of 92 of them in different places, appears to have found sufficient evidence to enable him to arrive at the conclusion that they were cut out "with sharp pointed pieces of the same stone." This is a point of great interest and value to the anthropologist, because it shows that the same, or at any rate an analogous, method of producing carvings was adopted by the natives of the western coast of West Australia, as that in vogue among the natives of the coast of New South Wales.

(3) In the Murchison district of Western Australia, Mr. E. Favenc informs me that he found outlines of the human foot, and other marks, scratched upon the surface of granite rocks. These outlines had apparently been worn into the surface of the stone by repeated rubbing with a hard pebble held in the hand of the operator. The drawings were not deep, but would probably last a long time, owing to the hardness and durability of the granite rocks on which they appeared.

Geographical Distribution.—These native drawings are so numerous and widespread, that it would be beyond the scope of a short paper like the present to make a compilation from the few scattered notes found in the works of various writers who have referred to them in different parts of Australia, but I think

¹ For full descriptions and drawings of similar native grinding places, see my paper on "Some Stone Implements used by the Aborigines of N.S. Wales," published in the "Journal of the Royal Society of N.S.W.," vol. xxviii, pp. 301-305, Plate XLIII, Fig. 3.

it is desirable to enumerate a few of the localities in each of the colonies in which they have been observed.

Rock paintings have been seen in West Australia on the Glenelg, Avon, and Upper Prince Regent's rivers, as well as in other localities. They are found throughout South Australia from the southern portion of it along the overland telegraph line to Port Darwin, and the Gulf of Carpentaria; they are also referred to by the explorers Gregory, Giles, Warburton, and others. These paintings are widely distributed over New South Wales, having been observed on the following rivers:—Shoalhaven, Woronora, Hawkesbury, Hunter, Cudgegong, Merriwa, Talbragar, Clarence and several others. In Queensland they are scattered from the most northern to the southern limits of the colony, having been found at Cape York, at Prince Charlotte's Bay, and on the following rivers amongst others:—the Leichhardt, Flinders, Mitchell, Cape, Herbert, and Dawson, and at various other places throughout the colony. In Victoria, paintings are found on the western side of the Victoria Range, County of Dundas, and on the north-eastern side of the Grampians, County of Borung.

Rock carvings are neither so numerous, nor have such a wide geographical range as the paintings, although they have been observed in all the colonies above named, with the exception of Victoria. I am instituting investigations in likely districts of Victoria, which will, it is hoped, result in the discovery of native carvings in that colony. In South Australia, rude outlines, representing footmarks of men, kangaroos and emus, and some simple devices, have been observed at a few places long distances apart. Some unintelligible scratchings have been seen on Pigeon Creek in Queensland; and in the same colony, a correspondent informs me that there are a number of carvings on sandstone rocks, near the head of the Batavia river, York Peninsula. At Depuch Island, on the coast of West Australia, Capt. Wickham states¹ that he found "vast numbers" of carvings representing men, animals and other objects cut into the hard rock. In the Sydney district, New South Wales, carvings are found in many different localities, some being very rough, whilst others are creditably drawn, considering the rude tools at the disposal of the untutored artists.

The rock paintings of Australia are almost everywhere of a somewhat similar character, with but little variation either in

¹ "Journ. Roy. Geog. Soc.," xii, pp. 79-83. These carvings have hitherto been erroneously referred to as "paintings." In Smyth's "Aborigines of Victoria," i, p. 292, he says, "On Depuch Island, Stokes discovered a large number of paintings." Rev. J. Mathew, "Journ. Anthropol. Inst.," xxiii, p. 42, says, "The paintings on Depuch Island are numerous."

the subjects treated or in the style of workmanship. The stencilled and impressed hands, the outlines of men and animals rudely drawn in various colours, appear to be universally distributed over the continent. On the Glenelg river, West Australia, Capt. Grey found some paintings¹ in 1838, a few of which, according to the plates given in his book, were highly coloured, and done in a superior style to native drawings found elsewhere. The majority of them were, however, "carelessly and badly executed." Mr. Joseph Bradshaw describes² some well-executed native paintings drawn in several colours, seen by him in 1891 on the Prince Regent river, about thirty-seven miles north-easterly from the place mentioned by Capt. Grey. It would be of immense service to the cause of anthropology if the Government of West Australia would endeavour to obtain authentic examples and full reports on the character of the drawings in the district mentioned. It would also be highly gratifying if this work were undertaken by private enterprise. The natives are still numerous in that part of the country, and would no doubt be able to render valuable assistance in collecting information in reference to these drawings.

Significance.—Although these rock drawings have been observed from the time of the earliest explorers, few men have been found competent to avail themselves of their opportunities to copy and describe them in detail, therefore very little work has yet been done in this part of the wide field of anthropological science, so that there is still a very large area of ground to be broken. Our present knowledge of these productions of native art is in a comparatively rudimental condition, and therefore it will be better not to attempt to suggest meanings to any of the groups of native drawings until a very much larger amount of information has been brought together than that contained in the scattered notes now at our disposal. This can only be done by collecting data from all parts of Australia. No individual Society could bear the expense of printing all the plates and descriptions necessary for this purpose, but all Societies which have for their object the diffusion of this kind of knowledge could assist by publishing descriptions and drawings which had not previously appeared in the Journals of other institutions.

The American Indians, in common with the prehistoric peoples of Europe, recorded important events by means of pictographs, some of which have been deciphered. When we know that drawings such as these by uncivilised nations of

¹ "Two Exped. N.W. and W. Australia," i, pp. 201-206, and Plates.

² "Trans. Roy. Geog. Soc. Aust., Vic. Beh." ix, pp. 90-103, and one Plate. See also "Journ. Anthropol. Inst.," xxiii, pp. 42-52, Plates IV, V, VI.

all times, in various parts of the world, have ultimately been found to be full of meaning, it is not unreasonable for us to expect that the strange figures painted and carved upon rocks all over Australia will some day be interpreted. Perhaps some of these pictures are ideographic expressions of events in the history of the tribe; certain groupings of figures may pourtray some well-known legend; many of the animals probably represent totems; and it is likely that a number of them were executed for pastime and amusement.

Probable Age.—In the early times of colonisation in Australia, very little attention was paid to the habits and customs of the aborigines, hence the information now available respecting these rock pictures is very limited. Another difficulty which besets the investigator is that the blacks died out rapidly under the influence of civilisation, and the few who survived lived chiefly among the white people, and abandoned most of their former customs.

I was fortunate enough, however, to find an old and respected resident of the Wollombi District of New South Wales, who had seen the stencilling done by the natives, and who was able to give me particulars as to the manner in which it was performed, and also the date.¹ This was in 1843 or 1844, and it is only reasonable to suppose that the practice was continued for several years after that time. Mr. Curr, the author of the valuable work on "The Australian Race," in his remarks previously quoted in this paper, bears testimony to having seen the blacks executing these hand pictures. This book was published in 1886, and I understand that Mr. Curr had been collecting information for it for about ten years previously.

As far as my researches have yet gone, I have not been able to find any one who has seen the rock carvings done, but there does not seem to be any reason for assigning to them a remote date of execution. In examining carvings upon the same rock I have observed a great difference in their apparent age, showing that the work had been executed at different times. Some are comparatively distinct, but many have almost entirely disappeared—a line here and there only pointing to their former existence.

The Hawkesbury Sandstone on which these pictures are drawn is not very durable, even under the most favourable circumstances. It will, however, last a considerable time if kept dry, but when located in damp situations it crumbles away rapidly. Some sandstones are much finer and harder than others, which would considerably add to the durability of both

¹ "Proc. Roy. Soc. Vic." vii (N.S.), p. 144.

paintings and carvings executed upon them, but none of them would remain for a very long period.

Drawings on the Ground, on Trees, &c.—Although the purpose of this paper is to deal with rock paintings and carvings, yet, as the widespread custom of drawing figures on the ground and on trees, as well as on the bodies and implements of the natives is so intimately connected with the subject I have in hand, I have deemed it desirable to make a short reference to that branch of aboriginal art.

In my paper on "The Bora, or Initiation Ceremonies of the Kamilaroi Tribe," published in the "Journal of the Anthropological Institute of Great Britain," vol. xxiv, pp. 411-427, Plate XXI, I have illustrated and described several kinds of aboriginal drawings on the ground. Some are drawn by first laying on the ground logs or bark forming the outline of the required figure, which was then covered over with loose earth. This way of building up the outline was only followed in very large figures; *loc. cit.*, p. 415, Plate XXI, Fig. 3. Other figures are composed entirely of the loose earth heaped up so as to resemble the horizontal image of the required object; *loc. cit.*, p. 416, Figs. 2 and 16. Another kind of drawing consists of figures of men, animals, and devices in various patterns, cut into the surface of the ground; a nick or groove from 2 to 3 inches wide, and about 2 inches deep, being cut into the turf along the outline of each. These grooves were cut with tomahawks, or flat pieces of wood on which an edge had been formed, *loc. cit.*, pp. 414-415, Figs. 5 to 8.

The specimens of native art found upon trees, representing men, animals, and other figures, are either chopped with the tomahawk, or are painted in red or white colours. In the former the object to be represented is outlined by a nick cut with a tomahawk into the bark or wood of the tree. For examples see the "Journal of the Anthropological Institute," vol. xxiv, p. 417, Plate XXI, Figs. 9 to 13, in which I have illustrated five trees marked by the aborigines. Mr. E. M. Curr, in his work "The Australian Race," ii, p. 301, states that he has "seen painted on a conspicuous tree, with red ochre or blood, the figure of a hand."

The ornamentation of the bodies of the natives is thus referred to by Mr. L. Schultze in describing the tjurunga festivals of the natives of the Finke river, South Australia: "The body is painted with fish-like figures. . . . Messengers are painted on the back with a sort of red disk formed of concentric rings, with four half-round disks, also consisting of concentric curves." "Trans. Roy. Soc. S. Aust.," xxiv, pp. 231 and 243.

Another kind of painting which may be briefly referred to, is

the native practice of stripping a sheet of bark, and ornamenting its inner side with various kinds of drawings in red ochre or pipe-clay, after which the bark was either hung on a tree, or laid with one end on the ground, and the other resting against a tree.

Images cut out of bark may also be mentioned. In my paper on the "Aboriginal Bora held at Gundabloui in 1894," published in the "Journal of the Royal Society of New South Wales," vol. xxviii, p. 113, I described two male figures cut out of bark, and fixed up against trees. In the same place I also described the figure of an iguana 3 feet long, a figure of the sun 2 feet in diameter, and one of the full moon 18 inches in diameter, all of which were cut out of bark and fastened to trees.—*Loc. cit.*, Plate III, Figs. 14 and 15.

I have in my possession a number of specimens of several kinds of aboriginal weapons made of wood, some of which are elaborately carved. Mr. Collins in his "Account of the English Colony of N.S. Wales," published in 1798, vol. i, p. 593, in speaking of the natives about Sydney, says "Most of their instruments are ornamented with rude carved work, effected with a piece of broken shell."

Conclusion.—In reference to the descriptions of the three Plates attached to this paper, it is hoped that they will be found sufficiently clear and full. All the figures are drawn to scale from careful sketches and measurements taken by myself. They have been copied with the greatest care, so as to faithfully represent the defects, as well as the merits, of the originals. The direction which each rock-shelter faces has been taken with a pocket compass, as this information may be found valuable for comparison, or for other purposes. The position of each cave and carving on the Government maps is stated in every instance, so that any person wishing to visit them can do so with great facility.

In Plate XVI, representing carvings, I have selected gigantic figures in all cases, so as to make a strong contrast with other carvings described by me in the Journals of the Royal Societies of New South Wales and of Victoria. These very large figures are, moreover, much rarer, and consequently more valuable than the smaller ones, and are found only in a few places.

It may be as well to state that photography is not practically applicable in the field for the purpose of copying these drawings from the rocks on which they are found. The native paintings are often found on greatly curved surfaces; some are on the roofs of caves, which are sometimes flat, and sometimes dome-shaped; others are partly on the roof, and partly on the cave wall; others again are in awkward positions 10 or 15 feet

from the ground. The foreshortening and other displacements due to perspective, in the circumstances indicated, would obviously be very great. Many of the paintings are so indistinct that they would not appear at all in a photograph, and the inability to reproduce them in the colours in which they are drawn upon the rock would be a serious objection. The surface of the ground at the front of these shelters frequently slopes away at a very steep grade, making it very difficult, and in some cases impossible, to set up a camera in a suitable position. The want of proper light in many instances would also be an insuperable obstacle.

The difficulties attending the taking of photographs of carvings on horizontal rocks are in many respects similar to those encountered in copying the paintings. It would, moreover, be necessary to erect a high stage above the flat rock, and then set the camera face downwards in the direction of the object to be photographed. Many of these rock carvings are of gigantic size, some of them exceeding 40 feet in length, and the outlines of many of them are barely distinguishable to a practised observer.

The camera is practically valueless in copying paintings or carvings except perhaps a few well-defined and favourably situated small objects. The mode of drawing from measurements, showing the position of every object in its proper colour, and drawn to scale, is the only way in which this work can be done to be of the greatest value for scientific purposes.

I have prepared this short paper on a subject which is one in which I have taken a deep interest, and if the labour and expense it has cost me has the effect of inducing others to carry on the investigation, and elicit further information respecting these rock paintings and carvings of the Australian race, I shall consider myself sufficiently rewarded.

DESCRIPTION OF PLATES XIV, XV, AND XVI.

Plate XIV.—Paintings.

Fig. 1.—The cave containing these paintings is situated in an escarpment of the Hawkesbury Sandstone, near the south-east corner of portion No. 15, of 23 acres, in the parish of Tupa, county of Hunter. Its length is 29 feet, depth from the entrance to the back wall 18 feet 6 inches, and the height varying from 6 feet to 10 feet, owing to the irregularity of the roof. The floor consists of earth and ashes, and the cave faces S. 30° W.

On the back wall are delineated fifty-seven hands, forty-five of them representing the left hand, and twelve the right, all executed in what I have described as the "stencil method," and

in white colour. About half a dozen of these show part of the arm nearly to the elbow. Intermingled with the hands are also two aboriginal stone tomahawks, stencilled in white colour on the wall, in a similar manner.

There are three drawings in white colour, which may have been intended to represent the sun. The largest of these has nineteen rays of unequal lengths, and irregularly arranged, the greatest diameter across the rays being 5 feet 6 inches. Another has twenty-four rays, more uniform in length and arrangement than the last described, and having its greatest diameter 5 feet 4 inches. The remaining one of these drawings has eighteen rays irregular in length and arrangement, like the first mentioned, having a right hand stencilled on the disc at its centre. The total length of the back wall occupied by these paintings is 29 feet, and every object is shown in its correct relative position on the plate.

The smoke stains on the roof, and the ashes present in the soil on the floor, bear evidence to the cave having in former times been used as a camping place by the aborigines. It is distant about a quarter of a mile easterly from Putty Creek, in which there is permanent water.

Fig. 2.—The paintings here shown are found in a small cave in a sandstone rock within portion No. 44 of 40 acres, in the parish of Auburn, county of Northumberland. Its length is 12 feet, depth 7 feet, height 5 feet 6 inches, and it faces N. 15° E.

The principal painting in this cave is similar to the three drawings in Fig. 1 last described, and has fourteen rays fairly regular in arrangement, with the horizontal rays a little longer than the vertical ones. A small ledge projects just below the centre of the figure, which gives it the appearance of rising out of the rock, which might seem to favour the conjecture that these figures were intended to represent the sun, and that the present picture shows that luminary in the act of rising or setting.

There are altogether twenty-one hands visible in this cave, some being on the back wall, and others on the roof; but I have only shown two of the most remarkable, representing a right and a left, perhaps belonging to the same individual. These are stencilled in such a manner that the junction of the two separate drawings is not discernible, and the wrists appear to join each other. Three of the other hands have the arm as far as the elbow depicted. All the paintings in this cave are in white colour. Before any of the drawings were made, it is evident that the roof and wall were blackened either by smoke or by some colouring matter being applied to it, because the space

within and around the stencilled hands is quite black, causing the white colour to show very conspicuously. There is permanent water in the Macdonald River, less than a quarter of a mile to the east of the cave.

Fig. 3.—This curious figure of a man is drawn in red on the back wall of a cave 33 feet long, 10 feet deep, and averaging about 6 feet high at the entrance. It is situated about 80 yards from the right bank of Cutta Muttan Creek, in which the water is permanent, and about a mile westerly from portion No. 63 of 40 acres in the parish of Lockyer, county of Northumberland. In native drawings of men I have frequently found the penis very much elongated, in some instances as long, or longer, than the legs. The triangular projections on each side of the head may be intended to represent the hair stretched outwards from the head. Compare with the head of the woman shown in Fig. 2, Plate XVI.

Fig. 4.—In order to give a specimen of the "impression method" of drawing, I have here reproduced part of Fig. 2, Plate VIII, from the "Proceedings of the Royal Society of Victoria," vol. vii (N.S.), illustrating a paper on "Aboriginal Rock Paintings and Carvings in N.S. Wales" which I contributed to that Society last year. I have been obliged to do this because impressed hands are not plentiful, and I have been unable to obtain original drawings for the present paper.

The plate shows thirteen impressed hands, one stencilled hand, and a waddy 4 feet long, also stencilled. A circular object, 3 feet by 2 feet 9 inches, with a line leading from it to the waddy, completes the paintings shown in this Fig., which are all done in red colour.

The cave in which these drawings appear is 28 feet long 18 feet high, 11 feet from front to back, and faces the north-east. It is on the end of a rocky point reaching into a sharp bend in Cox's Creek, in which water is permanent, and is about 2 chains from the eastern boundary of portion No. 65, of 40 acres, in the parish of Coolcalwin, county of Phillip.

Fig. 5.—The cave containing this drawing of the upper part of a man is 26 feet long, 10 feet high, and 13 feet deep. It is situated within portion No. 40, of 40 acres, parish of Lockyer, county of Northumberland, and faces N. 20° E.

This drawing shows a man as far as the waist. The eyes and mouth are delineated, but not the nose. The whole of the figure is drawn in red colour, with the exception of the mouth, which is in white. A ledge of the rock projects outwards a few inches from the cave wall at the man's waist, at which the drawing terminates, giving him the appearance of coming up out of the rock. In a few other instances I have found that the

natives have delineated iguanas, snakes, men, and other objects, coming up from, or disappearing behind, a ledge in this way. Cf. Fig. 2, Plate XIV.

For this Fig., and also for Fig. 3 of this Plate, I am indebted to Mr. W. J. Enright, B.A., of West Maitland, who takes a great interest in this subject. In both caves there are several other drawings besides those I have shown in this paper.

Plate XV.—Paintings (continued).

Fig. 6.—This large cave is 92 feet long, 27 feet deep from the front inwards, the height in front being about 15 feet, gradually decreasing inwards to the back wall, where it is from 6 feet to 9 feet, owing to the inequalities of the floor. It faces the north, and looks out on a rocky gully about 5 chains northerly from it, in which there is plenty of good permanent water. The roof is stained with smoke, and the shelter appears to have been used formerly as a camping place by the aborigines for many generations. The floor consists in places of soil, and in others of sandstone rock, both being covered with a thick layer of sand formed by the disintegration of the rock forming the walls and roof.

This cave or rock shelter is situated at the base of a precipitous escarpment of Hawkesbury Sandstone, on the southern side of a gully which runs easterly into Broosalum Creek, a tributary of Cowan Creek. It is about half a mile to the east of the road from Pymble to Cowan, and about three-quarters of a mile southerly from Jacomb Trigonometrical Station, parish of Gordon, county of Cumberland.

The drawings in this cave are both numerous and interesting, and are scattered over 57 lineal feet of the back wall. The Plate shows every object in its correct relative position, and in its proper size, exactly as it appears upon the rock. The great length of wall over which the drawings extend, made it necessary for me to divide the Plate into two sections, one commencing where the other leaves off—a line A B being drawn on each to show the connecting point.

To the left of the spectator on entering the cave are nine figures of men, one woman, and five kangaroos or wallabies, of different sizes, all outlined in black and shaded within the outlines, in the same colour. Intermingled with these are the figure of a man with an abnormally long body and short legs and a kangaroo, drawn in outline only. Farther to the right is a kangaroo drawn in solid black colour, and farther on is the figure of a woman in black outline. Looking at the left hand side of the lower section of the plate, we see two kangaroos running—apparently a mother and her young one—outlined in black; and farther on is an animal which is rather hard to

identify, but which may have been intended for an opossum or a native cat. Still farther to the right is part of the figure of a kangaroo, the remainder having disappeared owing to the natural decay of the rock surface. The last group in the cave is one of unusual interest, depicting a female kangaroo with a young one just in the act of jumping out of her pouch.

Returning again to the upper left hand corner of the Plate, there is delineated what appears to be part of a native weapon, done in white stencil, and executed subsequently to the black figures across which it is drawn. Scattered at intervals along the entire length of the cave are twelve hands stencilled in white, only one of which represents the right hand. There are also two unfinished figures near the black kangaroo. This completes all the drawings delineated on the Plate.

A large mass of the cave wall, about 24 feet long by 4 feet wide, has weathered away, forming a large cavity in the rock, no doubt carrying with it numerous paintings of different objects. Besides this there are several places, which I have marked on the Plate, where many figures have almost entirely disappeared, owing to the disintegration of the rock.

Plate XVI.—Carvings.

Fig. 1.—This gigantic figure of a man¹ is carved on a flat rock of Hawkesbury Sandstone on the top of a spur about half a mile north-westerly from Cooper Trigonometrical Station, parish of Frederick, county of Cumberland. The height from the left heel to the top of the head is 15 feet 2 inches, and the width across the body 4 feet 6 inches. There is a belt round the waist, a necklace, and bands round the arms and thighs. Four ray-like lines, the longest of which is 13 inches, rise from the top of the head, which may be intended for ornaments stuck in the hair. The eyes are shown, but the mouth and nose were either not drawn, or have disappeared by the weathering of the rock. The pendulous projections on each side of the head may represent the termination of the hair, or may be intended either for the ears or for ornaments attached to them. The mass of rock on which this figure is found is about half an acre in extent, and has a gentle dip towards the east. There are some dotted lines on the body, most of which, owing to the wasting of the rock, are too indistinct to copy. I have, however, been able to show two of the plainest of them.

Fig. 2.—This representation of a woman is 11 feet 3 inches from the top of the head to a point on a level with the feet; but if the legs were not so much spread out, the height would

¹ Among the carvings described by Capt. Wickham on Depuch Island were several human figures. "Journ. Roy. Geog. Soc.," xii, p. 82.

be about 11 feet 9 inches, or 12 feet. This is very much the largest figure of a woman yet observed by me among native carvings. The width of the body at the belt is 3 feet 7 inches, and from tip to tip of the mammæ measures 5 feet 6 inches. There are bands around the thighs, and a necklace, similar to those in Fig. 1. The eyes and mouth are shown, and the projections on each side of the head are probably intended to represent the hair. Extending from the belt upwards towards the head are five broken or dotted lines reaching to the shoulders. This very interesting figure is carved on a flat rock about two acres in extent, and sloping gently towards the south-east, in the parish of Spencer, county of Northumberland. This rock is on an old bridle track from Mangrove Creek to the Hawkesbury River, and is on the top of the range dividing the waters of the streams mentioned.

Fig. 3.—This large carving of a male kangaroo¹ is found on the same flat rock as Fig. 2, and measures 12 feet 4 inches from the tip of the nose to the end of the tail—the width of the body at the widest part being 3 feet 11 inches. Two ears and an eye are shown, and there is a band around the hinder part of the body. Partly covering the animal's hind leg is a shield² 3 feet 5 inches long, and 1 foot 3 inches across the middle, with one longitudinal and two transverse bars cut upon it. This may refer to some tribal legend about the shield, or the latter may have been drawn there merely on account of the suitability of the surface for the purpose.

Fig. 4.—This figure is carved on the same large flat rock as Fig. 1, and is intended to represent an emu sitting on its nest containing ten eggs.³ The native artist does not appear to have been able to overcome the difficulty of showing the leg bent under the bird in the usual sitting posture, and has therefore drawn it straight, which gives the bird the appearance of lying on its side, with its leg stretched out. From the point of the bill to the farthest part of the croup measures 8 feet 6 inches, and the average size of the eggs is nearly 8 inches long, by 6 inches through. In my paper on "Australian Rock Pictures" published in "The American Anthropologist" (Washington, 1895), vol. viii, pp. 268–278, Plate II, Fig. 1, I have illustrated a group of six emus, all close to each other,

¹ The figure of the kangaroo was also observed by Capt. Wickham among the carvings on Depuch Island, on the western coast of West Australia. *Loc. cit.*, p. 82.

² Captain Wickham mentions a shield among the carvings seen by him on Depuch Island. *Loc. cit.*, p. 82.

³ Capt. Wickham, in his description of one of the carvings on Depuch Island, says: "it is probably meant to represent the eggs of the emu as laid in the nest." *Loc. cit.*, p. 82.

carved on the same large rock. In Figs. 2 and 3, Plate I, of that paper I have also shown two emus painted on the walls of rock shelters, one of the emus being apparently sitting on the nest.

Fig. 5.—This is another carving of an emu¹ measuring 9 feet 6 inches from the point of the bill to the tail. It is situated on a southern continuation of the same large rock as that on which Figs. 1 and 4 appear. There is a band around the leg, another around the neck, and an eye is shown. The leg is slightly bent at the joint, and is not straight like the leg of Fig. 4. Within the outline of the emu is the representation of a shield 3 feet 6 inches long and 1 foot 3 inches wide, with a longitudinal and a transverse bar. My remarks in regard to the presence of a shield in Fig. 3 may be read in connection with this one.²

Fig. 6.—This grotesque carving, which appears to be an unfinished figure of a man, is found on the same large mass of rock as Figs. 2 and 3. From the top of the head to the left heel measures 16 feet, and the width across the body at the belt is 4 feet 2 inches. Only one side of the head is completed delineating the hair as in Fig. 2; and from the top of the head project seven lines, each about 2 feet in length, resembling those seen in Fig. 1. I very carefully examined the rock, under favourable conditions, and am of opinion that no other lines except those shown ever existed.

I know of another somewhat similar carving, about the same size, in another locality, which I intend shortly to visit, and take full particulars, after which I hope to be able to make some interesting remarks in regard to both drawings.

Fig. 7.—The large fish here represented is carved on a flat rock of Hawkesbury Sandstone, sloping slightly towards the east, and is about half a mile in a south-westerly direction from Jones Trigonometrical Station, parish of Manly Cove, county of Cumberland. It is rather difficult to determine which end of this fish is intended for the head, but I am inclined to think it is at the end B, and that it was possibly drawn to denote a very large shark, with its mouth open; or, perhaps this carving may delineate some marine monster of the artist's imagination. The total length of the fish from A to B is 33

¹ The emu is mentioned by Capt. Wickham as having been seen by him among the Depuch Island carvings. *Loc. cit.*, p. 83.

² Figs. 1, 4 and 5 of this Plate have been described in a paper on "The Aboriginal Rock Pictures of Australia" contributed by me to the Royal Geographical Society of Australasia, Queensland Branch, and published in their "Proceedings," vol. x, pp. 66-70, and are therein shown as Figs. 1, 13 and 3 respectively, of Plate III.

feet 10 inches, and the diagonal measurement from tip to tip of the two longest fins is 21 feet 9 inches.

Fig. 8.—This representation of a female kangaroo is carved on the same flat rock which contains Figs. 1, 4 and 5. There is a band around the shoulders, and also around the tail. One ear and an eye are delineated, and the measurement from the tip of the nose to the end of the tail is 10 feet 7 inches. The animal is represented in the act of jumping, and is very well proportioned.

JUNE 11th, 1895.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The presents that had been received were announced and thanks voted to the respective donors.

DR. HEGER of Vienna was introduced to the Meeting by the President.

A lecture on the "Ethnography of British New Guinea, illustrated with the optical lantern," was delivered by Prof. A. C. HADDON.

Prof. HADDON commenced by stating that the ethnography of our largest tropical insular protectorate is still largely unknown, although thanks to the labours of the wise and energetic administrator, Sir Wm. MacGregor, and of the intrepid missionary, the Rev. James Chalmers, much information has recently come to hand. The object of the lecturer was to bring visually before his audience some of the ethnographical data which are now available for study. The people fall into two distinct groups, the true Papuan of the Fly River and Papuan Gulf districts and of the mountain ranges. These are a uniformly dark, frizzly-haired people, with elongated skulls, most of whom scarify their skin. Sometimes numerous families live in immense houses, and there appears to be a good deal of club-life among the men. Very characteristic are the sacred or club-houses, often called temples, as is also the occurrence of sacred ceremonies at the initiation of lads into manhood; masks are worn at these functions and the bull-roarer is swung and shown to the youths. The stone club is used all over British New Guinea, but the bow and arrow is confined to the Fly River and Papuan Gulf districts. The