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NOTES ON THE PICTOGRAPHS AND PETROGLYPHS OF WESTERN AUSTRALIA AND A DISCUSSION OF THEIR AFFINITIES WITH APPEARANCES ELSEWHERE ON THE CONTINENT*

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INTRODUCTION

The purpose of this paper is to place on record a number of heretofore unreported petroglyphic and pictographic sites in Western Australia and to introduce some of the problems concerning them. The evidence, gathered in 1938-1939, pertains primarily to the poorly known southern, western, and northwestern portions of the state where aboriginal culture has almost completely disappeared, and permits the data for the remainder of Australia to be viewed in continental perspective.

Petroglyphs and pictographs are widely distributed in Australia. Both are reported in all the states except Tasmania, where only the former have been found, and Victoria, where only the latter have been discovered. A general summary of the appearances was published by the author in 1936, at which time about two hundred locations were listed, some comprising two or more exhibits. Little information was then available for the western third of the continent, the almost one million square miles of Western Australia. For this tremendous region there were reports of only five petroglyphic sites, widely separated, and of only six pictographic displays outside the Kimberley district. In the latter the highly stylized portrayals of wondjinas, the mythologically important anthropomorphic but mouthless beings associated with the control of rain, first described by Grey in 1938; and the peculiar exhibits of human beings reported and sketched by Bradshaw in 1892 (Davidson 1936: 124-134), already had attracted considerable interest, although little attention had been given to the less spectacular motifs generally similar to those in other regions.

* This paper is a partial result of field studies in Western Australia in 1938-1939 under the auspices of the University of Pennsylvania, the American Philosophical Society (Penrose Fund), and the Carnegie Corporation of New York. Some of the illustrations were prepared under a grant from the Faculty Research Committee of the University of Washington.

The widely separated appearances of both types of art in Western Australia suggested that other sites should be present; hence, in 1938-1939 these subjects were included in general ethnographic inquiries among remnant groups of aborigines, and in the questioning of old white settlers. As a result evidence was collected on about seventy new sites almost equally divided between petroglyphs and pictographs (maps 1 and 2). There also were hearsay reports of many others, specific locations unknown. Although additional sites also have been found in recent years in other parts of Australia, the limited data now at hand already indicate that Western Australia contains an important share of the continental total.

As shown in map 1 the distributional situation is of interest. Even without knowledge of the many rumored but unlocated sites in the south, west, and northwest, it already is clear that pictographs are scattered across the state from the inland southwest and central western coast to the Kimberley district via the Canning Route, and to Central Australia via the eastern desert country, and that petroglyphs on the other hand are concentrated in the Northwest, scattered along the Canning Route toward the Northern Territory, and seem to be very rare south of the Murchison River. The single carving of a face at the Glenelg River, north Kimberley district, sketched with doubtful accuracy by Grey in 1838, seems quite isolated from other petroglyphs as presently known.

Information is lacking for a large region in the eastern part of the state but since the appearances to the northeast and southwest and to the northwest and southeast respectively are essentially similar, some of the features in the intermediate region can be anticipated.

NEGATIVE AREA IN THE SOUTHWEST

Although there are many parts of the state for which neither pictographs nor petroglyphs have been reported as yet, the only large area for which

TYPES OF SITES AND EROSION INFLUENCES

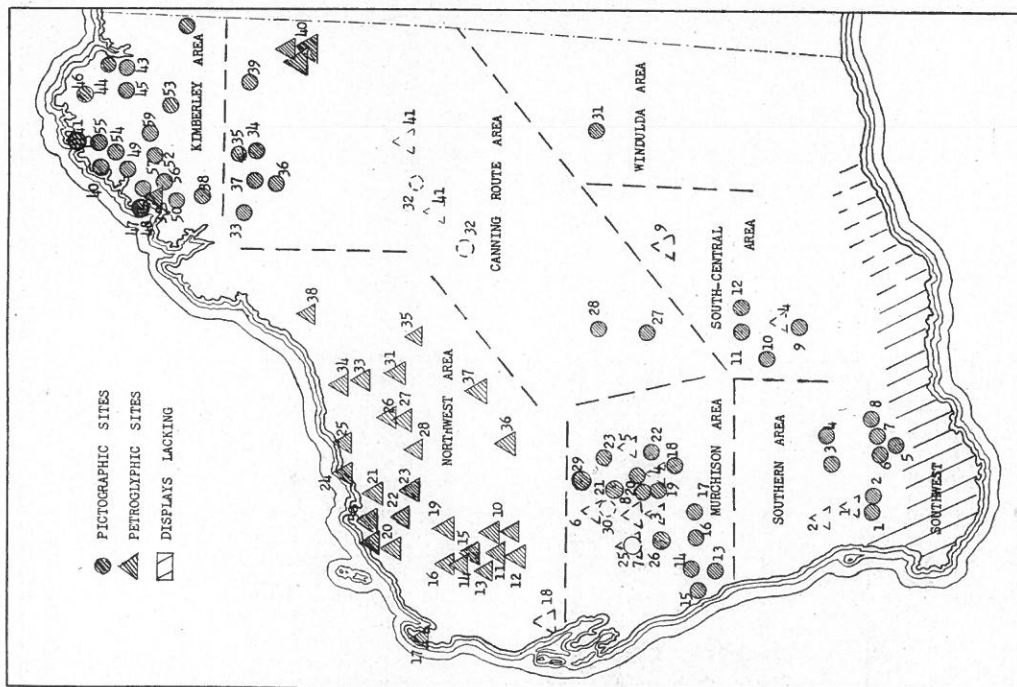
Most of the sites in the southern and western districts were visited, but time and circumstances, and the advent of war, did not permit extended side trips to many of the northern locations. Several sites in the south and west were not located. In some cases old informants had not seen them for decades and the exact locations had been forgotten. Indeed, some sites were difficult to locate

both were specifically denied by several persons is the extreme southwest—the coastal districts around Busselton, Margaret River, Augusta, Warrup, and Esperance, and the adjacent localities inland. In addition, there are no rumors of sites along the coast south of the Greenough River, a poorly known region. Denials sometimes mean only that positive evidence has not yet come to light, but the southwestern region not only is very well known, but the negative aspects are supported by an explanation given by old southwestern aborigines at Gnowangerup who stated that the power to make such portrayals is possessed only by *diberi*, mythical "travelers" who live far to the north. These beings roam about at night applying their arts, but for some unknown reason have never visited the extreme south. Their potency is not limited to artistry for they have the ability to make boats and aeroplanes to assist them in their travels.

The negative area may extend for some distance east of Esperance. At least Helms (1896: 260), who explored westward from South Australia along a route parallel to the coast and not far inland, did not find any sites west of the South Australian border. Since his observations were limited, further investigations should be made before it is concluded that Windulla (● 31) is the southernmost site in this region. Several sites have since been found in the Murchison district, parts of which also were traversed by Helms.

EARTH DRAWINGS

Unusual pictographs (grooves?) are the earth drawings at Broilga Lagoon, upper Forrest River, Kimberley district, reported by Conigrave (1938: 74, 83). Over ten acres of ground are said to have been cleared by pulling out grass by the roots, burning, and sweeping away the ashes. The surface, hardened by patting and stamping, was decorated with outline drawings of crocodiles, snakes, large horseshoe-shaped figures, and other designs. Colors (?) are not indicated. In Conigrave's opinion some figures had no meaning but others were of "phallic" significance, although he does not discuss the evidence for his interpretations. Earth paintings with different features are prominent in Central Australia. Whether the concepts of portrayal on open ground in the two areas are related, with local differences in techniques and motifs, is a question which must await ethnological inquiries in the intermediate areas. It seems clear that these exhibits will not leave traces for the archaeologist.



MAP 1. Distribution of pictographic and petroglyphic sites in Western Australia, as known in 1939. Open symbols represent sites of uncertain location or identification.

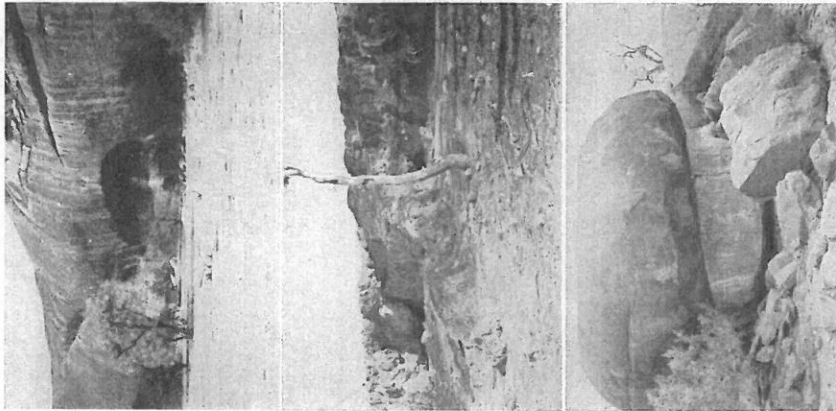


FIG. 1. Types of pictographic sites. Upper: Walga Rock (● 21). Middle: Appertara (● 14). Lower: Dalgarungup (● 19).

even when the general directions were accurate. Since the favorite places for pictographs are the walls and ceilings of shelters in massive rocks and severely eroded breakaways or gullies, or on the undersurfaces of clustered great boulders, it sometimes was necessary to scrutinize innumerable nooks and crannies before an obscure display was detected. Carvings are found more often on exposed surfaces, such as flat rocks or the outer slopes of outcrops, but also may be difficult to locate in rough country. Typical sites are illustrated in figures 1 and 2.

It is quite possible that some of the portrayals visible in earlier times have been obliterated. At Nannutharra some stenciled hands, said to have been faintly discernible a few years before, could not be detected, although others remained. Over the course of time direct or reflected sunlight, wind, dust, rain, and moisture undoubtedly take their toll. Presumably differences in quality of the pigments and in thickness of application account in part for the variation in the condition of the displays in individual sites and from site to site.

Petroglyphs are more durable but they too may

be worn away. Natural flaking of the rocky surfaces is noticeable at many places. It already has caused major damage to the exhibits at Yarrimuccan and Mount Edgar (figs. 3, 4), and in time may destroy them completely. It also seems likely that the carvings on the horizontal surface at Port Hedland are being slowly eroded by beating rains and blowing sand. Not only is the sand in the grooves abrasive in itself but it harbors from time to time the growing roots of grass and weeds which contribute their share to the damage. However, in spite of these destructive influences it would seem that most of the unlocated sites seen within the last fifty years or more continue to exist and with diligent search can be found.

In respect to the description of the portrayals it is of interest to note that informants usually were fairly accurate. Rock shelters where stenciled hands predominate were generally mentioned as showing hands, although the technique of application was not always recognized. Some exhibits with animal motifs were stated to be such, even though the details were not recalled. The main confusion centered around the fairly common use of the word "markings." Questioning sometimes

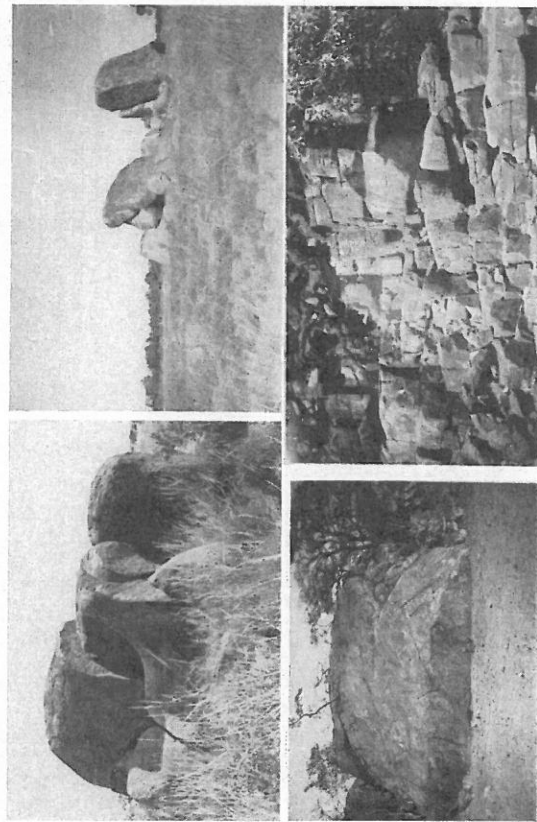


FIG. 2. Types of petroglyphic sites. *Upper left*: Mount Edgar (▲ 31). *Upper right*: Yarrimuccan (▲ 33). *Lower left*: Gifford Creek (▲ 10). *Lower right*: Coospoocy (▲ 30).

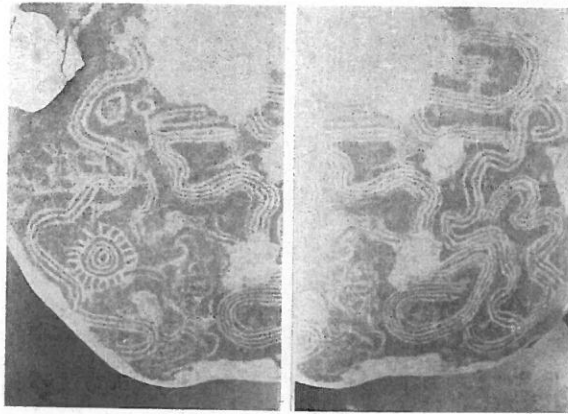


FIG. 3. Petroglyphs at Yarrimuccan (▲ 33). Scaling has destroyed much of the display. The carved lines are very shallow and merely expose the contrasting shades in the rock.

brought to mind the presence or lack of color, but some displays described as carvings were found to be pictographs, and vice versa. Such mistakes are understandable. Many observers had not been interested in technical details. Furthermore, some petroglyphs with surfaces slightly roughened by battering, unless examined closely, may appear to be weathered white paintings. For example, a photograph, taken in 1902, of the portrayals at Coospoocy, described as drawings, reveals the same technical features to be seen in photographs of known carvings (fig. 4). The type of exposed site at Coospoocy also suggests that the exhibits are petroglyphs. In addition, pictographs have not been confirmed within several hundred miles of this site, whereas carvings are numerous in the region.

The question of the identification of techniques assumes much importance. Several sites south of the Murchison River are alleged to contain simple carvings, but none as yet has been substantiated. Investigation of some established the presence of

pictographs. Others were not found. Some were not conveniently located for a visit. Available evidence thus suggests that if petroglyphs are present in this region they are neither numerous nor artistically complex.

"FOOTPRINTS" IN STONE

There is a fairly popular belief in Australia of the existence of human "footprints" in stone. Claims occur quite frequently on both sides of the continent. Some of the early reports have been discussed by Branco. Many of these rumors were heard in Western Australia, but since most were based on hearsay, and lacked reference to specific locations, investigation with the thought of finding petroglyphs was impossible. However, two informants professed to have seen such "footprints," one at an unspecified coastal site south of Carnarvon (▲ 18), where a series of steps was said to be discernible, the other at Bugadji creek or soak between Kurnalpie and Igidena (Laverton area) (▲ 4), where two "foot tracks" were claimed on the vertical face of the rock. The local aborigines were said to believe that the rock had been in a horizontal position when the depressions were made.

There is a published account of one claim for Western Australia. Campbell (1914 A) has discussed and illustrated what he considered to be an indurated cast of a "footprint" found before 1884 near Minnenooka in the Greenough River valley. The cast was said to consist of several layers of mud which revealed the folding of the skin and the muscles.

The only plausible explanation for the various claims is that they are based on cursory observation of rock carvings or freak erosions. The human foot has been a subject for portrayal in both stenciled and freehand rock paintings and outline and intaglio rock carvings in various parts of the continent and may be expected to appear in sites yet to be discovered. Of the three appearances noted the site near Carnarvon is the only one within a reasonable distance of known carvings. The other two are located in areas where simple petroglyphs have been claimed but not yet confirmed.

It seems likely that a large percentage of the claims of "footprints" is based on misinterpretation of natural erosion. The author has observed innumerable severely eroded outcrops where hundreds of oddly shaped depressions occur. Some resemble animal tracks. Some would hold a

human foot. Others would accommodate quite nicely a foot with a shoe on it.

PIGMENTS

The pigments in Western Australia are similar to those used elsewhere on the continent. Red, with occasional variant hues, is the prevailing

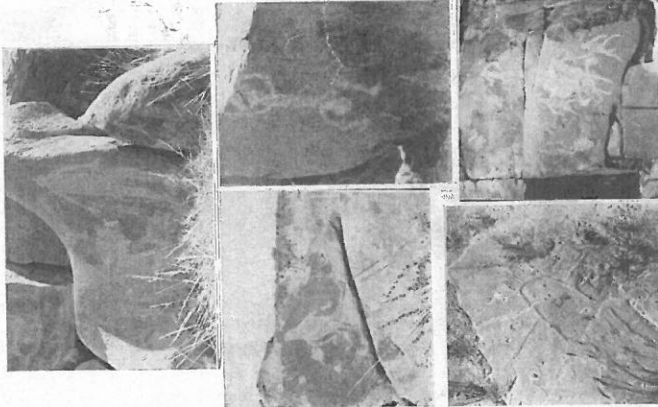


FIG. 4. Petroglyphs of anthropomorphic figures. *Upper:* Mount Edgar (▲31). The life-size figure is outstanding. Note projections at top and sides of head and the small figure under the right arm. The arm and leg of another large anthropomorph, almost destroyed, show on the rock in the lower right corner. A different type of human-like figure can be seen in part in the upper center. A third large figure in the lower left is almost obliterated. *Middle left:* Mount Edgar. A human figure with out-turned legs. *Middle right:* Mount Edgar. An anthropomorphic figure in a conventionalized pose. *Lower left:* Port Hedland (▲25). A grooved human figure with a pecked out foot. *Lower right:* Coopookey (▲30). Several small human figures with head decorations. (Photograph by W. E. Sanders, 1902.)

color, followed by white, yellow, and black in the order named. Blue is employed only in the northern Kimberley district.¹ Red and yellow are derived from pulverized ochres mixed with water or grease. White, obtained from crushed kaolin or pipe clay, is prepared in the same manner. Strangely enough black, from charcoal so easily obtained everywhere, is the rarest of the four. There seem to be few painting sites throughout the continent where it predominates, although there are many where it is employed. Red and yellow ochres and white pipe clay, on the other hand, must be laboriously extracted from natural deposits, crushed manually, and finally ground on stone mills, the original grinding stones consisting of a nether stone of variable size and shape and an upper stone held in the hand. In addition, these materials are available only at special places, often far distant, and must be secured either by expeditions sent to mine them, or by trade and barter arrangements with the hordes on whose properties they are found.

The sources of supply of these ingredients are imperfectly known. Pipe clay is common in the Murchison district and available in many southern, northwestern, and northeastern localities.² Aside from the Kimberley district, deposits of red and yellow ochres are not reported to be numerous in Western Australia.

The little evidence at hand indicates well developed proprietary interests in the natural sources of supply. Ownership of the tremendously valuable Wilgamia, which apparently provided most of the red ochre used in the western areas, was contested in 1939 by an old woman and a young boy. At Dalgarranger exploitation of the local pipe clay deposits was still reserved by the few local aborigines.³

¹ Blue, first reported by Grey in 1838, has only recently been confirmed as of aboriginal use. It is derived from glauconite and in solution dries a bluish-green. Elkin, 1948: 6.

² Pipe clay is found in extensive deposits in the Yalgoo area. One important site is in a breakaway, eight miles north of the town, one and one-half miles east of the main road. Six miles north of Dalgarranger homestead, one hundred yards from the rabbit-proof fence, is a site which is highly regarded by the aborigines.

³ Although kindly disposed toward their friends, most of whom except old people are employed by Europeans, the latter nevertheless were still required in 1939 to ask for the privilege of each visit. In that year a feeble old man, virtually blind, found his way on foot to this site, from which he had vested rights, a distance of thirty miles from his home, to gather a few cherished pounds. Lacking adequate provisions and water he collapsed on the return journey and would have died but for the timely

The method of extracting pipe clay is crude but effective. Simple, unprepared pieces of stone, or in recent times old pieces of iron, are employed to batter out irregular chunks. When a few pounds have been gathered they are carried away for subsequent pounding and grinding on stone mills.

WILGAMIA

The most important source of red ochre in Western Australia is Wilgamia in the Murchison district, forty miles from Cue. The derivation of the name is obvious for *wilgi*, red ochre, and *mya*, camp, place, are aboriginal words adopted by the whites and introduced by them into the lingua franca with which both aborigines and Europeans throughout the western regions are now familiar. Thus Wilgamia would be recognized generally as meaning "red ochre site" but it has now become identified with this particular location. Just which southern tribes, if any, knew this ochre mine as



FIG. 5. Panorama of the great red ochre mine at Wilgamia, near Cue, Western Australia. This tremendous excavation, hacked out by crude chunks of stone and by short sticks driven into cracks, is one of the most impressive attainments of any stone-age hunters. To the right of the persons in right frame in the deepest part of the view is a lower cut from which tunnels lead to the places where intermittent mining activities by the few surviving local aborigines still continued in 1939.

Wilgamia in aboriginal times is uncertain. The Bardimaya around Mullewa and Mingenew call it *Toaritha*; *táari*, pigment; *tha*, hole. The local aborigines disclaim the name Wilgamia as their own, although they now accept it along with other European terms such as Perth, Mount Magnet, or Geraldton. According to their testimony Wilgamia has been a local place name ever since European settlers entered the district. Their own name for the site is Nganakurakura; *ngána*, whose; *kúra*, eye or eyes. Unfortunately the significance of this peculiar term seems to have been forgotten. Informants could provide no explanation and all asserted that the place had always been known by just that name.⁴

Arrival of a white settler who happened along the track. The old man could have purchased pipe clay from friends but regarded his own source as superior.

⁴ Two miles southwest of Wilgamia is a hill known as Little Wilgie. Smaller in size and wealth of ochre it is

Wilgamia is indeed one of the most remarkable places in Australia. The site comprises a huge hill which rises high above the general surface of the rough and hilly surrounding country. From the summit on the north side a great open cut varying between fifty and one hundred feet in width and possibly sixty-five feet in depth has been laboriously excavated (figs. 5, 6). On the sides around the bottom are deeper chambers, while underneath them numerous tunnels follow the seams of red and yellow ochre, often for several yards. In some instances admission to these cramped working pockets must be gained by wriggling through such small openings that large individuals would find entrance impossible.

When one first sees Wilgamia doubts arise as to its association with the aborigines. The excavation is so stupendous that it is difficult to attribute such an accomplishment to a people with a simple technology. When it is realized that several thou-

sand tons of rock have been removed it is evident that tens of thousands of man-hours have been expended in the operations of hewing out the solid walls, carrying the debris up the steep northern side and dumping it down the outer slope. The wonder of such an achievement is further enhanced by the knowledge that the aborigines in the Murchison were not numerous, about one person nevertheless more important mythologically. Typical of the dramatizations associated with natural features of the terrain in much of the continent is the story of how a kangaroo, in mythical times, was speared about six miles south of Wilgamia. In his death agony he jumped and landed at Wilgamia where the red represents his blood, the yellow his liver, and the green his gall. His last leap brought him to Little Wilgie which marks his grave. According to the story Little Wilgie was discovered before Wilgamia, but since the myth is an explanation of the latter this assertion, like other details in mythology, should not be accepted as necessarily historically accurate.

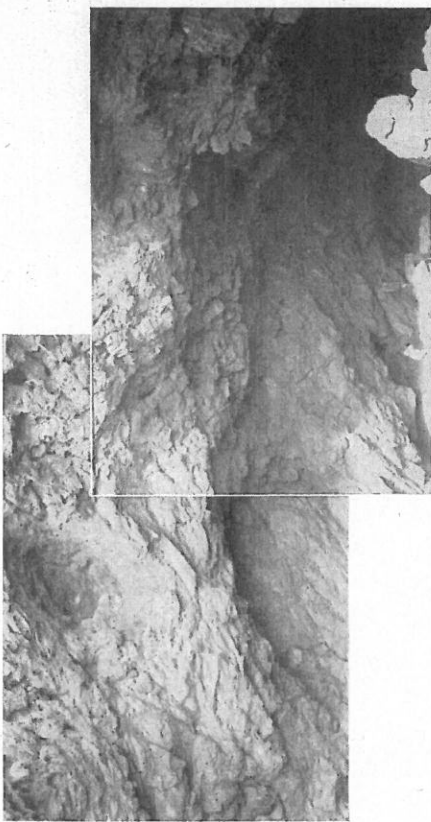


FIG. 6. Another view of Wilgamia showing part of the wall above the lower section of the mine. The wall shows evidence of the pounding received from crude stone tools. Short sticks used for prying formerly were visible in some of the cracks where they had been left but are said to have been shot out by passing whites. Scale is indicated by person in lower center.

to twenty square miles, and that as a result of the exigencies of subsistence the local horde of about thirty-five individuals could have devoted relatively little attention to other than food-securing activities. The aboriginal economic system is not organized in such a manner that this local group could have made their living by exchanging ochre for food. The natural resources of the locality are no better than those of the Murchison region as a whole, hence it must have been a difficult problem to feed for even a short period any large gathering of workers at the mine. Nevertheless close examination of the site reveals adequate proof that the aborigines with their crude and strictly limited means of exploitation are solely responsible for this most impressive excavation.

In the tunnels and strewn about the bottom of the open cut are hundreds of crude, unshaped stones, two to three times the size of the fist, which still serve as hand mauls for battering away the solid matrix in which the prized ochre is imprisoned. These rough tools also are used for driving short sticks into the ochre seams and into cracks for wedging and prying operations. The sticks, which vary between one and one and one-half inches in diameter and between six and eighteen inches in length, give the appearance of being broken "digging-sticks," the Australian

woman's typical tool, but it does not follow necessarily that women were the principal miners. Scores of these broken specimens are to be noticed in the tunnels just where they were dropped at the points of the latest mining activities.

In the extensive open cut, heaving operations also are conducted from scaffolds, although in recent years the tunnel deposits seem to have provided sufficient ochre for the needs of the greatly

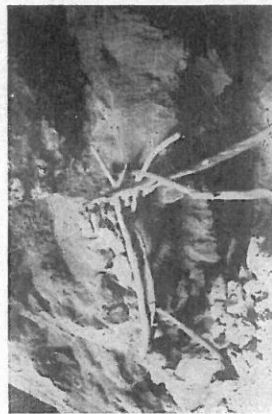


FIG. 7. The last scaffold at Wilgamia, constructed of poles cut with iron tools about 1920. Scaffolds apparently were important for undercutting, to cause great falls from the ceiling, and for scraping out seams of ochre beyond ordinary reach.

diminished aboriginal population. In 1939 the last scaffold erected was still standing but rickety (fig. 7). Built before 1920 of poles from two to three inches in diameter, cut with iron tools, it revealed the probable method by which much of the out-of-reach wall surface of former levels had been hacked away.

That this huge excavation is entirely the result of hand labor seems to be well indicated by evidence of battered and hewn surfaces at all levels of the cut. There also are indications at many places on the walls of natural cleavage, the probable results of undercutting. Whether undercutting was conducted for the purpose of bringing down fertile deposits or just the masses of barren rock which separated valuable lodes, is impossible to determine but, intentional or accidental, these great falls of rock facilitated greatly the exploitation of the site.

Although red ochre in a pure state probably was scraped away from its matrix in situ, the evidence from the top of the hill indicates that large chunks of rock were lugged to the surface and broken up at the head of the northern slope. At this point the underfooting is almost a solid layer of red ochre dust, while extending down the steep slope for seventy-five yards or more is a great accumulation of broken rocks.

Wilgamia is known as a place of fabulous wealth to all the aborigines of the west at least as far north as Carnarvon and the Gascoyne River and as far south as Kellerberrin and Quairading. In view of the importance of red ochre in aboriginal culture this reputation is understandable, particularly since the far west, in contrast to the Kimberley district, does not seem to be rich in number of red ochre sites. Some sources were utilized in the Murray district whence the product was traded northward to Perth. The Ingarda in the Carnarvon area claim a local supply in the river beds. Probably there are many other sites but a large proportion of the tribes in the west seem to have depended on Wilgamia. Possibly as the result of its great reputation other sources of minor importance were intentionally neglected as in the case of the great Parachilna red ochre site in South Australia (McCarthy, 86-88).

The antiquity of Wilgamia cannot be indicated. We have no means of determining the annual rate of extraction or the number of working hours devoted to mining each year. In addition, the demand may have varied considerably whenever distant tribesmen secured supplies elsewhere. Furthermore, it now is impossible to compute the

richness of the ochre deposits in that part of the mine already excavated. However, if we may judge by the quantity of ochre in evidence at the head of the slope and in situ, it would seem that there has been a relative abundance for a very long time. The annual requirements of red ochre per person also are unknown. Rock painting probably accounted for a negligible quantity compared with that used for body decoration for ceremonies. In recent years the few aborigines remaining in the region have continued to make occasional trips to the mine, each carrying away from five to ten pounds of the precious commodity. All factors considered it seems certain that a very minimum of many centuries should be allowed for the laborious scooping out of such a large excavation. Indeed it seems quite possible that Wilgamia may have been in process of exploitation for several millennia.

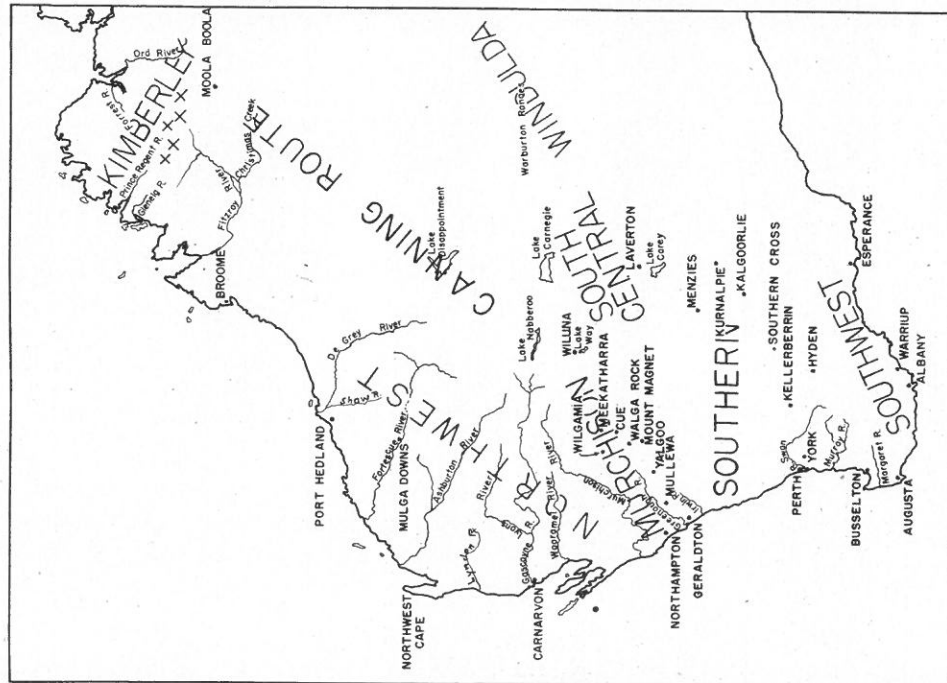
TECHNIQUES

The techniques in Western Australia do not differ from those in evidence elsewhere on the continent, but are not yet known to include all the variants found in the East. Pictographic techniques can be classified in principle as stenciling, line drawing, and surface painting, although there is no apparent difference in the manner of application of the pigments. The three are executed by daubing and smearing, either with the tip of the finger or some simple "brush," such as the softened end of a stick. The differences are to be noted rather in the results attained by the direction and extent of the application. Style, therefore, is an important consideration in determining whether a portrayal should be classified as a drawing or a painting.

This is not the case in respect to petroglyphic techniques. Since either abrading or percussion can be employed for both line carvings and surface carvings, there is no necessary association between style and the manner of execution. Some line carvings are said to have been made by grooving with a pebble but none has been verified. Others are the results of pecking or hammer-dressing. Simple scratching has not been reported. Some surface carvings have been battered only sufficiently to expose a contrasting shade in the rock and therefore show little depression. Others, of intaglio type, are relatively shallow and seem to have been made entirely by abrading. The extent to which deeper intaglios were produced by pecking, battering, or grinding, or by use of all three, can be determined only by a

careful survey of the many unstudied sites. It is of interest to note that the grinding technique through use of the stone mill, is known throughout virtually all of Western Australia. In areas where petroglyphs are lacking the mill obviously has preceded them. In areas where both are present

their chronological relationship remains to be determined. The distributions of the various pictographic and petroglyphic techniques are of interest. Stenciling is the most widespread. It is known to be present in all pictographic areas, except Windulda,



MAP 2. Pictographic and petroglyphic areas of Western Australia.

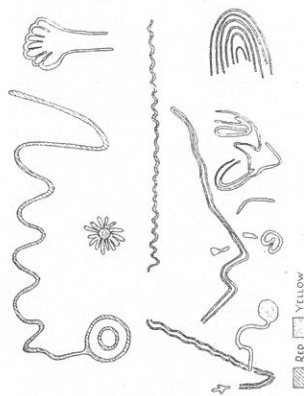


Fig. 8. Pictographs, Waika Rock (● 21). Sketches of various motifs including a "sunburst," an outlined hand with seven digits, a "bifurcated figure," and multiple concentric arcs. The tailed concentric circles and tailed spot suggest snakes emerging from holes.

where it has not been mentioned. It is most important in the south and west, where it predominates at most sites and is the exclusive type of portrayal at many.

Line drawings also are widely distributed but appear only occasionally and in very simple form in the southernmost sites, become more numerous and more complex but in general remain secondary to stencils in the Murchison area, and attain their greatest complexity, often in combination with surface painting, in the Kimberley region.

Surface painting is typical only in the Kimberley district and adjacent areas but is found at a few sites as far to the southwest as Willow Gully (● 15) in the Murchison area. It has not been noticed in any southern sites, unless filling the palms of a few stenciled hands at The Humps (● 7) is to be so classified.

The distribution of the petroglyphic techniques cannot be given. They cannot be inferred in the few cases where only style is reported. In addition, the very existence of petroglyphs in certain areas remains in doubt. Of nine possible sites south of the Murchison it is uncertain whether seven contain petroglyphs, pictographs, or freak erosions. At York (▲ 1) the reported carved circle, which could not be found in 1938, could have been made by any technique. The only mention of technique is for the "not distant" Murchison site (▲ 3) where a human foot and other "marks" are said to have been worn into the rock by repeated rubbings with a pebble.

Grooving with a pebble also has been reported

far to the northeast at Gordon Downs (▲ 40) but has not been verified. Whether this technique was employed in the Northwest remains to be determined. Delicate pecking seems to have been employed at several sites. At Port Hedland (▲ 25) the severely eroded deeper and wider grooves, the few intaglios, and the surface carvings which show pock-mark treatment, appear to have been produced by more violent percussion. Simple battering to mar the surface sufficiently to show contrast is found at widely separated Williambury (▲ 13) and Coopoooy (▲ 30), and presumably elsewhere. The techniques along the Canning Route (▲ 4F) and at the Glenelg River (▲ 39) are unstudied.

It is important to note that pictographs and petroglyphs apparently are not found together at the same site. Exceptions to this generalization may be discovered but at the present time the two traditions seem to be quite exclusive of each other.



Fig. 9. Pictographs, Willow Gully (● 15). The large snake (seven feet in length) and oval figure are in white, outlined in black. They were applied over orange-red linear figures. Not shown are numerous stenciled hands.

Nevertheless, those in adjacent areas share styles and motifs in spite of the differences in techniques.

STYLISTIC CONTROLS

The portraying of both pictographs and petroglyphs is subject to various conventions, some apparently of local or regional appearance, although they may be found to be more widespread when the evidence is more complete.

There seem to be three major traditions in Western Australia. The subject may be shown by an outline, by a few lines to indicate the basic structure, or by treatment of the entire surface to the dimensions required.

The outline type seems to be the most widespread. It can be expressed by stenciling, drawing, or carving. Stenciling is very common throughout most of the pictographic areas but is most typical in the south and west, and relatively unimportant in the Kimberley district where other

techniques and styles predominate. Freehand outline drawings and carvings seem to be lacking in the southern sites, with the exceptions of a few drawn hands at The Humps (●7), and the drawn circle enclosing a grill and the carved circle at York (●●1), if they are to be classified as of outline type, a debatable point. In the Murchison a few simple outline drawings are to be noticed at Yarraquin (●22), and a hand and anthropomorph (figs. 8, 13) at Waiga Rock (●21). However, occasionally at the latter site, and more frequently at Willow Gully (●15), the enclosed space is painted or daubed with a contrasting color typical at Port Hedland, usually with carved details in the enclosed space (figs. 10, 11). In the Kimberley district outline drawings are best illustrated by the wondjinias, and the snakes at the Calder River. In these examples the interior details are elaborate and may consist of either drawn lines or painted surfaces or both. The earth drawings at Broiga Lagoon also should be mentioned, although they are not sufficiently described to permit detailed comparison.

The type of portrayal in which the structure is indicated linearly, rather than by outline, lends itself most readily to geometric figures and floral motifs, but it also can be employed for depicting the tracks of emus, kangaroos, and snakes, or the snakes themselves, as well as animals and humans. Pictographs of this type are rare in the south. With the exception of the complex "maze" or "plan" at Bald Hill (●8) (fig. 12), the southern examples are simple. They include two emu-foot figures, two "rakes," two concentric arcs, a small circle, a figure like a "4," and a small "maze." Presumably in this classification are the circle and grill at York (▲●1).

In the western Murchison area all the simple motifs noted in the south also are present. In addition, there are elaborate appearances at Waiga Rock (●21) where single lines and multiple parallel lines meander about without obvious order, meet others, cross at angles, or are arranged variously into "plans" or "mazes" and non-descripts (figs. 14-16). Some of the latter may have been realistic portrayals to the aborigines. In the Northwest the same simple and complex arc arrangements, "rakes," emu-foot figures, circles, long meandering lines, singly or in multiples, and complex "plans" are found as carvings. As presently known, the most prominent sites are those along the Lyons River and at Port Hedland and Yarrri-Muccan (▲10-12, 25, 33) (figs. 3, 12, 17, 19, 22, 23).

Treatment of the entire surface to produce either a painted or battered silhouette or an intaglio is a practice most typical of northern regions.

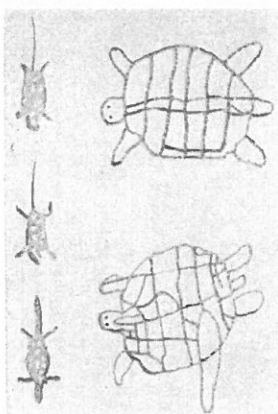


Fig. 11. Petroglyphs, Port Hedland (▲25). Lizards as intaglios and outlined turtles with carapace indicated.

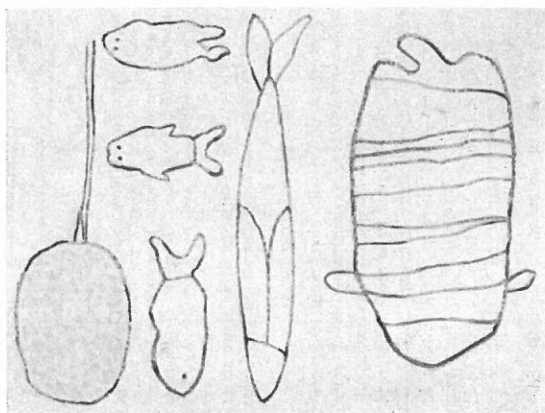


Fig. 10. Petroglyphs, Port Hedland (▲25). The body of the stingray at the top is pockmarked, an unusual technique. Some figures of fish could be confused with simple human figures. The figure at the bottom seems to be that of a dugong.

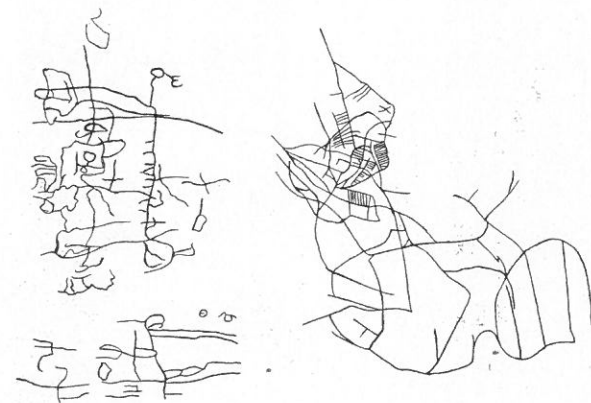


Fig. 12. "Plans" or "mazes." Upper: Pictograph in red covering several square yards. Lower: Petroglyph covering several square yards. Minnie Creek (▲11).

white or, to describe it otherwise, of painting in a different color the space enclosed by an outline drawing. This convention is very common in the Kimberley area as well as in the Northern Territory, but it is rare in the Murchison area, where examples are found at Appertara, Willow Gully, and Waiga Rock (●14, 15, 21) (fig. 9). It also is present in the Windulla area but seems to be lacking in all southern sites.

It also is in the Kimberley area and the Northern Territory that polychromic portrayals are typical. Four colors are not unusual in the wondjinias of the former and in the case of the Lightning Brothers in the latter (Davidson, 1936, pl. 1). Three colors in a single figure are unusual in Central Australia and South Australia. At Windulla, near the Central Australian frontier, one very simple figure consists of a black line outlined principally in white, partly in red. Three-toned figures have not been noticed in the Murchison area. Indeed, the use of two colors in the same figure has been noticed only at Appertara, Willow Gully, and Waiga Rock (●14, 15, 21).

Monochromes are typical of all southern sites. The only figures showing two colors are the yellow grill over a red background at York (●1) and four white stenciled hands with red palms at The Humps (●7).

In so far as the number of colors at a site is concerned, four and occasionally five are employed in the Kimberley area, but it is unusual to find more than two in any site in the Murchison district. In the south three colors are to be noted only at The Humps (●7). Some other sites show two colors, but many in the south as in the Murchison area

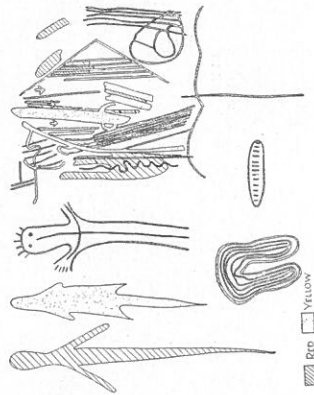


Fig. 13. Pictographs, Waiga Rock (●21). Sketches of large lizards as silhouettes, an anthropomorphic figure, and non-descripts.

OTHER CONVENTIONS

Interesting conventions limited to pictographs also should be noted. One is the practice of outlining a silhouette with a contrasting color, usually

exhibit only one, even though the subjects portrayed may be quite varied, as at the Greenough River (● 13). Since many of these sites are near others where the same motifs are executed in different colors, the lack of more than one color cannot be ascribed to the unavailability in the region of certain pigments. An explanation rather should be sought in the local cultural forces which define a certain color as appropriate for either pictographs in general or only certain types of portrayal.

MOTIFS

Most Australian motifs can be classified quite readily as naturalistic or geometric. A few are questionable. What seem to be distorted forms

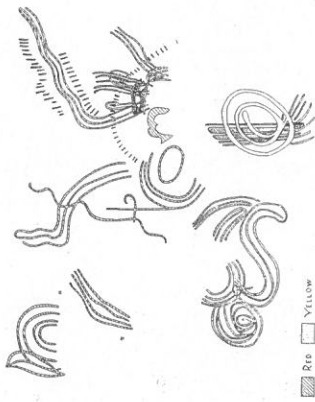


FIG. 14. Pictographs, Waigwa Rock (● 21). Sketches of motifs from various locations showing prominent use of parallel lines in serpentine and arc arrangements. The spiral form in the lower right is the nearest approach to concentric circles.

late to secure general, to say nothing of detailed, information. At least the few old aborigines encountered in 1938 professed no direct knowledge of the content of pictographs and petroglyphs, although if each could have been taken to the displays in his home country it is possible that some recollections of interest might have been forthcoming. North of the Murchison River, where aboriginal culture began to disintegrate later than in the Southwest, some information of importance undoubtedly can still be obtained, particularly at the more isolated stations. However, it is in the Kimberley district and the eastern desert country that opportunity to study all aspects of aboriginal art still remains. The art in the desert area, even if it may be less spectacular than that of the Kimberley district, may contribute more to the understanding of art problems, for the motifs, techniques and styles of portrayals in this region should throw light on north-south and east-west interrelationships, not only within pictographs and petroglyphs respectively, but also between these two major traditions.

For the time being it is necessary to confine attention to the formal aspects of Western Australian art and to assign the motifs descriptive terms which do not imply the known or imputed meanings associated with them in other parts of the continent.

The various motifs can be grouped under the headings of fauna, hands, foot-tracks, anthropomorphic figures, artifacts, compositions, and geometric figures. The aborigines presumably would not agree with the placing of the geometric forms in a separate classification.

FAUNA

It is curious that of the great wealth of marsupials, birds, reptiles, insects, and fish important for food and various economic pursuits and in religious concepts and mythology, very few have been chosen for representation as pictographs or petroglyphs. For the continent at large, snakes, kangaroos, lizards and emus, apparently in the order named, are the common subjects. At some sites they appear together, at others singly or in various combinations, at still others not at all. Interest in displaying sea life, as might be expected, is confined to coastal areas, although at many sites near the sea these subjects have been neglected. Fish seem to be portrayed only near the coast, although they are utilized for food in inland areas wherever found in streams and pools. Strangely enough the widely distributed dingoes,

echidnas, and opossums have received only occasional attention, just as wombats, koalas, and platypuses are seldom portrayed in their more restricted habitats. Of the numerous smaller marsupials and birds few have been noted in the displays anywhere in Australia, although many are important in totemic beliefs and mythology.

It cannot be doubted that the artists had specific snakes and animals in mind when the pictographs and petroglyphs were executed, but so stylized are most of the portrayals that without ethnological advice identification of the species in most cases is impossible. The same narrow range of naturalistic subjects and the widespread similarities in styles and techniques of execution are among the most striking features of Australian art, for they demonstrate that the continent shares a basic art tradition.

Some of the geometric figures to be considered below probably represent fauna. The serpentine forms are the most suggestive but since they are not known to represent snakes, and may have other meanings, they should not be identified without the testimony of the aborigines.

In Western Australia the usual faunal subjects are represented in both pictographs and petroglyphs. However, since the region in which they are found, the northern two-thirds of the state, is poorly known, it is impossible to determine their relative importance until the evidence is more abundant.

Snakes. In Western Australia snakes seem to be the most common as well as the most widespread faunal motif. The most realistic in expression of details and the largest are found in the Kimberley pictographs. The southernmost appearances seem to be at Dalganger (● 19), Willow Gully (● 15), where one example is seven feet in length (fig. 9), and at Windula (● 31), where a six-foot drawing suggests a snake. The petroglyphs of the Northwest show a number of quite realistic snakes, particularly at Port Hedland (▲ 25), but much more numerous are the serpentine figures expressed by single or multiple parallel lines (fig. 3). Also common to both petroglyphs and pictographs are spirals, which may represent coiled snakes, and lines running from holes in the rock or from drawn circles, which suggest snakes emerging from holes (figs. 8, 14-16). Neither snakes nor serpentine are to be seen in southern sites.

Kangaroos. These animals also are lacking in southern and most western sites. There is an outline drawing at Yarraquin (● 22). Petro-

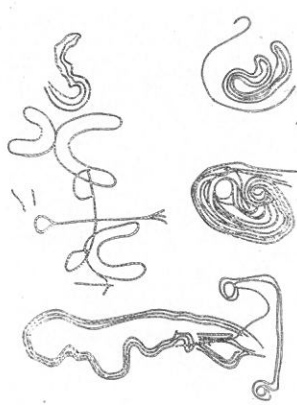


FIG. 15. Pictographs, Waigwa Rock (● 21). Sketches of various figures. The two examples in the lower right resemble figures in Central Australia variously interpreted by Europeans but with meanings to the aborigines still undetermined.

ethnological data. It is possible that some of the continentally distributed motifs have fairly similar meanings in all areas but, if so, supporting evidence is not yet available. Indeed, the little now known on the meaning of specific motifs indicates considerable variability in interpretation from area to area and frequently within individual areas.

In Western Australia there are few ethnological details on the identification of motifs, the meanings associated with decorative or sacred elements, or the significance of the sites where they appear. In the Kimberley area data have been collected on the wonjijina galleries and their mythological and religious associations, but other aspects of art have received little attention. For the southern and western sites records are lacking and it now is too

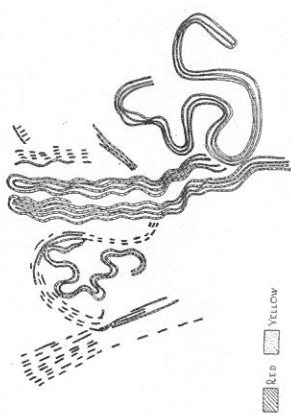


FIG. 16. Pictographs, Waigwa Rock (● 21). Sketches of arrangements of parallel lines, continuous or broken.

may be regarded by the aborigines as obviously realistic. Whether they view most geometric figures as realistic portrayals rather than designs, in much the same manner as Europeans see realism in the five-pointed "star," is a moot question, but in the central portions of the continent such motifs as arcs, concentric arcs and concentric circles not only represent objects, animals, humans, mythological ancestors and places, but may be thought of as realistic in themselves, in spite of the variety of interpretations given each throughout its extensive distribution and even within local areas.

The interpretation and naming of obscure figures, the significance of naturalistic motifs, and the meaning of the more readily definable geometric forms thus cannot be determined without

glyphic examples are found along the Fortesque and Hooley Rivers (▲ 20, 22) and at Depuch Island (▲ 24). How common this subject may be in the Kimberley pictographs is not reported.

Lizards. Although lizards are portrayed in many sites in other parts of the continent they are not yet known to be numerous in Western Australia. They too are lacking in the southernmost sites. Some large silhouettes are found at Walga Rock (● 21) (fig. 13), a small example at Willow Gully (● 15). Lizards are shown in the petroglyphs at Williambury (▲ 13). Coospoocy (▲ 30), and Port Hedland (▲ 25) (fig. 11). Their importance in the Kimberley pictographs is not reported, but some virtually identical portrayals in the Forrest and Lyne Rivers area (● 44) are said to represent crocodiles.

Emus. These birds seem to have been generally neglected in Western Australia. At Port Hedland (▲ 25) is an interesting petroglyph of an emu sitting on nine nested eggs, as seen from below. This unusual portrayal also is found as a pictograph in Central Australia (Davidson, 1936, fig. 26*k* and pl. 2).

Marine Life. The only prominent displays of marine life known at present are those at Port Hedland and Depuch Island (▲ 24, 25). Fish, turtles, crabs, and stingrays are numerous (figs. 10, 11). Minor exhibits are reported for some Kimberley coastal sites.

STENCILED HANDS

The most widely distributed portrayal in Western Australia is the stenciled hand, usually the left, a common motif throughout most of the continent excepting South Australia. In the southern and western parts of the state it not only predominates but is the exclusive display in many sites. The appearances usually are in red, occasionally in white, rarely in yellow. Only in the Bates Range (● 27) are they reported in black. For the many rumored sites in the rough breakaway country from Yalgoo to east of Cue red stenciled hands are the only portrayals mentioned. They are reported along the Canning Route and seem to be widespread but secondary to the more elaborate displays of other motifs in the Kimberley area (Conigrave, 124).

An unusual feature noticed only at Willow Gully (● 15) is the use of red daubs to indicate the finger tips of white stenciled hands.

The hand seems to have been considered a suitable subject for portrayal in other techniques, for such appearances are not uncommon in Aus-



FIG. 17. Petroglyphs, Gifford Creek (▲ 10).

tralia, although they seldom are prominent at any site. In some cases the hand appears to have been stamped on the wall, then retouched. In others the drawings are freehand. In the latter, as in displays of the human figure, the number of fingers often is exaggerated. Examples with seven digits are present at The Humps and Walga Rock (● 7, 21) (fig. 8). A petroglyph of a hand (?) at Port Hedland is shown in figure 20.

The most spectacular display of hands, possibly Australia's greatest array, is to be seen at The Humps (● 7). Over one hundred stencils in red, white, or yellow are quite vivid. Numerous others appear faintly. There also are stamped and drawn hands in red or white. Probably over two hundred examples formerly were sharply defined, many on the ceiling where they could have been applied only from scaffolds or, in some places, possibly from the shoulders of assistants. Other sites with prominent but much smaller exhibits are Kellerberrin and Warrachupin in the south with the portrayals in red (● 3, 4), and Willow Gully in the west with the display in white (● 15).

The only sites south of the Murchison River in which stenciled hands are known to be lacking are Bald Hill and Daigaranger B (● 8, 19). Farther to the east the hand is not mentioned for Red Castle or Windula (● 11, 31).

The significance of the hand motif in Western Australia is undetermined. It is reported that at Milly-milly a young girl when about seven years of age had her hand stenciled as part of a betrothal contract, but that the stencils of adult hands had no particular meaning. In the south and west the aborigines had no explanation and were as curious as Europeans. In the western Kimberley district it has been said that stenciled hands represent aboriginal "calling cards," but if it had been customary for visitors to leave such evidence it seems

and wallabies, and even more rare are representations of their front feet. Dingo tracks are very uncommon. Serpentine lines are popular but it is uncertain whether they represent the tracks of snakes or the snakes themselves. Some possibly have other meanings.

In Western Australia the emu-foot motif is widely distributed. It is not common in the south but does appear as a pictograph at Kellerberrin and The Humps (● 3, 7), in the west at Willow Gully, Walga Rock, Yarraquin, and Meeberrie (?) (● 15, 21, 22, 25), and in the Northwest as a petroglyph in the Lyons River sites, at Port Hedland, Depuch Island, and near the 767 mile location of the rabbit-proof fence (▲ 10-12, 24, 25, 35).

Human tracks are shown as intaglios at Port Hedland (fig. 20). They are scattered about the site and do not indicate a series of steps as is reported for the unlocated sites south of Carnarvon (▲ 18). Whether the latter contains petroglyphs or examples of natural erosion is unknown, as is also the case at Bugadji (▲ 4). It should be kept in mind that a series of steps is more realistic than a single track, but this does not permit the generalization that a series is not symbolic, a single print not realistic.

A single stenciled foot is present at Nannutharra (● 17), a painted example at Willow Gully (● 15). Animal tracks are numerous at Port Hedland and are reported at Meeberrie and along the Rabbit-proof fence (▲ 7, 25, 35) (fig. 20).

ANTHROPOMORPHIC FIGURES

Human and human-like portrayals are uncommon in Australian portable art. However, in pictographs and petroglyphs they not only are widely distributed but attain prominence in several areas. Whether human beings or mythological characters are represented usually is not clear from the displays and unfortunately the ethnological context is known in few areas. Although many regional peculiarities in form can be discerned, the basic stylistic qualities are quite constant. With the exceptions of the pictographs sketched by Bradshaw in the Kimberley area and some of the newly discovered portrayals in the Northern Territory, most anthropomorphs are characterized by full face view, mouth and often other facial details lacking, several radiating lines for hair, fingers, and toes either lacking or sometimes shown as too few or too many, and palms and soles usually in full view. These conventions tend to prevail whether the portrayals are drawn or carved

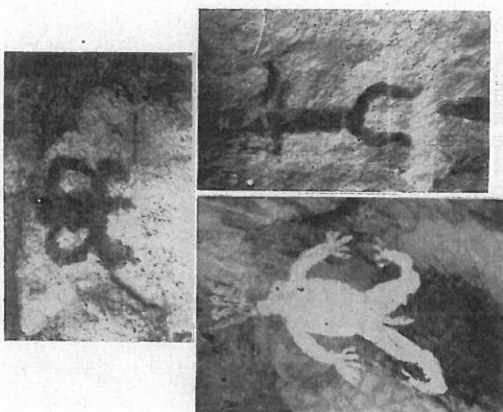


FIG. 18. Pictographs of anthropomorphic figures. Upper, and lower right: Black silhouettes, Moola Boola (● 39). Lower left: White silhouette with legs turned outward and upward. South of Napier Range (● 38). (Photograph by Dr. C. T. Teichert.)

strange that the appearances are not more numerous.

OTHER STENCILS

The human foot seems to be an unimportant subject for stenciling in Western Australia. One example in red is present at Nannutharra (● 17). Stencils of objects also seem to be uncommon in the state but appear at the Greenough River, Appertara, Willow Gully, and Nannutharra, sites fairly close to one another (● 13-15, 17).

FOOT-TRACKS

In a culture which attaches so much importance to the tracking of humans and animals as the Australian, it should not be considered strange that footprints are selected for depiction. Yet of the innumerable types of tracks which every aborigine is taught to recognize in infancy, only those of the emu can be said to be commonly portrayed throughout most of the continent. Since the motif is simple and appears in various sizes it is possible that some examples represent other birds. Less frequently seen and less widely distributed are the portrayals of the hind feet of kangaroos

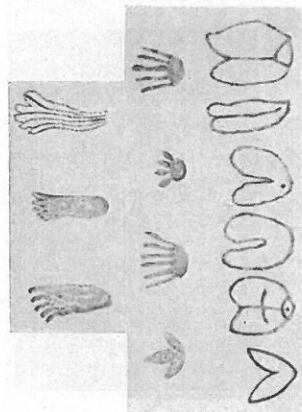


FIG. 20. Pictographs, Port Hedland (▲ 25). Upper: Human foot tracks and a hand (?). Middle: Emu foot and kangaroo paws (?). Lower: "Bifurcated figures." Example at left also is found at Gifford Creek (▲ 10), and as a pictograph at Willow Gully (● 15).

One example portrays a man with a spear and shield. Of greater interest is another which apparently shows a seated female with legs curved upward in a manner similar to the posture mentioned for other sites (Davidson, 1936, fig. 27).

Less certain of identification are the representational figures at Williamsburg (▲ 13) (fig. 24). Other petroglyphic examples are reported along the lower Fortesque River (▲ 20).

The southernmost anthropomorphs in the far west are found as pictographs at Willow Gully and Walga Rock (● 15, 21) (fig. 13). In the latter case the portrayal is quite similar to the general run of Australian anthropomorphic figures.

The numerous varieties of human and human-like portrayals in the northern latitudes of Western Australia establish this region as one of major importance for this subject. The basic features are similar to those in other parts of the continent, but the diversity in details and the prominence in head ornaments define regional peculiarities.

FLORA

The interest in depicting floral subjects in Western Australia cannot be properly assessed at this time. In the Kimberley district certain small fruit are shown by circular figures. At Port Hedland some carvings suggest plants or spears (fig. 21).

ARTIFACTS

It is unfortunate that the aborigines had little interest in portraying material possessions, for the

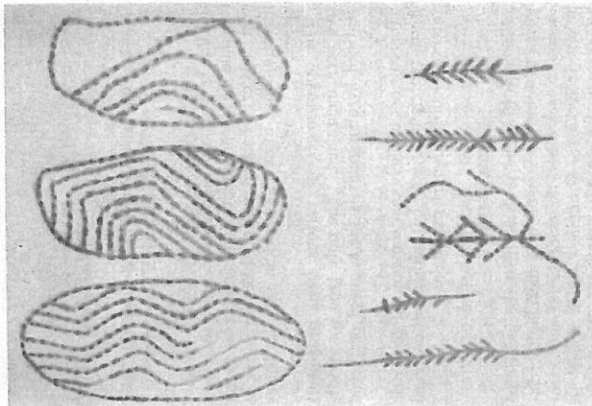


FIG. 21. Petroglyphs, Port Hedland (▲ 25). Upper: Shields (?). Lower: Spears (?) or flora (?).

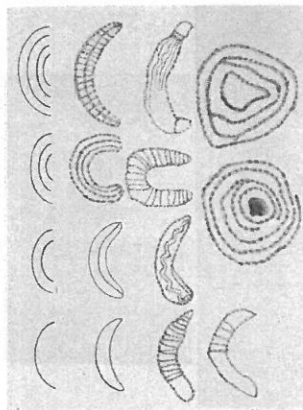


FIG. 19. Pictographs and petroglyphs of arc and arc-like figures and spirals. Top row, and left figures of second row: Typical pictographs at various sites. Second row right figures, and third and bottom rows: Petroglyphs, Port Hedland (▲ 25). The spirals are the nearest approach to concentric circles.

with a wangi or thread-cross type of headdress. The same aboriginal informant saw this type of head ornament along the Canning Route (● 32) in a pictograph of a "man" with head, nose and mouth, but without a body. Several hundred miles to the south, separated by the uninvestigated eastern desert region, is Red Castle where pictographs of aborigines with "dress and bell-topped hats" are reported (● 11).

In the petroglyphic Northwest several types can be listed. They differ in detail not only from each other but also from the portrayals in the northern part of the state. The most realistic is the large human-size figure at Mount Edgar (▲ 31) (fig. 4). A projection from the top of the head is noteworthy as are also the two knobs on the sides. Some sort of headdress may be intended, but if the knobs represent ears they are very unusual. Ears are indicated on a human-like figure of a spirit-child at Wunda (● 44) but they generally are lacking throughout the continent. A second portrayal at Mount Edgar is highly conventionalized. Attention is called to the peculiar distortion of the legs mentioned above.

The quite realistic human figures at Coopooy (▲ 30) are shown in figure 4. All are small and characterized by what seems to be a fairly similar type of "head ornament." In marked contrast is a crude carving at Port Hedland (▲ 25) which conforms more to the generalized type of portrayal. The human figures at Depuch Island (▲ 24) lack indications of hair and headdress.

outlines, painted or battered surfaces, or intaglios. Anthropomorphic figures occupy what is essentially an eastern, northern, and northwestern distribution, with numerous appearances in New South Wales, southern and central Queensland, the Northern Territory, and northern Western Australia. They seem to be lacking in general in the southernmost portions of the continent and to be rare in the central latitudes.

In Western Australia anthropomorphs are lacking in the far south, rare in the Murchison district, and prominent in the Northwest, the Canning Route area, and the Kimberley region. Although basically similar, the portrayals show many local and areal differences.

The best known is the wondjina type which seems to be confined to the northwestern Kimberley area (● 47-59). In addition to the usual basic stylistic qualities mentioned for anthropomorphic figures in general are several distinctive features. The outline is filled with a generous use of drawn lines and painted surfaces in different colors to emphasize selected details. Singled out for conventional treatment are the eyes and eyelashes, nose, a decorated headband, numerous fine radiating lines for the hair, a bust-like upper torso extending from a mouthless face, a body striped with parallel, longitudinal, narrow, alternating colors, and arms and legs, when shown, similarly filled with stripes or broken lines. The size of the figures varies from several inches to thirteen feet.

Also in part of the same area are the peculiar, realistic human forms in various poses discovered by Bradshaw. His sketches indicate traditions in style and treatment unlike those elsewhere on the continent.

Still different forms representing a spirit and Brimur, the rainbow-serpent, are illustrated by Kaberry (1936, figs. A and B) for the Forrest and Lyne Rivers area (● 44).

For the region directly south of the Kimberley Ranges the evidence is meager. Nevertheless several human-like figures with different features already are known. At Moola Boola (● 39) are silhouettes in conventionalized poses (fig. 18). South of the Napier Range (● 38) a crudely executed monochrome shows quite different features (fig. 18). Whether the few stiffly upright, broad lines on the top of the head represent a headdress rather than hair is not clear. Attention is called to the outward and upward curve in the legs, a distortion found at other sites (see Kaberry, 1940, fig. A). At Palm Springs, Gordon Downs (▲ 40), outline carvings are said to show a man

may be spearthrowers are stenciled at Greenough River and Appertara (● 13, 14). At the former a tobacco pipe also is reported.

Spears and shields have not been noticed as pictographs but may be represented in the petroglyphs at Depuch Island and Port Hedland (▲ 24, 25). A few portrayals are quite realistic but others, of slightly different appearance, raise doubts as to which forms are standard, which variant (fig. 21). Carvings of spears also are mentioned for a site in the lower Fortesque River area (▲ 20). The report of fish-hooks and lines in the Port Hedland display should be queried. Most figures at this site are severely eroded and many overlap with others of such a different nature that a functional relationship should not be assumed. The "hook" sketched by Campbell (1911) resembles an emu-foot and is adjacent to other emu-foot figures. Since "hooks and lines" and emu tracks have no apparent significance as a composition the identification is suspect. Similarly Camp-



FIG. 22. Petroglyphs, Port Hedland (▲ 25). "Rake" and "rake-like" figures.

bell's interpretation of a stingray caught by hook and line and impaled on a spear is not convincing. It would be surprising to find fish-hooks as far west as Port Hedland unless their derivation is different from those employed in the Kimberley district.

The appearances of various head ornaments have been mentioned. The only type specifically identified by aborigines is the wamingi or thread cross.

It seems not unlikely that some of the geometric figures represent objects, but without ethnological evidence identification is uncertain.

COMPOSITIONS

Although it seems probable that the individual figures at some sites stand in a meaningful relationship to each other, the evidence for such associations is lacking. Groupings which appeal to Europeans as logical may lack significance to the aborigines, and others which do not suggest any basis for conjunction may be quite obviously inter-



FIG. 23. Petroglyphs of arc-like figures. Upper: Gifford Creek (▲ 10). Lower: Yarrri-Muccan (▲ 33).

related to aborigines who understand local mythology, folklore, and art symbolism.

In eastern Australia and the Northern Territory are various exhibits of hunting scenes, human figures in dancing postures, series of footprints, etc. In some areas the ethnological significance of the sites as well as the portrayals is known (Elkin, 1949). In Western Australia scenes showing activity seem to be rare. At Depuch Island (▲ 24) a number of small human figures, according to Wickham's sketches, seem to be dancing along the perimeter of what appears to be a wheel-like ceremonial ground. In another example a bird of prey may be attacking an animal if the spatial relationship of the two figures is intentional. The humans shown at Coopooey (▲ 30) do not seem to be engaged in any unified activity (fig. 4), whereas the figures at Williamsbury (▲ 13), whatever they may represent, appear to comprise a unit (fig. 24).

At many pictographic sites the most recent artists have placed their works along side or partly over the portrayals made by their predecessors; hence, if it is traditional to apply certain motifs at a particular site an outsider might interpret fortu-



FIG. 24. Petroglyphs, Williamsbury (▲ 13). (Photograph by W. H. Brush.)

tous spatial relationships as evidence of composition. Such misleading situations may be found in some of the complex geometric figures assumed to be interlocking.

GEOMETRIC FIGURES

Geometric figures in pictographs and petroglyphs are widely distributed in Australia but seem to be lacking or relatively scarce in northern, eastern, and southwestern regions. They are dominant in much of South Australia and Central Australia and at Windulda, are prominent in the Northwest and at certain sites in the Murchison area.

Many geometric figures are difficult to classify. Some undoubtedly are seen by the aborigines as realistic motifs; hence somewhat different forms may be recognized as variants. However, without such knowledge it is impossible to make intelligent groupings, with the result that an enumeration of all the slightly different figures as separate motifs would be not only cumbersome but possibly very misleading. Particularly confusing are the many quite standardized forms which do not confirm to the geometric figures named in European culture. For example, Europeans give the name concentric circles to a figure consisting of one circle drawn around another. It is possible, depending on local art conventions, that the aborigines may describe such a figure as a single circle with an outline around it, or as a hole enclosed by a single circle. Similarly a painted spot in some cases may be the equivalent of a drawn circle. Without clarification of these points by ethnological evidence any classification must be considered tentative.

Until more distributional data and ethnological advices from a number of widely separated areas

are secured it is convenient to consider the geometric figures of Western Australia under such headings as arcs, circles, "rakes," grills, sunbursts, mazes, serpentes, and "bifurcated figures."

Arcs. Arcs, either drawn, painted, outlined, or carved, single or concentric, simple or complex, are found in a wide distribution in Western Australia. In the south they are represented only at The Humps (● 7). In the Kimberley area they may be rare although the horse-shoe shaped Earth Drawings possibly belong to this class. It is in the intermediate Northwest and the lower Murchison areas that they are prominent, as well as at Windulda (● 31) in simple form, and in great variety in Central Australia and South Australia.

The portrayals show great variability and it is uncertain whether the differences are merely the results of local modifications in style, media, or proportions of length-breadth or degree of curvature. Possibly the same subject has been shown with freedom of expression. Possibly each of the more standardized variants represents a different subject. Possibly identical forms have entirely different meanings.

One regional variant of quite frequent appearance in the Northwest and Murchison areas is shown in figure 23. It usually consists of an outline drawing or carving of an arc-form with rounded extremities and with one or two parallel interior arcs. Examples are found at Minnie and Gifford Creeks, Port Hedland and Yarrri-Muccan (▲ 10, 11, 25, 33), and at Dalgaranga and Walga Rock (● 19, 21). Basically similar, but with such differences in decorative detail that the question of relationship is not clear, are numerous other examples at Port Hedland (fig. 19). Still others at this site show such realistic features that it is uncertain whether the same subject is represented by variants of a single motif, or several subjects illustrated by superficially similar designs.

Circles. The circle is the basic element in a number of figures which recur sufficiently often to be regarded as conventional forms. Whether a plain circle, drawn or carved, should be considered the same motif as a round spot, painted or carved, is a moot point, but examples of the latter seem to be found only in areas where treatment of the entire surface is typical of other portrayals.

The plain carved circle reported at York (▲ 1) was not found, but drawn circles are present at Hyden in the south (● 5), Greenough River, Appertara and Willow Gully in the west (● 13-15), and Windulda in the east (● 31). Petro-

glyphs are present at Gifford Creek (▲ 10). Round painted spots occur at Appertara, Willow Gully, and Waiga Rock (● 14, 15, 21), some at the two former sites being outlined. An oval spot is found at the Greenough River, one with an outline at Willow Gully.

Dotted circles appear in the Gifford Creek petroglyphs (▲ 10) and should not be confused with concentric circles. The nearest approaches to the latter are the "sunburst" figure at Yarrri-Muccan (▲ 33) (fig. 3), the poorly executed spirals at Waiga Rock (● 21), and some eroded figures at Port Hedland (▲ 25) of uncertain classification (figs. 14, 19). The only known petroglyph with three well defined concentric circles is at Windulda (● 31), near the border of Central Australia where the motif is common.

Tailed circles or tailed spots are discernible at Waiga Rock and Windulda as petroglyphs (● 21, 31) (fig. 8), and at Gifford Creek, Port Hedland, and Yarrri-Muccan (▲ 10, 25, 33) as petroglyphs (fig. 3). The appearances are quite similar to some realistic portrayals of snakes emerging from holes at Port Hedland, but are not known to have the same meaning.

Bisected and partly bisected circles, some equipped with a tail, are found in the Windulda petroglyphs (● 31) and the Gifford Creek petroglyphs (▲ 10).

Two circles joined by a line are drawn at Willow Gully (● 15) and carved at Gifford Creek (▲ 10) (fig. 17).

On the basis of the little evidence now available these various figures are widely scattered in Western Australia. It is important to note that the various motifs tend to recur together and that all are quite common in the central portions of the continent, particularly northern South Australia. It can be anticipated that they will be found in other Western Australian sites.

Rake. This is a convenient term for the type of design shown in figure 22. There is considerable variation in the appearances so designated, hence uncertainty whether all should be classed together. The simplest examples show just a few parallel lines, closely or openly spaced as the case may be. Usually the parallel lines extend at right angles from another line to give the "rake" effect, but in some cases the lines converge to suggest a tassel such as might be worn as a public ornament. In Western Australia typical examples are found as petroglyphs at Camel Peak and The Humps in the south (● 6, 7), at Willow Gully and Nannutharra in the west (● 13, 17), and as petroglyphs at Port

Hedland and Dupuch Island (▲ 24, 25). A variant example at the latter site encloses a human figure and has been interpreted as a hut. At Windulda (● 31) Mountford was told that the short parallel lines in a somewhat similar figure represent meat laid down by the Wati Kuthara, the two culture heroes, for the aged Moon Man. It is questionable whether this figure should be included in the "rake" series, but not dissimilar forms are found in South Australia where more typical "rake" designs are not uncommon. The latter have been interpreted as fringe aprons.

Grill. A type of design which shows considerable variation consists of a series of crossed lines, sometimes enclosed by a circle or oval. Pictographic examples are found at York and Daigarranger (● 1, 19). There are numerous appearances in South Australia and Central Australia. *Sunburst.* This figure appears in various parts of the continent but is not prominent in any area. In most cases its significance is unknown. That it represents the sun in many localities seems not unlikely although at Princess Charlotte Bay, Queensland, it is said to represent a star-fish.

In Western Australia this figure is identified with the sun in the Kimberley area but its meaning has not been determined elsewhere. It is found as a petroglyph at Waiga Rock (● 21) (fig. 8). Whether the more elaborate carving at Yarrri-Muccan (▲ 33) (fig. 3) belongs in this classification or with circles is uncertain.

Mazes. This term is satisfactory for the complex of lines drawn in red at Bald Rock in the south (● 8), and carved at Minnie Creek in the Northwest (▲ 11) (fig. 12). Mazes are found in other parts of the state and continent but the two examples mentioned are among the most extensive displays, each covering many square yards.

Serpentine and Snake Figures. The portrayals in this category also are characterized by great variation in style but may belong together. Some seem quite realistic. Others consist of a single line or group of two to four parallel lines which meander without apparent pattern. Although no two figures seem to be identical, very similar forms occur in both petroglyphs and petroglyphs (figs. 3, 8, 9, 14-16).

As already noted realistic full length snakes, drawn or painted, are numerous in the Kimberley area, but also appear in the Murchison area at Willow Gully (● 15). Groups of parallel sinuous lines emerging from holes in the rock are found at Port Hedland and suggest that the circles or spots with a wavy line appended may have a simi-

lar significance (figs. 3, 8). This motif appears in petroglyphs or pictographs in the Northwest, the Murchison area, at Windulda, and in South Australia. Spiral figures in the petroglyphs at Port Hedland and the pictographs at Waiga Rock may represent coiled serpents (figs. 14, 19).

Bifurcated Figures. What seems to be a distinctive motif has sometimes been called a "bifurcated figure." For want of proper identification this term is retained. As shown in figure 20 there is variation in proportions of length and breadth and in the extent of the bifurcation. Some examples are reminiscent of the bisected circle, but most portrayals do not suggest the circle. The motif is found in the pictographs at Willow Gully and Waiga Rock (● 15, 21) and the petroglyphs at Gifford Creek and Port Hedland (▲ 10, 25).

HISTORICAL PERSPECTIVE

For problems of historical and chronological relationship pictographs and petroglyphs present unusual and distinctive features which permit and require special considerations. In most parts of the world these arts belong to the past; hence questions of antiquity, chronology and diffusion depend on archaeological correlations. Yet the portrayals themselves are not stratified in the usual sense, although there are occasional examples of superimposed displays. Nevertheless, as the result of their semi-permanent qualities under favorable conditions, both petroglyphs and petroglyphs may resist erosive influences for generations, centuries, and even millennia. Portrayals found side by side therefore are not necessarily contemporaries, except in the sense that they may belong to the same period or sub-period. But since an art period may persist for several hundred years, it may be impossible to detect in a single site, or in a series of sites, whether all appearances of a single motif or convention were executed at the same time or at various intervals over the course of time. In addition, large and small distributions, localized differences, variations in form, and changes in conventional treatment, indicate that every art period has been characterized by dynamic developments, that not all elements are of equal antiquity, that new traits and modifications of old ones occurred from time to time and from place to place, and diffused at varying speeds, and from various points, to distributions of varying extent. Thus pictographic and petroglyphic traits of different antiquity may appear to be contemporaries in the same display, and at different sites in the same locality, merely

because a direct means of determining their chronological relationship is not apparent. Furthermore, since old motifs and conventions are not necessarily replaced by new ones, but may continue to be applied side by side with the latter, the old and the new may in fact be contemporaries for a short or long time. A site newly selected today may be decorated with the accumulated features of the past and present. Under such conditions the older motifs might be superimposed over the newer as frequently as the latter are applied over them. Superimposed displays obviously indicate the order of application in a particular exhibit, but they do not necessarily reveal the chronological order of arrival of the traits involved, either in an area, a locality, or even a site. Furthermore, since two traits of different derivations may each spread ultimately to the point of origin of the other, their chronological relationship at one place is the reverse of that at the other. Superimposed displays might follow the chronological order at each place, at one but not at the other, or at neither. Although it seems likely that superimposed exhibits usually reflect the chronological order, there can be no certainty without corroboration from other types of evidence.

For ordinary archaeological materials the problem of chronology can be resolved by evidence of stratification; hence in areas where non-perishable or semi-permanent artifacts show the same decorative features as pictographs and petroglyphs, historical relationships can be established. However, it does not follow that the two traditions were necessarily contemporaries at all times. A motif may have been executed on rock for a long time before it was applied to objects, or vice versa. In addition, the two time periods might not overlap if during an interval the motif had been applied to other surfaces, such as trees, pieces of bark, or persons.

The available Australian evidence lends itself to few of the methods employed for the historical and chronological problems in palaeolithic European art. The Australian animals portrayed belong to living species; hence their exhibits cannot be assigned an antiquity merely by zoological classification, or as yet by the paleontology of archaeological sites. Furthermore, many decorated sites lack evidence of occupation and provide few artifacts for cross-reference. There also is a general lack of specimen types decorated with the same traits found on rock surfaces. In a large central region some of the motifs are applied to objects for ceremonies, but the decorations in paint

or bird-down are removed after each event. These designs also are incised on sacred objects in a large and still expanding distribution which now extends far from their pictographic area. Such specimens, if found archaeologically in most of their present distribution, would therefore throw no light on local pictographs or petroglyphs. However, wooden specimens, such as bullroarers and their counterparts, the churingas which are not perforated for the attachment of a string for swinging but held in the hands, are rare in Australian archaeological deposits. In arid regions where climatic conditions are favorable for their preservation they are consumed by white ants. Sacred objects furthermore are not apt to be lost in occupational sites for when not stored at places prohibited to women and children they are carefully concealed from the eyes of the uninitiated. The sacred storage places may or may not be near decorated sites.

The same motifs also are incised on stone churingas in a small area. Under normal circumstances these specimens should be found archaeologically at the sacred places, but in recent decades so many have been acquired by the Hermannsburg Mission that few may remain for the archaeologist. On the other hand, Australian pictographs and petroglyphs present types of evidence not available in most other parts of the world. Australia is the only continent in which pictographic art has been widely practiced during the last century and a half, and continues in a still large but diminishing region even at the present time, and in which petroglyphs, now obsolete, were still being carved in some eastern areas, if not elsewhere, when Europeans arrived. Approximate terminal dates for some types of display therefore can be indicated for various parts of the continent, although many sites may have been abandoned in each region at different times, some long ago. Only in Australia is it possible to study pictographers at work, to secure direct evidence of art content, to gather ethnographical data on the significance of the interrelationship between pictographic traits and the decorations on objects and persons, to ascertain which of the motifs visible at active sites are no longer applied, which were developed locally or acquired by diffusion within the knowledge of informants, and to learn whether new motifs were assigned to old myths or meanings, or came with or followed introduced mythological, religious, or ceremonial traits. These opportunities unfortunately have seldom been seized. Most ethnographic data pertain to the identification of

However, all these traditions share certain elements at one place or another and some of the apparent gaps in the distributions of pictographic and petroglyphic styles, conventions and motifs, are closed by the presence of the same traits in other associations, if not by the existence of undiscovered sites.

In respect to gaps in distribution it cannot be doubted that numerous sites await discovery. Nevertheless, it already is clear that pictographs and petroglyphs are not as evenly distributed as other aspects of culture. In areas where the petroglyphs are known to be numerous some sites may be many miles apart. Such gaps may loom large for local problems but from a continental point of view they can be seen in better perspective, especially when they interrupt the distributions of several traits. It also seems apparent that not all herds possessed decorated sites, and that in some areas one or more intervening horde properties may separate the positive appearances by considerable distances. On the basis of the few hundred sites now known it is obvious that the vast majority of the 7,000 to 8,500 herds lacked exhibits, and that several thousand sites either remain to be found or have completely disappeared.

However, even if ethnographical data never become abundant, and it already is too late to gather more evidence in much of the continent, Australian pictographs and petroglyphs can be studied to good advantage by consideration of the distributions of their formal elements. Indeed, for problems concerning the history of techniques, styles, conventions, and motifs it is well to avoid any bias which a knowledge of a few local meanings and integrations with non-art elements might impose. Meanings may change or be replaced from time to time and from place to place as the result of either the local developments of new attitudes or the spread of other art traits, or of myths or religious concepts. The integration in a certain locality may reveal the reasons why a particular motif is admired and perpetuated during recent times, but it does not necessarily throw any light on the former significance of the design in that locality, on its contemporary meaning in other areas, or on its associations at the time and place of inception. If an art trait does not have the same significance throughout its distribution its meaning in any one place may be quite incidental in its history, although a study of the distribution of the various meanings may reveal evidence of the history of its significance. This is a complex problem for each meaning occupies its own dis-

tribution within which it may be associated with different motifs. For example, certain types of mythological characters, if not specific heroes, are portrayed anthropomorphically in areas where realistic art prevails, and symbolically in regions where geometric forms are found. Beliefs in the same beings possibly are equally important in areas where a concept of decorating rock surfaces is lacking. In regions where it is traditional to regard important cultural possessions and institutions as gifts from a culture hero it can be expected that should explanations of the presence of diffused art traits be deemed necessary, the latter also may be ascribed to such a personality. Whether such technical or conventional features as grooving, monochromes, outline drawings, silhouettes, and the like, are attributed to the teachings of some mythological being remains to be reported. It would seem more likely that peculiar details in his own portrayal would be ascribed to him personally, for example, the lack of a mouth, an unusual number of digits, a type of headdress, or stripes on the body or limbs. However, each of these traits is associated with other heroes and occupies its own peculiar distribution; hence myths or interpretations which assign the origin to a particular hero in each locality are local rationalizations of art history. The art of any area should be recognized as the product, with local variations and additions, of historical forces which have brought together individually and as complexes certain techniques, styles, conventions, and motifs. The meaning of the art of an area similarly is the product, with local variations and additions, of historical forces which have brought together innumerable attitudes, concepts, and myths concerning the subjects and forms portrayed, and the ramifications in non-artistic aspects of culture, be they religious, social, economic, or political.

For a comprehensive understanding of the formal aspects of art in any area it is necessary that each element which enters into the complex be recognized in its own right and in its own historical setting. Every portrayal can be defined in terms of technique, style, motif, and other conventions. These traits in their specific characters are interdependent for none can exist alone. But since the same technique can be employed for different motifs, and the same motif executed by different techniques, and in different styles, each technique, style, motif, and convention may be assigned to a different combination, hence can diffuse independently and come to occupy a different distribution than the other traits with which it is

associated in any particular portrayal. For example, the stenciled hand may inspire observers to adopt the technique and stencil a foot or an object, or to take the hand motif and express it by drawing or by carving. The custom of using two colors in a single figure may spread from an area where animals are drawn to a region where only geometric figures are shown. A silhouette may be copied as an intaglio. Pictographic and petrographic traits may influence or be influenced by the techniques, styles, and motifs associated with the decoration of persons or objects. The independent character of each trait can be appreciated only when it is viewed by itself quite apart from its integration in individual portrayals or from its particular associations in local areas.

Since the associations of any trait may differ from place to place, a distorted view of its distribution and importance may be had if it is seen in only one relationship. The question whether two separated pictographic appearances of the same motif are historically related therefore may depend on the presence of the trait in other types of art in the intermediate area. Such evidence might indicate that the pictographic examples are of incidental importance in the motif's history, although as a pictograph the motif might enjoy considerable local prominence. In a study of the emu-foot design it is immaterial whether the motif appears on rock surfaces, spearthrowers, or boomerangs, or was executed by scratching, abrading, drawing, or painting. If the technique of gluing bird-down to a surface is the subject of inquiry, it is incidental whether the motifs are naturalistic or geometric, or whether they are applied to persons, shields, or thread-crosses. If a particular myth is the point of interest, the designs associated with it are secondary. If a design is the subject of investigation, the associated myths, techniques, etc., are the incidental features. In each case, decorative art with its innumerable ramifications is not being studied as a totality. Rather a segment of a vast, complicated whole is selected for special consideration. Thus it is permissible to treat as a special topic either pictographs or petrographs, or both of them together when they share as many features as they do in Australia. But it should be kept in mind that their problems are not limited to their own appearances, but involve styles, conventions, motifs, myths, religious concepts, etc., all of which may be associated variously with other decorative arts. However, although evidence of these interrelationships may be obtainable for the historic period from ethnographical investigation, few sup-

plementary data can be expected for prehistoric pictographs and petrographs. The latter therefore must be considered for the most part in terms of themselves. As yet in Western Australia there are no specific criteria for distinguishing ancient portrayals from those of modern times. It seems not unlikely that archaeology will someday establish approximate dates for the initial appearances of the various pictographic and petrographic traits in the different parts of the continent, thus providing evidence of diffusion and rates of spread. In the meantime distributions furnish the only clues to relative age. Time is the third dimension of every distribution, but a distribution in itself does not reveal whether diffusion has been slow or rapid, or at the same speed or at different speeds in the various directions and at different times. In so far as Western Australia is concerned there can be little doubt that a minimum of several generations was required for the spread of pictographic and petrographic traits to the distributions prevailing at the beginning of the nineteenth century. Hence, it can be assumed that these arts were being practiced somewhere in the state at least as early as 1600, or possibly 1500. Granting a very slow diffusion a somewhat greater antiquity can be predicated. However, it remains for archaeology to establish a sound basis for determining the actual antiquity.

Distributions also point out the regions of dynamic developments as those which contain the concentrated appearances of many specialized and elaborated traits. On the other hand, the regions which have not been centers of artistic trends are those which show few peculiarities of their own but are included in the far-flung distributions of the basic features of the art complex.

PICTOGRAPHIC AND PETROGLYPHIC AREAS IN WESTERN AUSTRALIA

Although the evidence from Western Australia is spotty and undoubtedly represents only a small percentage of the potential number of sites in the state, the data nevertheless reveal which traits are widespread, which are concentrated in regional or areal distributions. There are various other elements still insufficiently known to determine whether they belong to localities, areas, or regions, but at least it can be stated that they are consistently not reported in many extensive regions. Thus many more data must be collected before the pictographs and petrographs of the state can be scrutinized in detail. However, the facts at hand

do point out many major and minor distributions, introduce the broader problems of historical relationships, and bring into common view the scattered evidence from other parts of the continent. For purposes of discussion it is convenient to divide the state into a number of loosely delimited areas distinguished one from another by the general presence or lack of specific features and by the relative importance in each area of those traits shared with one or more other areas. Tentatively proposed and subject to alteration when more evidence is available, particularly in the central and eastern parts of Western Australia, are seven positive areas, the Southern, Murchison, Northwest, Kimberley, Canning Route, Windulda, and South-Central areas, and one negative area, the Southwest. The temporary limits and the apparent features of each can be listed as follows:

SOUTHWEST (Coastal region and adjacent inland localities from Busselton to east of Esperance)—
Pictographs and petrographs lacking.

SOUTHERN AREA (North of "Southwest" to near Greenough River, and eastward to beyond Southern Cross)—
Petroglyphs—Reported but not confirmed. Appearances may be few and simple, some confused with natural erosions.

PICTOGRAPHS—
Stenciling almost the exclusive technique. Linear representations few and simple. Monochromes exclusively with a few insignificant exceptions.

MOTIFS—Hand dominant, white and yellow minor, a single color at a site usual. emu-foot figures, circles, etc.

LACKING—Outline drawings, surface paintings, dichromatic and polychromatic conventions, stylized geometric figures of the Murchison and Northwest areas, faunal and anthropomorphic motifs.

MURCHISON AREA (Between Greenough and Murchison Rivers and eastward to beyond Cue)—
Petroglyphs—Reported but not confirmed. Appearances may be few and simple, some confused with natural erosions.

PICTOGRAPHS—
Stenciling typical. Linear drawings more important than in Southern area, but rare. Outline drawings at a few sites.

Surface paintings rare and at few sites. Outlining of one color with another rare, dichromatic portrayals few, polychromy lacking.

Monochromes typical, red dominant, white the exclusive color at a few sites, yellow and black uncommon as monochromes.

MOTIFS—Hand dominant, the few simple figures in the Southern area are more common but not important, emu-foot design, objects stenciled at a few sites, the stylized geometric figures of the Northwest important at a few sites, faunal and anthropomorphic figures rare.

NORTHWEST (North of Murchison River, west of Broome)—
Pictographs—Apparently lacking.

PETROGRAPHS—
Simple battering, crude to delicate pecking, and abrading techniques. Linear and outline carvings. Surface representations by battering, pecking and abrading.

MOTIFS—Stylized geometric figures intensive, widespread and elaborate; faunal subjects, particularly snakes and serpentine, but various other animals, birds, and fish at some sites; anthropomorphic figures with minor localized peculiarities, many with head ornaments.

KIMBERLEY AREA (North of Kimberley Ranges)—
Petroglyphs—Only one figure reported.

PICTOGRAPHS—
Stenciled hands. Linear representations apparently minor.

MOTIFS—Outline drawings important, usually filled with either a solid color or lines to indicate secondary details.

SURFACE PAINTINGS important and quite commonly outlined. Dichromatic and polychromatic figures in red, white, yellow, black, rarely blue.

MOTIFS—Anthropomorphic figures, often if not usually with head ornaments, faunal subjects important, sunbursts, geometric figures rare.

CANNING ROUTE AREA (Poorly known, possibly from Kimberley Ranges to Murchison area)—
Pictographs—
Stenciled hands; snakes; anthropomorphic figures, some with head ornaments.

Petroglyphs—
Grooving with a pebble reported.
Anthropomorphic figures, some with head ornaments.

WINDULDA AREA (Poorly known, south of eastern Canning Route, east of South-Central area, along border of Central Australia and South Australia, apparently not south to coastal district)—
Petroglyphs—Not reported.
Pictographs—
Marked affinities with portrayals in Central Australia and northwestern South Australia.

Linear representations.
Dichromatic figures numerous (one minor example with three colors).
Outlining of one color with another.
Outline drawings rare or insignificant.
Motifs—Geometric and simple linear figures almost exclusively, faunal subjects apparently insignificant, stenciled hands and anthropomorphic figures not reported.

SOUTH-CENTRAL AREA (Poorly known, south of western Canning Route, west of Windulda area, east of Southern and Murchison areas)—
Petroglyphs—Human "foot-tracks" reported.
Pictographs—Stenciled hands; anthropomorphic figures with head ornaments.

As already stated, these areas are not intended to be rigidly delimited. The evidence is insufficient for such a purpose and furthermore as long as a culture is dynamic such boundaries cannot be fixed except for a stated moment of time. Each area shares more traits of prominence with one or more neighboring areas than it possesses by itself, although the incidence and emphasis in each may be different. In addition, each area contains various minor peculiarities in some or many of its localities, as well as eccentric portrayals at individual sites. The varying distributions indicate that new traits made their appearance at one time or another, that some subsequently attained only local prominence, whereas others spread to inter-area distributions. Over a short period of time, and particularly when viewed in a local setting, these various elements may appear to be stabilized, but the forces of change presumably are always at work, although it may be difficult to detect them except over the course of decades or generations. It is not until a trait becomes obsolete that its boundaries no longer are subject to change.

either the Windulda area or the Murchison area where they are very rare. Objects decorated with two colors seem to be common only in the northern parts of the state, including the Northwest where pictographs are lacking.

Monochromes may be everywhere in one association or another but they seem to be the exclusive convention in each type of art only in areas respectively peripheral to the use of two colors.

These differences in distribution of the number of colors associated with the decoration of rock surfaces, persons, and objects, indicate that the creative artist has been restrained by strong cultural forces which define standards of application. It cannot be doubted that there have been some local interchanges, but the distributions indicate that in much of Western Australia the features of one decorative art have not been applied to another except as the result of the diffusion of the concept that such an association is proper. The aborigines of the Southern area presumably did not consider it proper to apply to pictographs the convention of an outlining second color already associated with personal decorations. However, the distribution of dichromatic pictographs suggests that the idea was spreading southward. It also is of interest to note that in much of the continent red seems to be the prevailing color for monochromatic pictographs, white for personal decorations, although each is effective on dark walls and dark skins. On the white walls of the Murchison breakaways black and yellow would be striking, but red is the only color reported.

There also are marked differences in the distributions of basically similar techniques in their different associations. Incising and fluting of wooden objects are widespread in Western Australia, whereas the grooving of stone surfaces is not known to be common. Grinding with the stone mill is almost universal in the state, but the abrading of petroglyphs seems to be restricted to a much smaller region of undetermined extent. Stenciling has not been noticed except as a pictographic technique.

Realistic motifs are applied to a few types of object in northern areas, but rarely elsewhere, and to rock surfaces in a somewhat greater distribution. Generally speaking, the most widely distributed sacred objects are incised with geometric patterns and figures entirely different from those in pictographs and petroglyphs. The stylized longitudinal zigzag design, the most prominent motif on bullroarers and churingas in Western Australia, except in the Windulda area and other

districts bordering Central Australia, has not been noticed as a pictograph or petroglyph although it could be carved without great difficulty and drawn with ease. Nor have herringbone and interlocking key designs, important on various objects in some northern districts, been reported as murals. These motifs were contemporary with pictographs at least during the last century and each undoubtedly is still being applied today in some localities. In some if not all tribes every man must make his own sacred objects; hence the artists who apply one set of designs to the latter are the same individuals who decorate rock shelter walls in a different tradition.

Of more recent appearance in much of Western Australia is the concentric circles motif introduced from the east on the bi-convex Central Australian type of bullroarer and churinga. These objects, decorated on both faces, have been traded westward to a line running approximately from the mouth of the De Grey River to Mount Magnet, thence southeasterly to the coast at some point well east of Esperance. In 1939 these specimens and their designs were seldom recognized west and south of this boundary. How long these objects have been coming into Western Australia is unknown, but they already were widely distributed late in the nineteenth century, at which time they also were being sent into the Northern Territory, western Queensland, and South Australia. More recently they have been traded in increasing quantities north of the Kimberley Ranges. Within its now extensive distribution the concentric circles motif is employed as a pictograph only in the central portions of the continent. The appearance at Windulda, not far from the Central Australian border, presumably is a part of this distribution and the result of the diffusion of the custom of applying the design as a mural, rather than the independent transfer of a churinga motif to a pictograph.

The original concentration in the central regions of this motif on both murals and bullroarers raises as to which association was earlier. However, the recency of the westward spread of objects showing this design would seem to indicate that the few variant appearances in the petroglyphs at Yarrimuccan and Port Hedland, carved more than a century ago, and in the pictographs at Waiga Rock, of undetermined antiquity, were not inspired by these specimens. If there is a more basic relationship it is not yet apparent, but conclusions should await evidence from the Canning Route

area. It is possible that these western appearances represent crudely executed naturalistic coiled snakes and, like other faunal motifs in the region, have affinity with the realistic art of the northern regions, rather than with the geometric forms of Central Australia.

All in all, the evidence at hand indicates quite convincingly that most of the essential features in Western Australian pictographic art have been derived from a northeasterly direction. All of the techniques, styles, and conventions, as well as most classes of motifs, seem to be not only present but prominent in the Kimberley area and decrease in importance and drop out one by one to the south and southwest, until only the stenciling of hands remains as the typical appearance in the Southern area and most of the Murchison area.

The major exception is the class of geometric motifs prominent in the Northwest and Windulda areas, rare in the Murchison area, and insignificant in the Southern and Kimberley areas. It is not clear whether these motifs have spread eastward or westward, or some in one direction, some in another. The distributions of the petroglyphic techniques also remain to be determined.

The relative importance of the various pictographic and petroglyphic traits in Western Australia can be better understood if they are considered individually in their continental distributions. At present, preliminary statements can be made on the distributions of only the more general features. Even for them there may be extensive gaps, although in none are the traits involved known to be lacking. In many cases the same traits are found on both sides of the apparent gaps, and in some instances some of the traits are present in the intermediate region in other associations. Whether there are examples of independent developments of similar traits in different parts of the continent will be known in due course when more extensive distributional data are available. At the moment the similarities in many spotty distributions stand out as more significant than the variability in specific details and the gaps of uninvestigated areas.

An additional handicap which distorts the evidence for the central and eastern parts of the continent is the listing of traits by states rather than by pictographic and petroglyphic areas which have yet to be defined for most regions. The mention of a trait for a state therefore does not mean that it is typical of all districts, nor even present in some of them. Regional differences already are apparent in all states but in few cases can boundaries be delimited.

The purposes of the following summaries are to bring out the general rather than the specific distributions of the several traits, to judge the relative importance each enjoys in the various parts of its distribution, and to indicate the regions in which each is lacking. For regions represented by a fair amount of evidence it is not difficult to decide that a trait is important, or even typical. Similarly, it may be clear that a trait is lacking, or at best insignificant. However, with only meager evidence available for many regions, the decision to list a trait as important, secondary, minor, rare, or insignificant is based on arbitrary judgment. There are no statistical data and even if they were at hand there would be for example the question of evaluating single appearances of a trait at each of twenty sites in an area compared with twenty appearances at one site and none at the other nineteen.

The traits selected for discussion are limited to those detectable in descriptive literature as well as in illustrated accounts. The list includes stenciling, drawing, and painting techniques; linear, outline, and surface styles; monochromic, dichromic, and polychromic conventions; the outlining of one color with another; the showing of minor details in a second color; and faunal, anthropomorphic, and geometric classes of motifs.

WESTERN AUSTRALIAN DISTRIBUTIONS IN CONTINENTAL PERSPECTIVE

TECHNIQUES

Stenciling (Application of pigment to a surface to form a negative figure)—

Distribution—Southern, South-Central, Murchison, Canning Route, and Kimberley areas.

Not reported—Windulda area.

Continental connections—Commonly found across northern Australia and in all eastern states. Possible lack in Windulda area is consistent with its rarity or general lack in Central Australia and South Australia. Stenciling significantly is almost the exclusive technique in Victoria and in southern and western Western Australia.

Line Drawing (Application of pigment by lines)—
Distribution—Windulda, South-Central, Canning Route, and Kimberley areas (important), Murchison area (rare but prominent at a few sites), Southern area (rare to insignificant).

Continental connections—Drawn figures occupy almost the entire distribution of pictographs. They are lacking or insignificant in the peripheral southern and southwestern regions where stencils prevail.

Painting (Spreading pigments over surfaces to form positive figures)—

Distribution—Kimberley (important), Canning Route (apparently important), Murchison (rare except at a few sites), Southern area (lacking or insignificant), South-Central (?), Windulda area (possibly very rare).

Continental connections—Painting is prominent in northern regions from the Kimberley area through the Northern Territory and possibly Queensland. There is less intensity to rarity across the continent from the Murchison area through Central Australia, eastern South Australia, and New South Wales. The technique is lacking or insignificant in southern Western Australia, western South Australia, and Victoria.

Abbrading, Simple Battering, Delicate Pecking, etc.—

Distribution—Imperfectly known. All are present in the Northwest, some if not all in the Canning Route area, but unimportant, if present, in the Southern, Murchison and Kimberley areas. South-Central and Windulda areas (?).

Continental connections—Too few data for comparisons. Techniques are scattered over much of the continent, except Victoria and Southwest. Evidence at hand suggests affinities in Western Australia are east-west, rather than north-south.

STYLES

Linear Figures (Motif expressed by basic lines)—

Distribution—*Pictographs*: Windulda (important), Murchison (rare except at a few sites), Southern (rare), South-Central and Canning Route areas (?), Kimberley (minor). *Petroglyphs*: Northwest (apparently important), Elsewhere (?).

Continental connections—Presence at Windulda and in Central Australia reflects unity in a large region. Lesser importance but association with the same types of motif in Murchison pictographs and Northwest petroglyphs, and rarity in Kimberley and Southern areas, suggest east-west affinities. The emu-foot motif, usually in this class, is much more widely distributed than the other designs.

Outline Representations (Motif expressed by its outline)—

Distribution—*Pictographs*: Kimberley (important), Canning Route (present), Murchison (rare except at a few sites), Southern area (apparently lacking), Windulda area (not reported). *Petroglyphs*: Northwest (important), Canning Route

(?), Kimberley area (apparently lacking), Elsewhere (uncertain or lacking). *Earth Drawings*: Kimberley area (apparently present).

Continental connections—There is difficulty in distinguishing outline drawings from outlining, but the two are not the same. At Windulda, simple linear figures are outlined, but outline drawings are rare. Many Kimberley silhouettes are outlined, but there also are plain outline drawings. Outline drawings and outline carvings are typical of northern and eastern Australia (petroglyphs in the Northwest, pictographs in the Kimberley area, the Northern Territory, and Queensland, petroglyphs in New South Wales); seem to be less important in Central Australia (pictographs) and southeastern South Australia (petroglyphs); and are rare or lacking in Victoria, western South Australia, and southern Western Australia.

Surface Representations (Block treatment, such as silhouettes, intaglios, and simple battered surfaces)—

Distribution—*Pictographs*: Kimberley (important), Canning Route (present), Murchison (rare except at a few sites), Southern and Windulda areas (insignificant if present). *Petroglyphs*: Northwest (important), Elsewhere (?).

Continental connections—Important from the Northwest (intaglios and simple battered surfaces) to the Kimberley and Northern Territory (silhouettes usually outlined in a different color). Silhouettes seem to be less important to rare in much of Queensland, eastern New South Wales, southeastern South Australia, Central Australia, and the Murchison area; rare or lacking in Victoria, western South Australia, and southern Western Australia. The distribution of intaglios is uncertain. Surfaces can be worn down by various techniques and eroded wide carved lines may be confused with intaglios. The most impressive are the anthropomorphic figures in the Northwest. What may be a local elaboration with stress on small figures is found in western New South Wales.

CONVENTIONS

Monochromes—

Distribution—Commonly distributed but typical of Southern and Murchison areas. Red, white, yellow, infrequently black.

Continental connections—Secondary in northern regions, predominant or exclusive at most sites in New South Wales, Victoria, South Australia, and southern and western Western Australia.

Dichromatic Portrayals—Distribution—Kimberley (important), Canning Route and Windulda areas (present), Murchison (rare except at a few sites), Southern area (insignificant).

Continental connections—Important in northern Australia, rare in central latitudes, generally lacking in southernmost areas.

Polychromatic Portrayals—

Distribution—Kimberley (important), Canning Route (?), Windulda (one insignificant figure in three colors). Southern and Murchison areas (apparently lacking), South-Central area (?).

Continental connections—Three colors in a single figure are found occasionally in Central Australia, South Australia, and Queensland, within distribution of dichromatic portrayals, and may be individually fortuitous, or possibly localized conventions. The conventional use of three and four colors in one figure seems to be important only in the Kimberley area and the Northern Territory.

Outlining One Color with Another—

Distribution—Kimberley (important), Canning Route (present), Murchison (rare except at a few sites), Windulda (present), Southern area (lacking).

Continental connections—As a common use for the second color this convention is prominent in the Kimberley area and the Northern Territory, less so in Queensland and Central Australia, rare in the Murchison area, eastern South Australia and New South Wales, and apparently lacking in Victoria, western South Australia and southern Western Australia.

Secondary Details in a Different Color—

Distribution—Kimberley (important), Canning Route (?), Murchison (rare), Southern and Windulda areas (apparently lacking).

Continental connections—Facial details, body markings, etc., applied over a silhouette or directly to the rock, are important in the Kimberley area and the Northern Territory, apparently rare or uncommon in Queensland and Central Australia, and insignificant or lacking in New South Wales and all southern areas.

NOTES

Fauna (Usually snakes, kangaroos, lizards, emus; reptiles from above, birds and mammals in profile)—

Distribution—*Pictographs*: Kimberley (important), Canning Route (?), Murchison area (rare

except at a few sites), Windulda (insignificant), Southern area (lacking). *Petroglyphs*: Northwest (important at several sites).

Continental connections—Realistic faunal subjects, either as pictographs or petroglyphs, are important from the Northwest and Kimberley areas to the Northern Territory, Queensland, and New South Wales; rare in the Murchison area, Central Australia, and eastern South Australia, and apparently lacking in southern Western Australia, western South Australia, and most of Victoria. There are many local and areal elaborations.

Anthropomorphic Figures—

Distribution—*Pictographs*: Kimberley (important), Canning Route (apparently important), Murchison (rare), South-Central (present), Windulda (apparently lacking), Southern area (lacking). *Petroglyphs*: Northwest (important), Canning Route (present), Kimberley (one face reported).

Continental connections—As pictographs or petroglyphs, anthropomorphs are important from the Northwest to the Northern Territory, present in Queensland, important in New South Wales; rare in the Murchison and South-Central areas, eastern South Australia and part of Victoria, and lacking in most of Victoria, southern Western Australia, and apparently western South Australia.

Geometric Figures—

Distribution—*Pictographs*: Windulda (important), Murchison (rare except at a few sites), Canning Route (?), Kimberley (rare), Southern area (rare). *Petroglyphs*: Northwest (important), Elsewhere (?).

Continental connections—Prominent in the Northwest and Windulda areas, southern Central Australia, and South Australia, and apparently rare in southern Western Australia, the Kimberley area, the Northern Territory, Queensland, New South Wales, and Victoria.

CONCLUSIONS

Whatever the problems in distributional details in other parts of the continent, the evidence nevertheless indicates that the pictographs and petroglyphs of Western Australia belong to an art tradition of continental proportions, and in general occupy a position peripheral to the regions of intensive development. All the important techniques, styles, conventions, and classes of motifs are represented in Western Australia, but their distributions vary in extent. Of the traits of general northern prominence some do not appear west of the Kim-

berley area, others extend to the Northwest, some to the Murchison area, few to the Southern area. Other traits occupy a different pattern of distribution with appearances in the Northwest and Windulda areas, Central Australia, and South Australia.

The evidence also indicates that the Murchison, Southern, and Windulda areas are not the centers of any prominent developments. There are local sites outstanding in number and quality of the portrayals, or in some unusual exhibit, but generally speaking these marginal areas reflect in relatively simple fashion the characteristics of neighboring areas to their north, northeast and east. In the rarity or lack of northern traits these peripheral areas in Western Australia are comparable with western South Australia and Victoria.

Too little is known of the Northwest to assert that its special features are of other than areal importance. There are technical achievements of relatively high quality, diversity in motifs, and an abundance of sites, but the basic styles and motifs seem to be essentially the same as in neighboring areas. Either they are important across northern Australia and rare or lacking in southern Australia, or they have affinities in the central regions of the continent and are rare or lacking in northern, eastern, southeastern, and southwestern areas. Whether any of these widespread traits originated in the Northwest cannot be determined from the facts at hand. However, if the Northwest is a peripheral area it nevertheless is the center of several elaborations of areal and possibly regional importance. Investigation of the Canning Route area should throw important light on this question.

The Kimberley area is the outstanding pictographic area in Western Australia. The exhibits are complex, the peculiar wondjinas striking, the use of colors elaborate, the sites numerous. However, this area is at the western end of a large region in which polychromy and diversity in various types of art are stressed, and in which there are other local and areal appearances of anthropomorphic forms. These specific and general relationships between the Kimberley area and the Northern Territory remain to be determined. Of the traits which spread southwestward through the Canning Route area, it is not clear whether some emanated from the Kimberley area or came directly or indirectly from the Northern Territory.

In so far as the continental situation is concerned, the east-west traits, or more properly the

southeast-northwest traits, are the more difficult to classify on the basis of present evidence. Typical among the predominantly geometric and linear motifs are a wide range of arc-forms, circles with secondary features, "rakes," mazes, etc. Their chronological relationships with traits moving southward in the various regions presumably are extremely varied and complex. These crossing distributions should provide many interesting problems when more data are available.

The distributions of the traits of northern prominence are less confused but by no means clear. There are various local and areal elaborations of specific features in regions other than the north, for example, the large outline carvings of faunal and anthropomorphic subjects in eastern New South Wales, and the stenciling of objects in the western Murchison area and in eastern New South Wales. But generally speaking, complexity resulting from the varying combinations of such elements as drawing and painting techniques, outline and surface representations, the use of two or more colors in the same figure, the outlining of one color with another, the showing of secondary details in a different color, and faunal and anthropomorphic subjects realistically expressed, is typical in northern Australia. Further to the south some special feature may be intensified or diversified, or a few elements integrated into a distinctive areal pattern, but the combinations are not characterized by the same degree of complexity found in the north.

It is important to note that the distributions of the several traits of northern prominence are not identical but conform to the same general pattern. Each is prominent across northern Australia from either the Northwest or Kimberley area to either the Northern Territory or Queensland, loses its importance toward the south, and is either lacking or insignificant in the southernmost regions.

Some traits, such as polychromy, have not been reported very far to the south, although there are a few appearances of three colors in single figures in Central Australia, South Australia, and Queensland. Dichromatic portrayals are present as far south as New South Wales, southeastern South Australia, and the Windulda and Murchison areas, but in most of these regions they seem to be quite minor in importance. In the extreme southeastern and southwestern portions of the continent monochromes are the only convention.

Some traits extend further south on the east and west than in the central regions. The stenciling technique and the hand motif in red are typical

in Victoria and southern Western Australia. sites, the few exceptions being minor in importance. Their antiquity in these regions is unknown, but the evidence does not suggest that they are ancient.

The drawing or carving of linear figures, particularly the emu-foot motif, may be almost as widespread as stenciled hands, but these techniques are lacking at most southeastern and southwestern with another, and faunal and anthropomorphic

TABLE 1
RELATIVE IMPORTANCE OF VARIOUS PICTOGRAPHIC AND PETROGLYPHIC TRAITS

	Typical to important	Minor to rare	Insignificant to lacking
Stenciling	Much of continent except in areas where other techniques are greatly elaborated. Almost the exclusive technique in southern Western Australia and Victoria.	Minor to rare	Peripheral areas such as the extreme Southwest, the Northwest, and most of South Australia and southern Central Australia.
Drawing	Most of continent.	Some sites in southern and western Western Australia.	Southern and western Western Australia, most of Victoria.
Outline representations	Northwest to Queensland and southward to New South Wales.	Murchison area, Central Australia, southeastern South Australia.	Southern and western Western Australia, western South Australia, Victoria.
Surface representations	Northwest to Northern Territory.	Murchison area, Central Australia, southeastern South Australia, New South Wales, Queensland (?).	Southern Western Australia, western South Australia, Victoria.
Polychromy	Four colors—Kimberley area and Northern Territory.	Three colors—scattered in Central Australia and Queensland.	All of continent other than noted.
Dichromatic portrayals	Kimberley area to Queensland, Windulda area, Central Australia.	Murchison area, southeastern South Australia, New South Wales.	Southwestern Western Australia, western South Australia, Victoria.
Secondary details in a different color	Kimberley and western Northern Territory.	Scattered in Murchison area, Central Australia, Queensland.	Southern and northwestern Western Australia, South Australia, Victoria, New South Wales.
Outlining one color with another	Kimberley and Canning Route areas to Queensland, Central Australia, Windulda area.	Murchison area, southeastern South Australia.	Southern and northwestern Western Australia, western South Australia, Victoria, New South Wales.
Faunal motifs	Northwest to Queensland and New South Wales.	Murchison area, Central Australia, southeastern South Australia.	Southern Western Australia, western South Australia, Victoria.
Anthropomorphic figures	Northwest to Queensland and New South Wales.	Murchison area, Central Australia, southeastern South Australia.	Southern Western Australia, western South Australia, Victoria.
Geometric figures	Northwest, Windulda area, Central Australia, western, central and southeastern South Australia.	Murchison area, New South Wales.	Southwestern, southeastern, eastern and northern Australia.

motifs are found as far south as southeastern South Australia, but with minor exceptions are lacking south of the Murchison area on the west and New South Wales on the east. Most of these traits are not of great importance in either the Murchison area or New South Wales. It seems historically noteworthy that so many appear together in southeastern South Australia where they also are minor or insignificant.

A tentative classification of the degree of importance of the various traits of northern prominence in the central and southern latitudes is shown in table 1. Since the distinctions between important and minor, minor and rare, rare and insignificant, would be arbitrary even if abundant evidence were available, it should be recognized that the listings are based on subjective evaluations of the data now at hand. However, it would seem that the shifting of any area from one column to another would not materially alter the fairly obvious indication that these traits are prominent in the north, diminish in importance to the south, are insignificant in the southernmost areas of appearance of each, and are lacking in the extreme southeastern and southwestern portions of the continent. The details of the chart undoubtedly will require considerable revision when pictographic and petrographic areas are defined for all parts of the continent.

Whether any of the widespread features of Australian pictographs and petroglyphs are of foreign derivation is not indicated by the facts at hand. Nor is a hypothesis of overseas origin required to explain the general character of these arts in the continent. The techniques, styles, conventions, and types of motifs are simple in their fundamentals and the various peculiarities in areal and regional distributions are elaborations of them. However, since so many of the widespread traits seem to have diffused from north to south, and almost none in the opposite direction, and since the few appearances which do not conform with the basic traditions of the continent, such as the Bradshaw paintings and some of the pictographic types in the Northern Territory, also are found only in the north, the possibility should be recognized that some traits may have come from New Guinea or the East Indies. This is a question for future research. The Australian evidence can only pose the problem. The solution depends on finding the same traits overseas under conditions which establish or imply a greater antiquity than their oldest occurrences in Australia. The importance of Western Australian evidence for such

a problem has been indicated. The data at hand show that most of the essentials in the pictographic and petrographic traditions south of the Murchison River, if not south of the Gascoyne River, have diffused from the northeast, with the Northern Territory as the major source, the Kimberley area possibly as a minor source. A few seem to have been spreading westward from Central Australia in recent times. In an earlier period others may have come from either Central Australia or the Northwest. There is the possibility therefore that some features of continental importance came from Western Australia, and that some traits associated with petroglyphs in the Northwest and others associated with pictographs in the Kimberley area were introduced from the islands. However, the evidence from other parts of the continent would seem to indicate that with the possible exception of some east-west traits art influences which may have come to Western Australia from overseas have not been of major importance in the development of the basic pictographic and petrographic tradition of the continent.

▲ PETROGLYPHIC SITES ▲

1. York.
A single circular figure reported in 1827, was not confirmed by a visit to the only site known to local residents. (See ● 1.)
2. Gin Gin area (north of Perth).
Rumor of "marks" on stone. Details and location not available.
3. Murchison District (location not specified but described as "not-distant").
Portrayals listed as a human foot and other "marks" worn into the rock by repeated rubbings with a pebble (Mathews, 1897: 180).
4. Bugadji Rock or Soak (Hampton Plains, between Kurnalpie and Igidina).
Two human "foot tracks" reported on vertical face of rock. May be carvings or the freak results of natural erosion.
5. Meekatharra (unspecified location on road to Mungara).
Seen in 1893 by Mr. May, a surveyor. No details recalled. Identity as carvings uncertain.
6. Biringarra (location not specified. Site where road passes through hills).
Identity of appearances as carvings uncertain.
7. Meeberrie (on Murchison River, 130 miles north of Mutlewa).
Snake, emu, dingo, and kangaroo tracks reported. Not conclusively confirmed as carvings.

8. Yalgoo Rock (south of Waiga Rock along rabbit-proof fence).
"Chipped" figures like horse-shoes reported. (See also ● 20.)

9. Laverton-Warburton Range route (location not specified).
"Carvings" (?) reported.

10. Gifford Creek Station (Lyons River).

A. Yiniwara (a rock hole about 20 miles west of homestead).

On surrounding rocks are many motifs in outline including the emu foot, arc or bow-shaped figures of three or four parallel lines which converge into rounded extremities, "rakes," dotted circles, circles joined by a line to a dotted circle, concentric arcs, long meanders-like snake tracks, some with single lines or the points of "emu-tracks" connected, and long meanders from which multiple closely spaced short lines emanate at right angles to suggest a centipede (figs. 17, 23).

B. Tadangara.

Figures similar to those at Yiniwara.

11. Minnie Creek Station (Lyons River).
A large outcrop, known as Waragnemulga, about 20 miles south of homestead. There are two sites about 1½ miles apart. Figures are generally similar to those at Gifford Creek (▲ 10). Outstanding is the complicated "plan" (fig. 12).

12. Mount Sandiman Station (Lyons River).
Several appearances said to be similar to those at Gifford and Minnie Creeks (▲ 10, 11).

13. Williambury Station (west of Lyons River, northeast of Carnarvon).

Site about one mile from homestead on walls of a fairly deep gully, at foot of a series of three water-holes. Two sets of indistinct figures chipped or pecked in sandstone cover about 40 square feet. One figure quite definitely represents some sort of lizard. Others appear to be anthropomorphic. Some meandering lines suggest snakes or their tracks (fig. 24). Information, Mr. W. H. Brush.

14. Maroona Station (north of Williambury Station).
A large single rock alongside track to Towera is said to contain several carved figures.

15. Lyndon Station (Lyndon River, northeast of Carnarvon).

Carvings reported on flat rocks.

16. Uaroo Station (south of Ashburton River, 75 miles from mouth).

Figures reported as carvings.

17. Northwest Cape.

Carvings reported 10 miles south of homestead, at Yardi Creek, 2½ miles from mouth, north side of creek behind high pinnacles, on wall of 100-foot cliffs.

18. Coastal site south of Carnarvon (location not specified).

Report of a series of human "footprints" in stone.
19. Hardey Junction (Ashburton River, 135 miles from mouth).
Carvings reported.

20. Lower Fortesque River (30 miles from mouth, east of Mount Nicholson).
Carvings of men, kangaroos, and spears reported.

21. Pyramid Station (north of Fortesque River, south of Roebourne).
Carvings reported.

22. Hooley River branches (130 miles up Fortesque River).
Carvings of brush kangaroos and opossum reported.

23. Mulga Downs (14 miles north of homestead at a site called Yandikigina).
Carvings specified.

24. Depuch Island (coast, 60 miles west of Port Hedland).

Descriptions of these carvings of intaglio type were first published over a century ago by Wickham, and Stokes (2: 170-173). Their sketches indicate various naturalistic renderings of fish, kangaroos, dogs, crabs, insects, birds, human figures, and emu tracks. There also are "rake" motifs, one of which seems to enclose an anthropomorphic figure and was interpreted as a hut. A composition, unusual in petroglyphs in the west, shows a large oval with numerous diametrical lines and aborigines dancing along the circumference. See also Smyth 1: 292; Mathew: 42; Mathews, 1895: 270; Davidson, 1936: 64.

25. Port Hedland and Cod Farm Island.
These petroglyphs differ from those at Depuch Island (▲ 24) in that they are of outline type with grooved or dotted lines. However, the motifs are similar to those found generally in both carvings and paintings, except that the portrayals are so numerous that there is considerable variability and a wide range of subject matter. The figures include fish, turtles, humans, anthropomorphic figures, some apparently with headaddresses, emu-tracks, spears, boomerangs, shields, "floral" designs, etc. (figs. 10, 11, 19-22). Campbell (1911: 102-103) figured and interpreted some portrayals as hooks and lines, but scrutiny of the extensive site did not reveal them to the author. Ethnological data suggest that Port Hedland is rather far west for fish-hooks unless the carvings are more recent than other evidence indicates. It is understood that the Frankfurt Expedition made a detailed study of this site in 1938.

26. Kerr's Station (50 miles south of Port Hedland).
Carvings reported.

27. Hillside Station (Shaw River, 110 miles southeast of Port Hedland).

Several sites reported at Dale Gorge and Yempire Gorge. There also is a site called Kurgaruna. Carvings are specified at all sites.

28. Pilja Station (North of Hillside).
Portrayals are described as carved.

29. Split Rock Station (northeast of Hillside Station).
Carvings reported.

30. Cooapooye Station (Roebourne Area).
Numerous human and anthropomorphic figures predominate. The photograph (fig. 4), taken in 1902 by W. B. Sanders, was kindly provided by Mr. C. P. Mountford. Although the portrayals are described as "drawings" the photograph reveals the same technical features found in other petroglyphic sites in this region. Pictographic sites are not reported within several hundred miles of this site.

31. Mount Edgar Station (about 100 miles southeast of De Grey River mouth).

Anthropomorphic figures, some of large human size, are the features (fig. 4). See text. A few arc-like forms also are present. The figures vary from well executed shallow intaglios to crudely battered surfaces.

32. Balmoral Station (east of lower Fortesque River).
Carvings reported.

33. Between Yarri and Muccan Stations (about 70 miles up De Grey River).

On a group of large boulders to west of road (fig. 2) are various sets of three to four parallel meandering lines. One figure of "sun-burst" type contains concentric circles and raises the question of classification (figs. 3, 23).

34. Nimmingarra Station (north of De Grey River, about 60 miles from mouth).
Carvings reported.

35. The 767 mile location along the rabbit-proof fence (one mile to east).

Snake, turkey and emu tracks on granite rock 15 to 20 feet high, 100 feet in length (information from Mr. Thomas Driscoll).

36. Nichol Springs (about 40 miles from Milgun, on upper Gascoyne River).
Carvings specified.

37. Ophthalimia Range Gap (headwaters of Fortesque River).
Carvings reported.

38. Anna Plains Station (coast, south of Broome, 50 miles south of homestead).
Geometric figures in small rock shelter in hill. Information from Mrs. Mellon.

39. Lower Glenelg River (Kimberley District).

An intaglio of a face was reported by Grey (2: 205) in 1838 but his sketch is of questionable accuracy since the profile of a European is shown. The Frankfurt Expedition in 1938 made a diligent but unsuccessful attempt to locate the site. Carvings have not been reported elsewhere in the rough Kimberley country where sites suitable for carvings are unlimited.

40. Gordon Downs Station (about 150 miles southeast of Moola Boola).

A. Palm Springs. Outlines of snakes and men with waning headaddresses.

B. Lewis Creek. Portrayals not recalled.

C. Slaty Creek. Portrayals not recalled.

At all three sites the portrayals, according to a Djaru informant, were made by rubbing grooves with a stone into the rock surface and were devoid of pigments.

41. Canning Stock Route, Rock Hole 18.

A Djaru informant reported carvings at this location and elsewhere but the specific details were not remembered. He distinguished the carvings from the paintings seen along the route (see ● 32).

● PICTOGRAPHIC SITES

1. York (Clifton Farm, 6 miles south on Beverley Road).

Two stenciled hands in red. One or possibly two painted hands in red. A large oval (12 × 18 in.) in dirty yellow, enclosing an irregular grillwork, either applied to a red background or with the rectangular spaces subsequently filled with red. Presumably these figures, now very faint, were executed well over a century ago. There are many defacements by Europeans. Moore, 25, may have visited this site about 1837. In 1849 the aborigines professed ignorance of the portrayals (Smyth 2: 222).

2. Beverley (south of York).

Location is uncertain and site could not be found. Possibly it is confused with the one near York but this could not be the case if only stenciled hands are present, as reported. The paintings may have become entirely obliterated.

3. Kellerberrin (Leake Farm, about 4 miles to northeast).

Site A. About ¼ mile south of homestead, 50 yards east of road. Of a cluster of huge boulders one gives the suggestion of a whale with open mouth. On the roof of this cavity are many red stenciled hands.

Site B. About ½ mile further south. On the under side of great boulders strewn over a large granite hill are red stenciled hands and "emu foot" patterns drawn in white.

4. Warrachuppin Rock (about 85 miles northeast of Kellerberrin).
Seventeen red stenciled hands on under surface of giant boulder on west side of rock.

5. Hyden Rock (about 2½ miles east of Hyden).
Red stenciled hands and suggestion of a circle (6 in. in diameter) in white on under surface of outermost boulder of a cluster near western end of northern side of rock. Additional red stenciled hands on underside of nearby boulder.

6. Camel Peak (about 12 miles northwest of Hyden).
Red stenciled hands and a red "rake" with five "lines" appear in rock shelter on eastern side of rock.
7. The Humps (about 12 miles east of north of Hyden).

On eastern side of this great granite hill is a fairly extensive cave about 40 feet in depth to rear exit. The paintings include a red "rake" and "hairpin-shaped" figure, two purplish-red concentric arcs, and a group of three light brownish-red intersecting lines, all on wall to right of entrance. On the remainder of the walls and ceiling is a most impressive array of hands, many of which must have been applied from scaffolding or by the artist standing on the shoulders of another person. Altogether 143 hands can be distinguished and there are traces of many others, now all but obliterated. Stenciled and stamped or drawn hands can be classified as follows:

Red	28	Lefts	27	Rights	31	Uncertain
White	4	Lefts	6	Rights	4	Uncertain
Yellow	—	—	—	—	—	—
White filled with red	3	Lefts	1	Right	—	—

Stamped or Drawn Hands	—
Red	12
White	2
Lefts	13
Right	8
Uncertain	—

8. Bald Rock (about 50 miles northeast of Hyden on eastern side of rabbit-proof fence).
At northeast end of rock is a small shelter under a large single boulder. On outer wall to left of entrance is a peculiar drawing in red which resembles the figure "4." The ceiling is covered with the strange arrangement of red lines illustrated in figure 12.

9. Mandula (about 15 miles south of Kurnalpi, near Yindji).
Stenciled red hands reported.

10. Igidina (near Malgate, Menzies district).
No details. Stenciled hands reported.

11. Red Castle (near Mount Markham, 40 miles southwest of Laverton).
Paintings described as natives with dress and "Bell-topper" hats.

Red stenciled hands reported.

13. Greenough River (Sandspring homestead, 23 miles east of Geraldton).

As described by Campbell (1914A), figures in this rockshelter include white stencils of a pair of woman's hands, a man's right hand, left hand, and pair of hands with thumbs touching, a tobacco pipe, a spear-thrower, two egg-like figures, and two circular marks. Presumably the sex was deduced on basis of relative size. It is stated that all the figures were applied in the same manner, i.e. by stenciling. This raises the interesting question of the identity of the egg-like figures and the circular marks. Elsewhere not dissimilar figures are drawn, not stenciled.

14. Appertara (6 miles northeast of Northampton).
As reported by Campbell (1914B) this rock shelter was decorated by white stencils of twelve left hands, three spearthrowers, and two sticks. In what appears to be the same shelter (Hoskins Farm) (fig. 1), the author in 1939 found the stencils of the hands and of one figure suggestive of a spearthrower (2 ft., 2 in. × 3 in. at middle), and what had not been reported before, a drawn red arc, a red circle, and a circular white spot outlined in red. It is possible that some figures have been eroded away and that others have been added since 1911. However, Northampton is one of the oldest settlements in Western Australia and the few half-caste families in the neighborhood presumably have not been interested in pictographs in recent generations.

15. Willow Gully (about 11 miles west of Northampton on north bank of Bowes River, 1½ miles from mouth).
Two groups of paintings are found at this site, one in a small cave, the other in a rock shelter. Both were visited by Campbell who published a description in 1911.

A. In the cave are several stenciled hands in white (nine lefts and one right) and a number of drawn figures, some of which were not mentioned by Campbell. The portrayals include a vertical red line, a series of twelve, and two groups of five, parallel vertical white lines (rakes), a red stenciled boomerang applied over a black emu foot, two white circular spots connected by a white line (3 ft., 2 in. in length), and an emu foot and leg (?) in white. Other figures to be noted are Campbell's "bifurcated figure" (applied over a vertical red line) and a seven foot painting of a large snake, both in solid white, outlined in black. Near the head a large white spot, also with a black outline, overlies a horizontal line which in turn is overlaid by part of the serpent (fig. 9). Another horizontal line in orange-red also is partly covered. There are several arcs in red, one over a red

stenciled hand from the palm of which a red line emanates.

B. In the rock shelter the portrayals are more numerous and are concentrated in a single display on the back wall. Since many of the figures not mentioned by Campbell can be detected in his photograph, it seems fair to assume that there have been few if any additions since his visit.

The most common motif is the white stenciled hand. Although some portrayals are barely discernible there are at least twenty rights, twenty-five lefts, and ten which are uncertain. An interesting feature of four of these hands is the coloring of the finger tips in red. Other figures include seven white stenciled boomerangs, a drawn right human foot, twelve red emu-feet, a number of varying "rakes," two oval figures consisting of innumerable finger daubs in white, a "dumbbell" pattern, a small serpentine figure, a red circle, a solid red oval, a small red anthropomorphic (?) figure, a variety of long lines in red or white, and a few non-descript figures.

16. North of Yalgoo (8 miles north of town, 1½ miles east of road—on northeastern side of north-eastmost breakaway).
Red stenciled hands, some smeared, others very faint. They make a very effective appearance on the white walls. Several sites with red stenciled hands are reported for this area.

17. Nannutharra (Yalgoo area, 6 miles east of Wagga-wagga, 3 miles north of road).

Red stenciled left hands on undercut surfaces on eastern and southern sides of the two granite hills. Similar appearances are said to have been discernible formerly on southeastern side but have completely disappeared. On eastern side also are red stencils of a foot and two boomerangs, and three "rakes" in white.

18. Lemonville (near Mount Magnet).

Red stenciled hands.

19. Dalgaranger Station (north of Yalgoo).

A. (7 miles northeast of homestead).

Numerous red stenciled hands in several small shelters in breakaway.

B. (6 miles north of homestead, 200 yards east of rabbit-proof fence).

Complex grillwork and a snake, both in white, on undercut surface of a granite rock (fig. 1).

C. (Breakaway, one mile southeast of homestead).
Numerous red stenciled hands.

20. Yalgoo Rock (reported south of Yalgoo Rock along rabbit-proof fence).

Red stenciled hands (see also ▲ 8).

21. Walga Rock (about 30 miles west of Cue).

The paintings at this site comprise without doubt one of the most extensive galleries so far reported in Australia. For over 200 feet the back wall of a

gigantic niche (fig. 1) is almost contiguously covered with a great array of drawings many of which are now exceedingly faint. To catalogue adequately all of the details would be a task of many weeks field study, yet in respect to details the variety of motifs is not great but conforms with the types of portrayals which prevail elsewhere in Western Australia and in some respects with those in Central Australia (figs. 8, 13-16).

In addition to red stenciled hands are a number of drawn hands, several characterized by seven fingers. There are many serpent-like figures consisting of single or multiple (usually three or four) parallel meandering or wavy lines, or of lines which curl into spirals, or lead into circles or circular spots in solid color. Some figures give the illusion of being concentric circles but close examination demonstrates very definitely that this motif, as usually understood in Central Australia, is lacking. There also are a number of arcs or U-shaped figures in outline, singly or back to back. Most animal figures are those of lizards in silhouette, some several feet in length, and placed so high that to depict them some sort of scaffolding must have been employed. A number of emu feet also are present. One simple anthropomorphic figure is shown.

A large percentage of the portrayals cannot be classified. For the most part they consist of series of parallel lines, often of alternating contiguous colors, arranged to meet or intersect other lines at various angles. In many instances superimposed figures complicate the problem of discerning individual patterns. These complex arrangements are reminiscent of some of the portrayals in Central Australia but differ in specific details.

22. Yarraquin (4 miles east of Cue).

Red stenciled hands in kaolin breakaways 4 to 5 miles northeast of homestead, and drawings in red of emu feet and a crude kangaroo in outline.

23. Tching Rocks (about 125 miles north of Yalgoo).
Red stenciled hands.

24. Milly-milly Station (on Murchison River, about 160 miles north of Yalgoo).

Red stenciled hands. Location not specified. Kitchi-kitchi, an old aborigine, told Mr. L. F. Ryan of Cue that the small hands were those of seven-year-old girls taken to the site at time of betrothal. The prospective husband establishes his claim by placing the girl's hand on the wall and spitting over it a mixture of red ochre and the girl's urine. Hands of adult size were stenciled by anyone.

25. Meeberrie (130 miles north of Mullewa, on Murchison River).

Location of site not specified, paintings not confirmed. Report of snake, emu, dingoo, and kangaroo tracks, possibly carved in stone.

26. Murgoo (60 miles north of Mullewa). Location of site not specified. Undescribed "paintings" reported.
27. Bates Range (about 110 miles northwest of Laverton). Numerous black stenciled hands in rock shelter reported by Mr. A. J. Bussel who visited site about 1890. This is the only report of black for such a purpose.
28. East of Wiluna (possibly 100 miles to east). Paintings are said to have been seen by police in 1939 but details were not given.
29. North of Wandary Pool, Murchison River (25-30 miles north on Stock Route). A site is reported where a large rock to west of track is surrounded by a large clump of wattles. No details available.
30. Biringarra (120 miles northwest of Cue). Ambiguous information, uncertain whether portrayals on ironstone hills on both sides of track are paintings or carvings.
31. Windulda, Warburton Ranges. These paintings, described by Mountford, are the easternmost reported to date for southern Western Australia and the first examples recorded along the margin of an extremely large and virtually unknown desert portion of the continent. The motifs, predominantly geometrical, include the plain circle, with and without an appendage, the barred circle (with an appendage), various groups of unevenly spaced parallel lines, wallaby and kangaroo tracks, arcs, "rakes," concentric circles, loops, and odd figures. The only naturalistic portrayal apparently represents a lizard but is quite weathered. The general features of the art at this site resemble the appearances in Central Australian more than those further to the west.
- NORTHERN REGION
- In the northern portions of Western Australia paintings have not been confirmed west of approximately 123°E. East of this line the only information available for the desert country south of 20°S. is that paintings have been reported along the Canning Route.
32. Canning Stock Route. Several sites were seen by a Djaru informant in the employ of a drover but the locations were not recalled. The portrayals include red stenciled hands, snakes, and the figure of a "man" with head, nose, mouth, "waning" headdress, but without a body (see ▲ 41).
- SITES SOUTH OF THE KIMBERLEY RANGES
- For the area north of the eastern half of the Canning Route several sites can be listed but little information is available.
33. Mount Anderson Station (lower Fitzroy River, 3 miles west of homestead). Paintings of snakes in a rock shelter said to be inhabited by several rock pythons.
34. Go Go Station. Paintings sites reported.
35. Fitzroy Crossing (about 14 miles from). Paintings specified.
36. Christmas Creek Station (west of Christmas Creek). A large rock shelter in the George Range is said to contain paintings.
37. Noonkumbah Station (about 7 miles east of homestead, north of Fitzroy River). Paintings reported at Skeleton Hill.
38. Napier Range (Barber River). An anthropomorphic portrayal is shown in figure 18. Information from Dr. C. Teichert.
39. Moola Boola Station (1 mile south of homestead). Present in a rock shelter are snakes in black or white with red outlines, solid black conventionalized human and lizard-like forms, some with white or red outlines (fig. 18).
- SITES NORTH OF THE KIMBERLEY RANGES
- For the northern Kimberley district two types of painting sites can be distinguished, those which contain the famous wondjina portrayals and those which lack them. The latter, widely scattered, apparently are present in the wondjina area, but have received little attention. They include:
40. Feint Island. Portrayals not specified (Mathew: 42).
41. Perry Island. Paintings of crocodiles, turtles, snake-like and grub-like forms, and a human figure said to resemble a sailor or pearler with a hat, have been reported (Bassett-Smith: 330).
42. McLeod River. Various portrayals have been reported (Worsnop: 26).
43. Forrest River. Snakes, emu-tracks and other portrayals reported (Basedow, pl. 44; Davidson, 1936: 122, fig. 55).
44. Forrest and Lyne Rivers. Two sites in this locality have been noted by Kaberry (1934: 431; 1936, figs. A, B). Paintings of spirits of dead and of totems in Umbilgari country include a crocodile, an anthropomorphic figure and the rainbow serpent, the retouching of which is associated with food increase rites. Some
- of the paintings are in red with white outlines. The site is not taboo to women.
- b. Wunda. This site, apparently similar in significance to Jandangi, shows a human-like portrayal of a spirit-child.
45. Upper Forrest River. Red and white paintings reported (Conigrave: 83).
46. King George River. Paintings of crocodiles and various animals (Conigrave: 116).
- WONDJINA SITES
- The rock paintings in the western Kimberley area have become famous as the result of the wondjina motif first noted by Grey in 1838. The wondjina portrayals are highly stylized representations of mythological beings, often shown as a bust and head with a mouthless face. Wondjinas are responsible for the perpetuation of rain, lightning, rainbows, succession of wet and dry seasons, and the increase of animals, wild plants, and humans. There has been considerable speculation about the accuracy of Grey's sketch. That they contain many distortions is now known for his sites were reformed and photographed in 1947, after an interval of one hundred and nine years. In 1938 the Frankfort Expedition made a detailed study of various wondjina sites (see Grey: 1: 202-204, 214; Mathew: Bradshaw; Easton; Love, 35 et seq.; Elkin, 1930, 1948; Davidson, 1936: 124-132; Broderick, pls. 52-56).
- The wondjina paintings have attracted so much interest that little attention has been given to other motifs present in many of the galleries. These include stenciled hands, naturalistic paintings of various animals, reptiles and fish, and such geometric forms as circles with many radiating lines, said by the aborigines to represent the sun.
- The most important wondjina locations, some containing a number of sites, include:
47. Port George IV.
48. Gleneld River.
49. Prince Regent River.
50. Wolcott River.
51. Munja Station (7 miles east of).
52. Bindjibi (18 miles from head of Walcott Inlet).
53. Mount Barnett.
54. Forty miles east of Prince Frederick Harbour.
55. Admiralty Gulf (eastern shore).
56. Gibson Creek (near Sale River).
57. Calder River.
58. Bachsten Creek.
59. Mount Hahn.

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