Plant motifs in Kimberley rock-art, Australia

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Abstract
Flowers, leaves, stems, branches, fruit, vines, inflorescence, roots and tubers are all depicted in the rock-art of the Kimberley region, Australia. The ecological knowledge of Aboriginal people with regard to plant usage for food, housing, utensils, weapons, string-making and ceremonial regalia is enormous, and some of this knowledge is reflected in rock-art. Sometimes plant features are combined with human and animal forms to represent mythological figures.

1 Introduction
Plant motifs in the rock-art of the Kimberley region of north Western Australia illustrate the relationships between people and plants in at least four ways. First, the very existence of many plant motifs reflects their importance as a food and raw material source. Secondly, some plant motifs are identified by local Aborigines as having specific mythological significance by being part of creation stories or being depicted for increase rituals. Thirdly, some rock-paintings show groups of human and plant motifs combined, such as examples of plants painted with human hands. Lastly, ‘plant people’ in the rock-art reflect the close association between the origins of humans and plants in the minds of the rock-artists.

The Kimberley region (figure 1) has a varied landscape, with the southern regions adjoining the Great Sandy Desert, the central regions including limestone, basalt, and sandstone ranges and gorges, and the northern and coastal regions having large tidal rivers and estuaries with muddy mangrove flats. The northern part is mostly savannah woodland with pockets of rainforest along rivers and gorges. The climate is tropical with alternating wet and dry seasons. To local Aborigines, plants provided the raw materials for making tools such as handles for axes and adzes, weapons such as spears, spear throwers, shields, clubs and boomerangs, and musical instruments such as didjeridoos and clapsticks. Barks were used for shelters and carrying vessels, plant and tree resins were used for binding and sealing, and string was made from bark and root fibres. Some ground vegetables can be eaten raw, while most are cooked, usually in a ground oven of hot coals and stones, in order to destroy toxins or to make them more palatable. In just one region of the northern Kimberley, Crawford (1982:1) identified Aboriginal use and knowledge of 47 species of root crops, 49 species of edible seeds and fruits, 11 species of medicinal plants, six species used to poison fish and 24 species used to make implements. This situation is similar across northern Australia (eg, Levitt 1981).

2 Plants in Kimberley rock-art
I have recorded over 1000 rock-art shelters in the Kimberley region of northern Australia, and estimate the total number of shelters to be in the region of

Figure 1 Location of research area
50,000 to 500,000. Plant forms are seen in about 10 per cent of Kimberley rock-art shelters. These are mostly in the form of yams or root and tuberous vegetables – all important food sources for the Aborigines. The following discussion illustrates plant motifs in Kimberley rock-art and their relationship with Aboriginal ecological knowledge.

In understanding plant motifs in Australian rock-art, it is important to realise the difficulties both local Aborigines and rock-art researchers can have in interpreting some motifs. This is true of any interpretation of art where one does not have the original artist available for comment. While some motifs show natural features recognisable as certain species, other motifs have stylised forms preventing species-specific recognition. Some motifs, such as meandering lines, avoid shapes and certain branching objects sometimes cannot be interpreted with certainty even as to whether they represent plants. Some of these forms may represent ceremonial objects or strings incorporating plants or mythical plants. Both Aborigines and researchers alike find it difficult to interpret some images created hundreds or thousands of years ago by different individuals who may have had their own ‘styles’ and idea of what and how certain objects were painted or drawn. The result is that, in some cases, there are several possible interpretations or explanations for a motif, based on the information I have gained from Aboriginal elders from five different Kimberley communities, other northern Australian communities, and from other rock-art experts and botanists. The Aboriginal names given are from four different language groups, the Ngarinyin, Wunambal, Worrora and Gwini. Often a plant name is shared by more than one group. Where alternative spellings have already appeared in the published literature, I have included these spellings. In writing Aboriginal sounds, ‘g’ and ‘k’ are often interchangeable, and account for some of these alternatives.

In many examples, it is the cultural knowledge of local Aborigines that allows identification. For example, when a rock-art image cluster refers to a particular creation story, plants specific to that story are depicted. Figure 2 shows stylised branching motifs at an isolated site on the Moran River. It is not possible from this image to determine exactly the intention of the artist(s). For example, the motif painted across the top of the image cluster may represent part of a large snake. One Aboriginal elder from the Gwini language group interpreted this as mar (Nauclea coadunatus), a tall tree that grows beside river banks. This is not a bush food, but the wood is used to make canoes, and the emu, a large Australian flightless

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Figure 2 Tree motif rock-paintings, darkish red-brown, 1 m high
bird, eats the foliage. However, at the important Wanalirri site in the Kimberley, a similar plant motif represents the Cooloy/Guloi tree, a native plum, also the 'tree of life' to the local Ngarinyin, painted beside a large Wandjina (ancestral creator being) who owns this plant (Walsh 1988:182–183). The image is not a naturalistic representation of the plum tree, but rather a stylised version, which, to an outsider, could represent any branching object. Even for the Aborigines interpreting the similar motif at the Wanalirri site to Europeans in the past few decades, this motif has been interpreted as either the root or the branch of the plum tree. Other Wandjina sites contain more plants associated with the Wandjina beings. At one increase site for long yams (kanmangu), the story is told whereby the rock pigeon carried yam seeds to the site (Walsh 1988:186–187). This Dreamtime story reflects the knowledge that birds eat seeds, which spread with their droppings. Figure 3 shows kanmangu from another Wandjina site containing 27 similar plants painted across a back wall. Although the paintings are from the most recent Wandjina Period (the past 600 years), there are also numerous abraded grooves elsewhere on the vertical wall surface, appearing more heavily weathered and ancient. These may be the product of many years of ritual activity, possibly thousands of years old.

2.1 The long yam (Dioscorea transversa/elongate) (kanmangu/ganmanggu)

The long yam, Dioscorea transversa, has many forms in nature and can be smooth and regular or lumpy and bulbous, thin and elongated or more round in shape, and varies in size up to 50 cm long. This yam is found across northern Australia and was a popular food source because it requires no preparation before eating. It is also one of the few examples where Australian Aborigines specifically propagated a vegetable. Knowing that the tuber could re-grow, they traditionally reburied the nodule from the top of the tuber, and sometimes these nodules were carried and replanted in convenient locations for future harvesting. The long yam's popularity as a food source is reflected in north Australian rock-art, where it is painted in its many shapes and sizes. Some examples in Wandjina shelters, including figure 3, show smooth elongated forms and these were associated with ritual increase. At many other sites, the rock-paintings are ancient and the original intentions of the artists are lost. The earliest surviving images of long yams usually show a naturalistic, lumpy form of just the vegetable part of the plant (large motif in figure 4). Other examples appear in Welch (1993:106,109). These earlier rock-paintings have various forms of infill, mostly consisting of irregular dashes, dots, or lines while the yams in the later Wandjina period often have regular rows of dots or dashes placed within the design.

A similar shift from earlier rock-paintings, often plants, fish and other animals, with irregular dot and dash infill, to later rock-paintings with more regular
infill is also seen in the Kakadu rock-art region. While some more recent Kakadu rock-paintings contain regular rows of dots or dashes, infills of parallel lines are more common. The long yam also features in traditional Aboriginal art produced to this day on bark and paper paintings from Arnhem Land (eg, Dyer 1994:44–45, 56–57, 70–71, 74–75) and this allows a study of how different traditional artists depict the plant. By studying contemporary paintings and talking to artists we can know with certainty the subject matter being depicted because we have the artist’s word. Just as the long yam varies in appearance in nature, different Arnhem Land artists paint it in various forms, sometimes slim and smooth in outline, at other times fatter and with knobbly outline. Some artists show irregular protuberances, like projecting fingers, at the base, and this is seen in some early Kimberley rock-paintings. The four metre long motif in figure 5 is identified by Aborigines of the Ngarinyin and Gwini tribes as being either ganmanggu (the long yam) or yamu (Gwini word for Thysanotus tuberosus), a water lily with an edible root below the water. Some of the other motifs are identified as spirit figures. When working with Aboriginal consultants, the interpretation of rock-art motifs may sometimes be influenced by the associated landscape of the location, by the associated motifs, or by the contents of any preceding discussion. Thus, the interpretation of the motif in figure 5 as a water lily may have been influenced by the association of the turtle above left, since turtles bury themselves in the mud of lagoons and are dug up and caught there by Aborigines and eaten. The long extension was recognised at the floating leaves above. However, the overall shape with the presence of rootlets in the centre, lobular extensions at the bottom and the leaves on the vine above suggest a yam, and it is very similar to long yams painted on bark and paper by contemporary Aboriginal artists in the Arnhem Land region far to the east of the Kimberley. What causes confusion is that while the long yam itself has distinctive heart-shaped leaves, the artist has ignored this feature and has drawn ovoid leaves on the stem above.

2.2 The round yam (Dioscorea bulbifera) (gunu)

This yam has been a staple Aboriginal food in the past and has had various common names such as the ‘cheeky yam’ or ‘water yam’, due to the fact it is poisonous if not cooked and soaked first. The exact preparation varied across Australia, but generally included grating, beating, or finely slicing, combined with prolonged soaking to leach out poison, and prolonged cooking to destroy toxins. These food preparation methods were also used on other toxic plants, such as cycad nuts, before being eaten. The round yam occurs in rock-art across northern Australia and also features in recent bark and paper paintings from Arnhem Land, giving us various images of this plant from the perspective of different traditional Aboriginal artists (eg, Dyer 1994:46–49, 96–105). It is important in some traditional ceremonies and is depicted as, part of a Yam Dance, along with dancing ancestral figures, in some of the contemporary Arnhem Land paper and bark art (Dyer 1994:96–7). Kimberley rock-art also contains differing depictions of the round yam, with short lines, hairs, protruding in various ways, sometimes all from just one side, like a human

Figure 5 Long yam with rootlets and vine, red, 4 m high
head with hair, or sometimes from two sides of an ovoid form. The yams may be depicted as single ovoid or similar shapes in isolation or be connected to long lines or strings. These lines probably represent the surface vines, which are followed into the ground as one digs in search of this food.

Figure 6 is recognised by some Kimberley Aborigines as the image of at least two round yams. This rock-painted drawing shows a barred oval, representing a round yam, at the top right alongside what may be a long yam. Long lines thought to represent the associated vines of the tubers connect these images. Another barred oval, near the centre of the image cluster, has connections to four barred projections, which may represent stylised tendrils with leaves. As there appears to be no exact equivalent in nature, this is a problematic image and may contain mythological elements, a feature of some images discussed later. Figure 7 appears weathered and ancient, surviving in purplish pigment. The main figure may be an anthropomorphous ‘yam man’ of some kind, but this is not clear. Along the top is a row of oval motifs not readily identified by local people. One Kimberley elder identified the motifs as possible bush tomatoes and they also resemble the bulb of several other plants such as the water lily. However, these motifs also appear identical to round yams painted by some contemporary Arnhem Land artists.

2.3 Flower shapes
Several flower shapes occur in Kimberley rock-art, with some very elaborate ones associated with Wandjina figures (eg, Welch 1993:111). Figure 8 shows an unusual charcoal drawing, distinctively flower shaped, and could represent the image of one of many different Kimberley flowers, including the tree orchid. It is interpreted by Aboriginal informants as

Figure 6 Enigmatic plant motifs. Faded red. 152 cm across

Figure 7 Possible ‘plant person’ rock-painting with bulbs or tubers arranged above. Old purplish colour. Image cluster height approximately 2 m

probably an image of either the flower of the Kapok bush, also known as the cotton wool plant (Cochlospermum fraseri), or the water lily (Nymphaea species). It is located in a rock shelter on the side of a small cliff line and scarp facing a permanent creek. This location does not help with our interpretation because water lilies are found in the creek below, while Kapok bush grows on the rocky slopes above. Both these plants are common across northern Australia and had important economic and food value...
to traditional Aborigines, making them the most likely subjects depicted. The Kapok bush (malindjar in Gwini language) has edible roots and flowers, bark which can be used to make string, and cotton wool-like fibres surrounding the seeds, which can be used for body decoration. According to Mary Pandilo, one of my consultants from the Gwini tribe, old people in the north Kimberley region also spun the cotton to make a kind of string, and young girls were hit on the back with the fruit in order to make their breasts grow bigger. The water lily (miani in Gwini language) has edible root tubers, stalks, flower stems and seeds that need no preparation, although the seeds were often roasted or ground into flour for eating. The seeds become harder as they dry out, often associated with the receding waters at the edges of lagoons and creeks at the end of the dry season. Pounding and grinding top and bottom stones and pounding/grinding hollows in these regions are probably associated with this activity.

2.4 Plant tubers connected by root ‘strings’ (Cayratia trifolia) (yugali)
Figure 9 is one of many examples of a rock-art motif consisting of circles or oval shapes connected by a line. These occur in rock-art across northern Australia from the Kimberley to Queensland, and are often large paintings several metres across. Some Kimberley Aboriginal consultants interpret figure 9 as possibly representing a pathway taken by an ancestral hero travelling across the landscape. Such an interpretation is consistent with much Australian Aboriginal art, particularly central Australian desert art where circles represent important events or places along the interconnecting paths (lines) during the travels of an ancestral creation being. These are described as ‘Dreaming Paths’ because the Creation Period in Aboriginal religion is also considered as ‘The Dreamtime’ or ‘Dreaming’. Such symbolic art extends from central Australia north to the southern and eastern Kimberley, being found in the contemporary Aboriginal art of Balgo on the edge of the Great Sandy Desert, the Fitzroy River region and the Kununurra region. In such art various shapes may represent the landscape as if the painting were a topographical map of the artist’s area. Rather than simple circles connected by lines, as seen here, generally the important place or event in that art is shown as a ring of concentric circles.

However, in the central and northern Kimberley and other north Australian regions where this particular motif occurs, the rock-art is mostly naturalistic and it is more likely this represents an actual object. Several examples occur in the Kakadu National Park region of the Northern Territory and one large example was interpreted by a rock-art researcher as being a ‘yam design’ (Viney 1978:10). Smaller examples of just two and three interconnected circles occurring in the Cape York region of Queensland are similarly recognised as representing yams by Trezise and his Aboriginal consultants (Trezise 1971:60,67,69,70). Another Kimberley example has previously been

Figure 9 Bush potatoes connected by roots painted in faded red across a shelter ceiling. 2 m
shown (Welch 1993:107). In many of these examples, this motif most likely represents the plant *Cayratia trifolia*, known as *yugali* in the northern Kimberley. This is also known as a 'bush potato', a term used for several different species across Australia. *Cayratia trifolia* is a common plant throughout northern Australia often growing in sandy soils, making digging for it a relatively easy task. Along the roots are a number of these characteristic swellings, like yams or potatoes, and it is these that are being depicted in the art. Figure 10 shows *yugali* as a creeper growing up into the tree at the left and Manuella Punan digging for the root at the base of the tree. These roots are bitter and need to be roasted in a fire for about an hour, otherwise when eaten they make the mouth and tongue sting or itch. The vine also has small berries, not eaten, possibly shown in figure 11, and pointed leaves. Figure 11 has been interpreted by Aborigines as the bush potato and the small ovoid shapes have been interpreted both as leaves and berries. This plant motif is also seen during ceremonial body painting on male dancers of the Rom ceremony of the *Anbarra* people in central Arnhem Land, Northern Territory. There, *Cayratia trifolia* is known as the *guringa* yam and has an important totemic significance, also appearing on bark paintings from the region (Wild 1986:2–3 and Goyulan bark no 4).

2.5 Other roots and tubers

Figure 12 has the appearance of several roots or tubers growing out from a central stem, similar to those held by Mary Pandilo in figure 13. The single
decoration on the painting. This rock-painting, in red ochre, appears alone on the back wall of a shelter and has no superimposition with other art. The application of paint appears crude and 'fresh', but the infill is not that of regular rows of dots or dashes, more commonly seen on the most recent art. Fruit motifs such as these are often seen accompanying Wadjina figures, the important deity of recent times. When such paintings co-exist, local Aborigines have legends explaining such relationships by way of the Wadjina having perhaps carried, cooked, or eaten such fruit at that particular site.

2.7 Meandering lines, vines, and waterweeds
Some of the edible root plants, particularly yams, have a climbing vine with either stems that coil around the stems of other plants, or tendrils which may arise from leaves or lateral branches. When Aborigines seek out the edible roots of plants, they look for the various stems and vines above the ground and then follow them down, digging into the ground. This important association between vine and edible root is depicted in the rock-art both in naturalistic and stylised forms, sometimes with long meandering lines leading to oval shapes representing the root vegetable, such as in figure 6. Very long meandering lines in Kimberley rock-art can be found on a number of subjects. Sometimes they are part of a huge motif such as a snake several metres long. The motif may have been originally painted so large that it extended beyond the protection of the rock shelter, over the exposed rocks to the sides. In this way, the surviving lines may appear as meandering lines when, in fact, they were once part of a specific motif. Other meandering lines are the extended fingers on large human-like deities of the past. These have been interpreted as the lightning on a Lightning Man, but may be the vine tendrils on a 'plant person'. At other times it remains problematic as to whether meanders represent an actual object such as a plant vine or human made string or a concept in the mind of the artist. Figure 15 is an example of meandering lines over a shelter ceiling emanating from a single origin, seeming to consist only of forked lines. The appearance of the attached short lines is similar in places to decorated string on early Kimberley human figures and consistent with the way contemporary Aboriginal artists from western Arnhem Land paint vines (eg, Dyer 1994:96–97) and waterweeds (eg, Dyer 1994:60–61). Figure 15 is painted over a turtle and this might indicate the intended subject was a variety of waterweed.

2.8 Yam/vine inflorescence depicted as dots
Sometimes small flowers are arranged along vines as shown in figure 16. These flowers are called an 'inflorescence', a term used to describe a group of flowers on one stem which may or may not be branched (Levitt 1981:156). Some early yam rock-paintings from the Kakadu/Arnhem Land rock-art region display a row of dots alongside the vine section of the plant (eg, Lewis 1988:294,297), representing this inflorescence. Rock-paintings from the Kimberley region also include examples where lines with dots beside them represent vines with the inflorescence. In figure 17 a bulbous shape at the top has meandering lines extending downward with dots at the outer, upper portion. This is interpreted by Aborigines as mangari (Ngarinyin language for root or yam) at the top and the creeper coming down. The dots are interpreted as the flowers on the vine 'like a passionfruit vine'. The Ngarinyin word for the whole plant is gilan. This rock-
Painting may thus represent a plant bulb and vine with inflorescence, but note how it also finishes with two 'arms' and two 'legs', an example of a Kimberley 'plant person'. This is an old, orange-red painting and the central round shape is likely to be part of a separate over-painting. Other inflorescences are found on figures 18 and 20, discussed immediately below.

2.9 Mythological plants and animals
Figure 18 contains elements of mythology and a combination of plant images. At the top is the image of a bird with its wings stretched outwards and downwards, short lines probably representing feathers from the wings. Emerging from the shoulder of each wing is decoration indicating that this image probably represents a mythological bird. This bird and the designs below comprise a single composition in red ochre and the central object may represent a yam or other tuber with the projections representing fine hair-like rootlets from the plant. Two or three lines emerging from one end of this object are also consistent with this being a plant with vine tendrils. The outer lines have dots beside them, possibly representing the inflorescence seen on yam vines. However, these lines are painted in such a way that they form a loop around the central object and such an occurrence is unlikely to be found in nature. Hence, we are seeing an example of either artistic licence where the artist has created an art form from elements found in nature, or a mythological plant that exists only in the mind of the rock-artist. The surrounding oval shapes may represent leaves attached to a vine. Figure 19 contains the image of what may be a round yam with
hairs connected by a line to a motif, which may represent either another round yam or a human hand or animal paw. Again, this image is not found in nature, but represents a concept, possibly mythical or religious, in the mind of the artist.

2.10 Painted human hands and plants
The painted hand motif is found throughout the northern Kimberley and is often associated not only with various plant motifs such as berries or fruits, yams, and roots, but also with animal motifs such as lizards, snakes, and zoomorphs. Figure 11 shows a portion of a large image cluster where over 20 human hands with long fingernails are painted with plant motifs consisting of berries or fruit on stems, seen here, and with lines extending and joining up with bulbous shapes consistent with the bush potato, *Cayratia trifolia*. Aboriginal knowledge of the exact relationship between the human hands and the plant motifs has been lost with time, but people today have surmised several possible ways in which the artist may have been thinking when combining a human hand with a bush food motif. The most likely is that the hand is a marker of identity that represents the Aboriginal artist who sought bush food in the area.

3 ‘Plant people’ in Kimberley rock-art
Just as there are depictions of ‘yam men’ in the Kakadu/Arnhem Land rock-art (Chaloupka 1993:138–145), so too there are what I have termed ‘plant people’ in the Kimberley rock-art. There are several different groups of ‘plant people’, ranging from small (approximately 50 cm) to gigantic forms (over 10 metres), scattered throughout the northern Kimberley region. These are ancient rock-paintings, many pre-dating the Wandjina and having various meanings to the Aborigines today. Figures 17 and 20 are simple forms of ‘plant people’. Figure 20 has a bulbous shape at the top with lines extending downwards with dots beside it. There is another ancient painting with dots superimposed at the top left. Local Ngarinyin elders, who believe plants were once people in the Creation Period, see this painting initially as a plant form, but have no problem with blending the image of a plant with a human when such an interpretation is suggested. From a European perspec-

![Figure 19](image1.png)

Figure 19 Round yam motif connected to another yam or paw. Differential weathering across the image cluster has resulted in colour changes through orange-red-brown pigment residues. Image cluster 50 cm long

![Figure 20](image2.png)

Figure 20 Rock painting of a ‘plant person’ holding boomerangs, bonded red pigment, 48 cm high
tive, the image is best held upside down in order to see it as a bulbous plant with shoots and vine above. However, in its human form, the bulb is a head or headdress, some shoots are tasselled decorations from the neck, a boomerang is held in each hand with a tassel or fan in one, and the body line separates to form two legs. This is one of the smaller examples of a 'plant person', but gigantic ones exist, stretching across entire cave back walls and ceilings, with the fingers becoming tendrils of plant vines and the feet having bulbous, yam like appearances. The plant-centric rock-paintings of Australia's Kimberley region reflect the close relationship between the origins of plants and humans in the minds of the artists and, indeed, traditional Australian Aboriginal cultures. Plants once had a human form and here is the rock-art reflecting this important relationship.

4 Conclusion
This paper is intended as an introduction to plant motifs in Kimberley rock-art. Plant motifs are found amongst the oldest to the most recent of paintings in this region, and are produced in both naturalistic and non naturalistic styles. One can see why they have many different forms and are sometimes difficult to identify as being plants. The importance of local botanical and Aboriginal cultural knowledge to assist in identification has been shown. Only with Aboriginal knowledge can we understand the significant role that religion and mythology play in the production of some of this art.

Much of the discussion on this region's rock-art in recent years has emphasised the more prevalent human figures, and I needed to address the floral aspect of the rock-art. As this paper concludes with the mention of 'plant people', plants once had a human form in Aboriginal religion, and here we have seen the art reflecting this important relationship. The next step in the discussion of plants will be to show more examples and explain the nature of the Kimberley 'plant people'.

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References