

A Note on Plants Used by the Kukatja to Make Fire

P. Bindon* and A.R. Peile†

The Kukatja formerly inhabited the Stansmore Range and an area to the east around Lakes White, Wills and Hazlett in north-eastern Western Australia. Now they live further north at Balgo, an Aboriginal community 270 km south of Halls Creek in the east Kimberley. Today, matches are the most usual means of fire lighting used by the Kukatja, but we have observed both the fire drill (McCarthy 1945: 370) and the fire saw (Gould 1971: 16) in use. These are not the only methods known to Aborigines (see Davidson 1947, Speiser 1940) but our discussions with Kukatja men and women confirm an earlier observation by Worms (1950: 145-164) that these two are the only friction methods practised by this group.

In both techniques friction between drill or saw and the base piece (also known as the hearth) produces a brown powder or punk and eventually a tiny glowing ember. This is caught in fine tinder held in a wad of dry grass, and blown or fanned into flame. In this area of Australia, dry powdered marsupial dung or the dung of wood boring insect larvae is used as tinder, and numerous plants provide wood for drill, saw or hearth. Both hearth and drill or saw may be of softwoods, as in five cases which one of us observed, but more usually the hearth is softwood and the moving part, which requires some strength, is hardwood (McCarthy 1945: 370).

The importance of fire in the economy of the Western Desert Aborigines (see Kimber 1983) has produced a wide vocabulary of fire associated words. However it is interesting to note that none of the Kukatja plant names collected by us derive from any words in the language which relate to the generation of fire. This is in contrast to the common Aboriginal practice of naming species after their uses, e.g. one species of tree, eagerly sought for spear making (*Acacia cowleana*) is commonly referred to as 'Kulatakara' from the word 'Kulata' which is widely used in Aboriginal languages as a general name for 'spear'.

The list of plants we present here has been assembled from two sources. Opportunistic collections of plants in flower were made during three trips into the Kukatja homeland accompanied by traditional land holders from Balgo who

* Department of Archaeology, Western Australian Museum, Francis Street, Perth, Western Australia 6000.

† Kukatja Research Centre, Private Bag 1, Halls Creek, Western Australia 6770.

volunteered information on the plants to one of us (PB). Amongst the many species said to have an economic use were those associated with fire generation. These have been combined with other records taken from dictionary lists collected at Balgo over many years (ARP). We are aware that not all entries record first-hand experience.

Plants listed in Table 1 are arranged alphabetically in order of genera and species together with Kukatja names and synonyms. We acknowledge that some of these words are common to a number of arid land Aboriginal languages. For most of our records, herbarium specimens were collected, labelled, pressed and dried according to usual botanical methods. Limits of time or season prevented collection in a few cases or in one other, enabled identification to generic level only, particularly when neither flower nor fruit were in evidence. We do not consider that this list is exhaustive but even so it should be of use to others researching the ethnobotany of the Australian Arid Zone (Jessop 1981).

Table 1 List of plants used by the Kukatja to make fire

Plant Name	Kukatja Name and Synonyms	Use	Comments
<i>Acacia acradenia</i>	kaluru-kaluru, tjipirinpa	fire saw	
<i>A. aneura</i>	wirrimankuru, wanari, kurrku manytja, puti, tarunpa	fire saw	dense wood
<i>A. bivenosa</i>	mulupuka, kunapuka, pankurla, yintinti, yirrkirli, yinyjirrimi	fire drill	roots used
<i>A. lysiphloia</i>	yantja-yantja	fire drill	
<i>A. pachyacra</i>	kayuru	fire saw	
<i>A. pruinocarpa</i>	marntila, tjuwilpa	fire saw	
<i>A. stipuligera</i>	kalirra	fire saw	
<i>A. tumida</i>	ngarlurrpa, kirilinpa	fire saw	
<i>Canthium latifolium</i>	tjartupirra, tjaatjumba walulu		specific use not collected
<i>Cassia oligophylla</i>	punti	fire saw	
<i>Clerodendrum floribundum</i>	marnakarra, pirintji marnapurta, witipi, witoluru, yarrnginyi	fire saw and fire drill	

Table 1 (continued)

Plant Name	Kukatja Name and Synonyms	Use	Comments
<i>Codonocarpus cotinifolius</i>	kintatu, karlurti, kantumi kantu wangu tjintatu	fire saw and fire drill	
<i>Crotalaria cunninghamii</i>	ngalyipi	fire saw and fire drill	
<i>C. eremaea</i> (subsp. <i>strehlowii</i>)	ngarlilirrki	fire saw and fire drill	
<i>Didymotheca tepperi</i>	turlpa-turlpa	hearth	
<i>Dodonaea physocarpa</i>	winpurn-winpurnpa	fire saw	
<i>Erythrina versperilio</i>	marlayi, kumpupanu	fire drill and fire saw	excellent fire sticks
<i>Eucalyptus odontocarpa</i>	tjipari, palpimpa, palpirpa	fire saw	
<i>E. papuana</i>	walytji, kurrmalyi, tjarra, tjuta	fire drill	roots used, good firewood
<i>Grevillea</i> sp.	yanarnti, nyintilpa, marlpa	fire drill and hearth	dry flower stem used
<i>Hakea suberea</i>	piruwa, katapuka, kupanu, tatira-punkalpa, wira- tjartu, yuti-yuti	fire saw and hearth	
<i>Melaleuca lasiandra</i>	tjarnturmtu	fire drill and fire saw	roots used
<i>Newcastelia cladotricha</i>	purlta-purlta, mirra-mirra	fire drill and hearth	
<i>Santalum lanceolatum</i>	patutjuka	fire saw	stem or roots used
<i>Sida petrophila</i>	tatji-tatji	hearth	
<i>Trichodesma zeylanicum</i>	winturlka	fire drill and hearth	

References

- Jessop, J. (ed.) (1981). *Flora of Central Australia*. Reed, Sydney.
- McCarthy, F.D. (1945). Fire Without Matches. *Aust. Mus. Mag.* 8: 368-373.
- Gould, R.A. (1971). Use and Effects of Fire Among the Western Desert Aborigines of Australia. *Mankind* 8: 14-24.
- Kimber, R. (1983). Black Light: Aborigines and Fire in Central Australia and the Western Desert. *Archaeology in Oceania* 18: 38-44.
- Davidson, D.S. (1947). Fire-making in Australia. *American Anthropologist* 49: 426-437.
- Speiser, F. (1941). Ueber Feuerzeuge in der Sudsee. *Anthropos* 35 (6): 239-263.
- Worms, E.A. (1950). Feuer and Feuerzeuge in Sage und Brauch der Nordwest-Australier. *Anthropos* 45: 145-164.

Guide to Authors

Subject Matter

Reviews, observations and results of research into all branches of natural science and human studies will be considered for publication. However, emphasis is placed on studies pertaining to Western Australia. Full length papers should not normally exceed 30 typed pages. Short communications should not normally exceed three typed pages and this category of paper is intended to accommodate observations, results or new records of *significance*, that otherwise might not get into the literature, or for which there is a particular urgency for publication. All material must be original and not have been published elsewhere.

Presentation

Authors are advised to follow the layout and style in the most recent issue of the *Rec. West. Aust. Mus.* including headings, tables, illustrations and references.

The title should be concise, informative and contain key words necessary for retrieval by modern searching techniques. Names of new taxa must not be included. An abridged title (not exceeding 50 letter spaces) should be included for use as a running head.

An abstract must be given in full length papers but not short communications, summarizing the scope of the work and principal findings. It should normally not exceed 2% of the paper and should be suitable for reprinting in reference periodicals. Contrary to Recommendation 23 of the International Code of Zoological Nomenclature it may include names of new taxa.

Footnotes are to be avoided, except in papers dealing with historical subjects.

The International System of units should be used.

Numbers should be spelled out from one to nine in descriptive text; figures used for 10 or more. For associated groups, figures should be used consistently, e.g. 5 to 10, not five to 10.

Spelling should follow the *Concise Oxford Dictionary*.

Systematic papers must conform with the International Codes of Botanical and Zoological Nomenclature and, as far as possible, with their recommendations.

Synonymies should be given in the short form (taxon, author, date, page) and the full reference cited at the end of the paper.

Manuscripts

The original and two copies of manuscripts and figures should be submitted to the Editorial Committee, c/- Publications Department, Western Australian Museum, Francis Street, Perth, Western Australia 6000. They must be in double-spaced typescript on A4 sheets. All margins should be at least 30 mm wide. Tables plus headings and legends to illustrations should be typed on separate pages. The desired positions for insertion of tables and illustrations in the text should be indicated in pencil. Tables should be numbered consecutively, have headings which make them understandable without reference to the text, and be referred to in the text.

High quality illustrations are required to size (13.5 cm x 18 cm) or no larger than 32 cm x 40 cm with sans serif lettering suitable for reduction to size. Photographs must be good quality black and white prints, 13 cm x 18 cm (5 inches x 7 inches). If scale line and lettering are required on photographs *do not* place directly on to print. They should be positioned on a clear paper or film overlay. Scale must be indicated on illustrations. All maps, line drawings, photographs and graphs, should be numbered in sequence and referred to as Figure/s in the text and captions. Each must have a brief, fully explanatory caption.

In papers dealing with historical subjects references may be cited as footnotes. In all other papers references must be cited in the text by author and date and all must be listed alphabetically at the end of the paper. The names of journals are abbreviated according to *World List of Scientific Periodicals*. The use of 'unpublished data' or 'personal communication' is discouraged.

Processing

Papers and short communications are reviewed by at least two referees and acceptance or rejection is then decided by an editorial committee.

The senior author is sent two sets of galley proofs (one to be retained) and one set of page proofs which must be returned promptly.

The senior author will receive fifty free offprints of the paper. Additional offprints can be ordered at page proof stage.

CONTENTS

- Dunlop, J.N. and Wooller, R.D.**
Range Extensions and the Breeding Seasons of Seabirds in
South-western Australia 389
- York Main, Barbara**
Further Studies on the Systematics of Australian Diplurinae
(Araneae: Mygalomorphae: Dipluridae): A New Genus from
South-western Australia 395
- Cleverly, W.H.**
Further Small Recoveries of the Billygoat Donga and
Associated Stony Meteorites 403
- Fain, A.**
A New Mite (Acari, Acaridae) from a Nest of the Wasp
Paragia tricolor Smith in Australia 407
- Wooller, R.D. and Richardson, K.C.**
Geographical Variation in Size of White-browed Babblers
in Western Australia 415
- Kitchener, D.J. and Humphreys, W.F.**
Description of a New Species of *Pseudomys* (Rodentia:
Muridae) from the Kimberley Region, Western Australia 419
- Kitchener, D.J., Caputi, N. and Jones, B.**
Revision of Australo-Papuan *Pipistrellus* and of *Falsistrellus*
(Microchiroptera: Vespertilionidae) 435
- SHORT COMMUNICATIONS**
- Bindon, P. and Peile, A.R.**
A Note on Plants Used by the Kukatja to Make Fire 499