AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Roth, Walter E., 1910. North Queensland Ethnography. Bulletin No. 16. Huts and shelters. *Records of the Australian Museum* 8(1): 55–66, plates xi–xvii. [15 November 1910].

doi:10.3853/j.0067-1975.8.1910.934

ISSN 0067-1975

Published by the Australian Museum, Sydney

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BULLETIN NO. 16.

HUTS AND SHELTERS.

(Plates xi.-xvii., and Figs. 31-42.)

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1. Undoubtedly there are certain definite types on which shelters and habitations are constructed, e.g., breakwinds and temporary shelters, bark-covers, huts with a square framework, huts with a dome framework-but of true genealogy or relationship it is difficult to speak with certainty. The break-winds would naturally appear first, though the ridge-pole designs with forked uprights are probably of Papuan introduction; indeed, the latter arrangement is certainly connected with the square framework hut met with only in the Peninsula and in the North, but whether connected in the way of progress or retrogression it is impossible to say¹. The common arrangement of two more or less bent sticks interlocking at their forks, met with at such widely seporated areas as in the districts around Rockhampton and the whole North-West, coupled with the interlocking of a forked with a purposely-cracked stick at Brisbane, may point to a condition of affairs where the ridge-pole has been done away with, the two forked uprights coming into close apposition, while the simple (single-piece) hoops met with on the Tully River and Coast-line northwards may be an imitation accounted for by the substitution of a pliable material (e.g. Calamus, sp.) met with locally in abundance. Any (a) single bent withe or hoop, or (b) two bent withes tied or otherwise interlaced on top, or (c) two forked sloping uprights locked at their forks, will con-

¹ Traces of the forked-upright method of construction were met with in the scaffolding upon which the corpse was laid in the Brisbane area :— See Roth—Bull. 6—Sect. 13, fig. 60.

stitute an arch supporting the dome roof. Not only is it thus quite possible that the square or dome-like basis of construction of any hut is more intimately connected than might at first sight be supposed but that the different varieties of dome-type also bear intimate relationship as expressed in the following table:—

Framework	Arches	Supports	Hut-entrance formed by
A. Multiple, <i>i.e.</i> , formed of many			
arches	$ \begin{cases} (a) \text{ parallel with} \\ \text{one another} \\ (\text{Sect. 4}) \dots \end{cases} $		one of the arches
	(6) cross - wise with one an- other (Sect 5)		interspace between any two arches
B. Simple, <i>i.e.</i> formed of one arch held in		(
position by		(a) a single support ²	(i) the whole arch (Sect 6, 7) (ii) either the arch alon or with the suppor
		(b) many	(Sect. 8) (iii) the whole arch divid ed by the suppor (Sect. 9)
		supports	portion of arch and one o the supports (Sect. 10).

Huts with a dome framework.

The scooped-out camping grounds of the Wellesley Islanders and the excavated huts of the Boulia District may indicate traces of an under-ground or cave-dwelling population.

In most of the camps there is a special hut for the use of the unmarried men, unmarried adult females always staying with married relatives, never by themselves.

Camps may be shifted on account of death, if there has been a good deal of sickness about, though more generally on account of fleas, vermin, refuse, as well as scarcity in the local food supply.

2. Independently of the protection and shelter provided by natural forms, e.g., overhanging bushes, cave-shelters, etc.,

² After the manner of a tripod.

the most primitive form of artificial break-wind is to be seen in the native camps scattered over the Wellesley Islands. This is composed of bundles of grass (Pl. xi., fig. 1; Pl. xii., fig. 1), cuscuta, leafy switches, or blood-wood boughs with the stems outwards, just thrown on the ground and arranged in such fashion as to form a semicircular hedge up to between eighteen inches and two feet high surrounding the circular excavation in which a couple or more blacks will be lying curled round the central fire. The fact of these natives sleeping without any hut or covering whatsoever may account for their rising with the early dawn, a most unusual circumstance. It was also strange that on the four or five occasions that I examined this group of islands, no evidence was observable of the apparently numerous pits described by Flinders, although it is possible that in the interval between his visit and mineupwards of a century-the pits have become shallower and shallower until they are now represented by the circular excavations referred to.

Other early types are those where the ground or a tree convenient are utilised. Thus, instead of the bundles of leafy switches being thrown down in a heap one on top of the other, they are now fixed vertically into the soil, and inter-twined with others, and with tussocks of grass maybe, placed cross-wise. Such a break-wind for instance would be observed anywhere and everywhere; in the Boulia District where it is usually from about two and a half to three feet high and known as a walló-a or yangko³, it is often to be seen on one or both sides of the hut-entrance so as to protect not only the fire itself but also the individuals who may choose to be squatting down in the open around it. Or again, as in the Lower Tully area, a stick or sapling may be tied up at an angle to any convenient tree, and some leafy switches leant up against it. A remaining early type (Pl. xiii, fig. 1) is a sheet of bark fixed lengthways and edgeways into the ground though even this apparently simple arrangement means at least ability to climb a tree, the knowledge of how to remove the bark, and the possession of special tools to effect the purpose.

Amongst more advanced varieties are the winji-winji of the Boulia District, and the ridge-pole shelter of all the more northern area of the Peninsula. Strictly speaking, the former is any temporary bough-shed for protection from rain should it suddenly come up and is built of light sticks grass and bushes. A very common arrangement⁴ is to have it attached to the hut

³ It is called rnyí-i on the Pennefather River.

⁴ Roth-Ethnol. Studies, etc., 1897, fig. 248.

with a view to sheltering the fire which is usually kept burning just outside the entrance. In such a case the two "back-bones" of this kind of winji-winji are built as high as, or higher even than those of the attached habitation and the "legs" instead of being fixed vertically are kept in position more or less horizontally one above the other by being stuck into the vertical interspaces surrounding the original entrance-way; the occupants pass in and out on either side of the fire between it and its shelter-cover.

The ridge-pole would appear to be the most advanced of all, not only in principle, but in the requirement of specialised, *i.e.*, forked, uprights. Such an arrangement may be simple or multiple, in the former case completed with some leafy switches leant up against it (Pl. xiv., fig. 2); in the latter, a couple may be placed side by side (Pl. xv., fig. 2), the overlaid foliage constituting a shelter from the sun when well over-head, or linearly to form a palisade. There may be an extra thatch of tea-treee bark in certain cases.

3. The simplest form of bark-hut met with is that composed of a single sheet either curved or more usually bent at its middle (Pl. xvi., fig. 2), the ends being firmly fixed into the soil.



A development of this is where, as on the Pennefather River, two or three such bent sheets overlap one behind the other, the extremities being fairly jambed into the sand which is heaped up against them slightly; it is known locally as rju-ini (fig. 31), the same

name given to the oval-framework hut made here and on the Batavia River. On the Jardine River, on the extreme north of the Peninsula I have seen a single-sheet bark hut with one of its otherwise-open ends enclosed with leafy boughs.

4. On the Lower Tully River the following is the orthodox method of building a hut (fig. 32):--

Three pairs of unsplit withes abc are fixed in position, their ends bent over, and tied on top with lawyer-cane. Three hoops are thus formed, the middle b being the tallest, and c ultimately forming the entrance, the smallest. Beyond the third arch, some five or six pieces of split cane



are stuck into the ground, bent over, and tied (not usually interlaced) on to the arches as to constitute the framework. The next thing is to thatch which is done either

with grass (Pl. xii., fig. 2), leaf, or bark. The grass employed is the "Blady-grass" (Imperata arundinacea, Cyr.) growing from two and a half to three feet long; handsful of it, with the butts down, are laid against this framework all the way round, to be similarly followed by another layer but with the butts up. These two layers of bundles are next fixed in position by means of a split cane which, fixed to one side of the doorway, passes right round the hut, perhaps tied here and there to the frame-work on its course, to be attached to the other side of the entrance. Then, with the butts up, the builder starts again with a single row of thatch, but fixes it with cane as he goes along, round aud round, spiral-wise, until he gets to the top. Finally, at the very top he puts on some tea-tree bark or palm-leaves, a couple of boughs resting on them and sokeeping everything in position⁵. The area enclosed by such a hut (MAL. kanna) is of course oval, while the height is usually well under four feet; the ground within is not excavated, nor is the earth shovelled up around on the outside, although this practice has been learnt of late years. The leaf used for thatching is that of the Lawyer-vine (Calamus, sp.) and Fan-palm (Licuala muelleri, Wendl. and Drude) though unfortunately I never enjoyed an opportunity of watching their employment. Where the thatching is of Tea-tree (Melaleuca, sp.).

it is put on as follows (fig. 33):—A long sheet (a) right round the base of the hut, then vertical pieces (b) with their ends tucked into the frame-work and overlapping the long sheet, to be followed by several pieces laid horizontally on top (c), all kept in position by means of a heavy log or two.



Round the base of such a bark-thatched hut, sand is thrown up against it to a height of five or six inches with a view to prevent the bark from springing out. Both men and women build the huts here.

5. Alone the Coast-line northwards, e.g., at Cape Grafton, the Bloomfield River, Cape Bedford and around the shores of Princess Charlotte Bay, there is a tendency to construct the circular framework of these huts by firmly sticking the saplings or switches composing it into the ground along the limits of the area to be enclosed (Pl. xvi., fig. 1), and then bending them over

⁵ The hut for the special use of the boys during their initiation is similarly grass-thatched, but is a very much larger building, and has nobark or palm-leaves on top.

and tying, not inter-locking, so as to form a series of hoops crossing one another; these hoops are finally strengthened by transverse and oblique pieces fixed across them, in and out. At Cape Bedford, the hut (KYI. bayen) may be built of five or six such crossed hoops (KYI. karar), at Princess Charlotte Bay of over a dozen, the future entrance (KYI. barkar = mouth) being constituted of one of the intervening spaces; sometimes, there may be two such entrances. The thatch is either of bark, bladygrass, lawyer-vine, cycad- or palm-leaf according to the local vegetation, and certainly both on the Bloomfield River and at Cape Grafton, the leaves are invariably commenced with from the top, succeeding layers being placed from above down, heavy boughs or rather logs weigh them into position, the rain being kept out not so much owing to the arrangement of the leaves as to the quantity put on. Furthermore, the leaf-thatch may, as at Cape Grafton, be preceded by odd scraps of bark, placed more or less vertically so as to act as drains for the rain. The height of these huts averages about four or four and a half feet; there is no floor excavation. There is usually a fire burning inside the structure when built for winter-use, and one or two entrances according to the size of hut. Thus, on the Bloomfield River, a man with one wife and a small family will occupy a hut with a single entrance; if he has one old wife, and other wives and children, a larger habitation will be used, the old woman having a separate entrance and separate fire to herself.

6. A similar type of hut⁶, made by the Brisbane women, was often seen at Eagle Farm, on the Coast-line, and at Bribie and Moreton Islands. It was much larger than the other made by



the men, being about nine feet across and four feet high. It was constructed of a series of four hoops (fig. 34) crossed, stuck at both extremities into the ground, the timber employed being the local wattle or "oak". Filling up the segments, other straight withes were stuck into the ground with their tips tied to the hoops where they crossed each other; there were no sticks fixed in obliquely or

transversely, indeed, no interweaving. One of the segments was left open, to act ultimately as an entrance. The whole was then covered with sheets of tea-tree bark, but (unlike the bark-hut made by the men) these were placed transversely and made to overlap after the manner of a shingle roof, with a

⁶ According to Mr. T. Petrie.

large one on top hanging over the "door" which was only just big enough to allow a person to crawl in; heavy sticks were leant up against the bark to keep it in position. These huts were mostly made in winter-time, and would hold eight or nine people; a small fire was kept glowing inside in the centre.

7. In the hinterland of Princess Charlotte Bay, across and in the Peninsula to the opposite Coast-line on the Pennefather River, the dome-framework type of hut shews a formation of

door-way similar to that met with on the Tully River, namely in the possession of a special hoop of its own (fig. 35), supported at its apex by another bent withe tied there at right-angles, on to which the remaining scaffolding is attached. For instance, on the Kennedy River, I watched the construction of the "Cabbage-tree" palm-leaf (*Livistona*



australis, Mart.) hut represented in Pl. xvii., fig. 2. Gnarwin, the head of the local tribe made it for himself and wives, who are here represented. Withe ¹ bent over into a hoop and fixed into the ground at both extremities, forms the door-way; withe ², placed at right angles to it and tied, has successively attached to it, the remaining withes in the order indicated, all of which are subsequently strengthened by bent sticks interwoven or otherwise attached more or less obliquely. In this particular instance there did not appear to be any definiteness in the arrangement of the



axes of the leaves, up, down, or sideways, the whole being prevented blown away by means of heavy timbers fixed firmly into the ground and pressing at an angle against them. Fig. 36 shews a similar method of construction from the Pennefather River. Two long withes 1, 2, twisted around each other for strength

and stability are fixed in the ground at either extremity, hoop fashion, and tied low down on each side; this double one constitutes the future hut-entrance which is always turned away from the prevailing wind. Withe ³ is fixed in at its base at a point about midway between the imaginary line joining the bases of ¹ and ²; it is bent down and either by its own spring held under the top of the original hoop, or else jammed into its interstices, or else tied there. Nos. ⁴, ⁵, etc., are then attached in similar fashion, usually by their own elasticity, but also interlacing one another may be on top. Sheets of bark (*Melaleuca* sp., *Eucalptus tetradonta*, F.v.M.) are next put on, and held in position by logs as before. The Normanton huts, for wet season use, shew a similar basis of -construction, and are thatched with grass; the entrance is comparatively small (Pl. xiv., fig. 1).

8. This tripod basis of construction of a dome-frame work hut



--represented by the two halves of the hoop and its support in the previous examples—is parallelled in the Rockhampton and Brisbane areas, with the distinction however that the supporting withe divides the comparatively large door-way, which occupies one or both sides of the tripod. Thus at Gladstone, Miriam Vale, etc., I have often observed such an arrangement made of two forked sticks (fig.

37) interlocked with a third support, the bark sheets being loosely attached on whichever aspect required 7.

9. Again, at Brisbane^s, with the ordinary type of hut made by men, a stiffish withe would be cracked, not broken in two (by

bending over the top of the head, and pressing the ends down with the outstretched hands) and stuck at either extremity into the ground, the bent portion being supported by a forked stick similarly stuck into the soil (fig. 38). On the side of the bent cross-piece or hoop, further removed from the fork, were slanted up against it several secondary withes, their bases in the ground limiting the floor-circumference of the hut. Up against the secondary sticks were vertically placed sheets of tea-tree bark, and covering them on top was an extra large sheet after the manner of a ridge-cap (fig. 39). To prevent cold wind passing in between the edges of these sheets, two would be





placed side by side and one in front (fig. 40); while, to keep the sheets in position a trench was dug and the earth thrown



Fig. 40.

up against them all the way round. If wind was expected, heavy poles were laid upon the sides and top. The comparatively large "door" or rather opening of such a habitation was always in the direction whence its occupants had come, its position having nothing whatever to do with the prevailing winds; if however the wind proved too strong in

 7 At Rockhampton such a hut was known as a tu-ra to the local Tarumbal Blacks.

⁸ From notes supplied by Mr. T. Petrie. These huts were known as nguduru after the Melaleuca bark with which they were thatched. Dalu, signifying fire was the name applied to a camp in general; it also signified home in the same sense that we speak of hearth. he door-way, a break-wind would always be put up in front, he fire being between it and the entrance. Such a hut was about four feet high. Supposing the blacks were travelling, and a woman had no baby she might be seen carting the barksheets for the hut to be erected at the next camping-place, especially if it were known that there was no such bark in its vicinity. On other occasions when travelling and no tea-tree bark was available, they might use "stringy-bark," "iron-bark," or "gum" though not so good; failing these, they would thatch with tussocks of long "blady-grass," beginning from below up, and fixing them in position as before with heavy sticks pressed up against them.

10. Over the larger portion of the North-West Districts another type of dome-frame hut is to be observed; this is the kurau-i of Boulia⁹, the yin-bur of Cloncurry, etc., which is originally designed for withstanding rain, but now devoted to indiscriminate use, and is almost always constructed on a piece of high ground, so as to ensure the more rapid dispersal of the Building operations are commenced with two naturallywater. bent forked saplings which are fixed deeply into the ground below-and made to interlock above; to obviate the trouble of finding and cutting suitable lengths of the orthodox forked pattern they may occasionally be seen manufactured with spliced timbers and tied. These two primary supports pass by the name of wandaru (PPT.=back-bone) their lengths varying according to the size of hut required, the summit of which on an average is about four feet and upwards from the ground-level (Pl. xv., fig. 1). Pressing up against them on either side are a number of lighter saplings or prinna (PPT.=legs) fixed firmly into the ground along the area to be enclosed; to allow for the future entrance or tera, the prinna are omitted over the larger portion of the base end of one of the wandaru, the particular "leg" limiting the doorway not being necessarily always larger or in any way specially distinctive from the others. Along the intervals between the prinna, light bushes are laid and intertwined with their foliage down, these being followed by tussets of grass, then a coating of mud, and lastly by another layer of bushes (Pl. xvii, fig.1), but the covering of mud, which requires no inconsiderable time and skill, is often omitted. The ground-space enclosed by the hut-wall is more or less circular in the smaller varieties, somewhat elliptical in the larger. If the rain beats in at the door-way, the aperture is just covered in with an armful of bushes thrown up in front of it, and if the hut, as in the larger sizes, has two entrances,

⁹ Roth-Ethnol. Studies, etc., 1897, figs. 247A and B.

the rain can be thus easily blocked from either quarter. The level of the ground inside is not purposely lowered, though what with the constant treading upon, it often gives one this appear-In the Cloncurry District specimens, in addition to the ance. thatch already described, the whole is usually covered with barksheets retained in position by means of heavy boughs resting on top. Talking of bark reminds me that so far as the district around Boulia is concerned-and the same holds good for certain other areas-its use as a wall-covering is unusual in the construction of any variety of hut, but whether this is due absolutely to scarcity of timber it is impossible to say, though the advent of the European has been certainly responsible for its substitution by cattle-hides and galvanised iron with an accompanying degeneracy in the framework. The annakadyi is another kind of Boulia District hut built on a similar scaffolding as the kuraui, but designed especially for warmth, and so for use in the winter months. A flat-bottomed hole is dug into the ground to a depth of about one and a half feet, or even more, the rather elliptical outline of its sides forming the limits of the habitation to be erected over it, the bottom of the excavation constituting the future floor. The frame-work of "back-bone" and "legs" is next inserted. Wet grass is then collected and wedged into the spaces intervening between the prinna, and thick layers of mud covered on; the mud thus moistened soon becomes hardened and, by means of the grass, fixed in position ; a ring of wet mud about a foot in width is finally smeared round the limits of the entrance for which it forms a sort of artificial door-frame, and at the same time gives it a rather ornamental appearance. On completion, a big fire is kindled within, near the further side, opposite the door, with the result that, by sun-down, when the embers are removed, the place is warm enough to sleep in. The introduction of European clothes and blankets has however been responsible for the gradual and marked disappearance of this particular form of hut. Finding that they can obtain protection from cold by the use of such coverings, the natives are dispensing more and more with these structures which entail no inconsiderable amount of time, toil, and patience in their making; the change itself, owing to these civilising influences, has not been a sudden one, the depth of the floor below the ground-surface having been slowly decreased, while the height of the hut above ground has been correspondingly increased¹⁰,

¹⁰ Mr. J. Craigie, late of Roxburgh Downs, had noticed this gradual modification in height and depth during a stay on the Georgina River of upwards of seventeen years, but the explanation was given me by the Boulia natives.

NORTH QUEENSLAND ETHNOGRAPHY-ROTH.

11. North of the Palmer River, scattered right through the Peninsula, up to certainly the Embley River on the Gulf Coast, is to be seen a type of hut built on a square framework on the principle of a ridge-pole supported by two upright-forked sticks, very commonly of Pandanus, the dichotomous growth of which lends itself admirably for the purpose. In its simplest form it consists of a single ridge-pole (fig. 41a) over which a sheet or sheets of bark are made to rest; in May, 1902, at a spot east of the telegraph line between Moreton and Macdonnell I passed a native encampment made up of a series of these, fixed end on end, like a huge tunnel quite thirty feet long. On the



Fig. 41a, Fig. 41b.

Middle Palmer, the Koko-minni make use of the bark obtained from one or other of the following timbers :---"Iron-wood" (*Erythrophlaum laboucherii*, F.v.M.), *Melaleuca* sp., "Messmate" or "Box-wood." In the next stage the hut will consist of two ridge-poles similarly supporting a bark-sheet (fig. 41b). Then comes the condition where short sticks are laid across the ridge-poles to form a bunk upon which an individual may sleep at night, and below which shade may be obtained by day. These



Fig, 42,

sleeping platforms (fig. 42) are common in the hinterland of Princess Charlotte Bay, a sheet or two of bark on the crosspieces making it more comfortable to lie upon. Pl. xi., fig. 2, represents one from the Lower Normanby River. To the right of the platform in the picture can be seen a "step" also formed of a forked limb pressed against the upright at an angle with the ground, while to the front will be detected the remains of a fire, the smoke from which keeps the sleepers free from mosquitoes; the fire is never built immediately beneath. Such a platform is built from five to six feet high, and may accommo-

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date three or four people on top; local names—KWA. barpur, KLA. arrianggar, KRA. ngamba. To form the fourth stage this sleeping platform is enclosed with two more ridge-poles resting on correspondingly longer forked supports, which, when covered in with bark-sheet, constitute a habitation raised above the surface of the ground. The furthest north at which I have observed such a composite hut was on the Embley River; in the neighbourhood of the junction of the Palmer and Mitchell Rivers (Pl. xiii., fig. 2), Sub-Inspector Garraway tells me the platform is fixed at a height varying from six inches to three feet. On the Embley River the men use the platforms, the women having to be content with the ground, their business being to mind the fire.

EXPLANATION OF PLATE XI.

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Fig. 1. Most primitive form of artificial break-wind.—Wellesley Islands.
, 2. Sleeping platform.—Lower Normanby River.

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PLATE XI.





EXPLANATION OF PLATE XII.

Fig. 1. Another form of primitive break-wind. — Wellesley Islands.
,, 2. Completed hut, thatched with "blady-grass" over a withy frame-work of hoops.—Lower Tully River.

PLATE XII.



EXPLANATION OF PLATE XIII.

Fig. 1. An early type of shelter, consisting of a sheet of bark fixed lengthways and edgeways into the ground.

,, 2. Composite huts at the junction of the Palmer and Mitchell Rivers.—Photographed by Inspector Garroway, 1899.

PLATE XIII.



EXPLANATION OF PLATE XIV.

Fig. 1. Grass-thatched hut, with small entrance. --Normanton.
,, 2. Simple ridge-pole form of structure in skeleton, before leafy switches are leant against it.



EXPLANATION OF PLATE XV.

Fig. 1. Skeleton of dome-frame hut formed of heavy saplings.-Northwest Districts.

,, 2. Another and more advanced form of ridge-pole structure.

PLATE XV



EXPLANATION OF PLATE XVI.

Fig. 1. Circular frame work of switches struck into the ground along the limits of the area to be enclosed.—Northern Coast-line.

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2. Simplest form of bark shelter composed of a single sheet bent at its middle, the ends being firmly fixed in the soil.

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PLATE XVI.



EXPLANATION OF PLATE XVII.

Fig. 1. The sapling-framed hut seen in Plate xv., fig. 1, covered with bushes, &c.-North-west Districts.

,, 2. "Cabbage-tree" palm leaf hut. -Kennedy River.

PLATE XVII.

