IX 6

Stone Implements, Weapons, etc. of W.A.

with references to early writers

on the subject.

Early Notes.

CONTENTS

Stone Implements, Weapons

(To be corrected and added to)

A general family resemblance may be traced in the implements which are manufactured by the Australian natives, although each State may differ somewhat slightly in the fashioning of the weapons. It has been stated by some writers that those of the W.A. natives are less advanced and more rudely made than those in the Eastern portion of the continent, but amongst the discoveries that have been made of late years of the weapons of offence andd efence manufactured by the W.A. natives the serrated stone spear head exhibits as much ingenuity and skill in its making as any of those on the Continent.

The stone implements used by the natives of this State are as follows :

tomahawk (of two kinds, double and single edged)
knives
chisels
adjes ?
basalt for jagged spears
stones or chips for skinning animals
native stone mills for grinding roots, seeds, etc.
Stones for sharpening spears and tomahawks
sacred stones kept by the boylyas or sorcerers
quartz for the purpose of making spears or knives
stones for spear heads, serrated and chipped
stones for making serratures in spearheads
stones or chips used at corroborees (circumcision & subincision)
stones used in scarring the body
stones used by natives in their initiation rites
"mungan", curiously carved sandstone implement like a hammer head made by Kimberley native (use not stated)

There is no implement more important to the West Australian than his tomahawk. When the first white men arrived in this State they found themselves transported to the Stone Age. Stone hatchets, chisels, spearheads and tomahawks were in use amongst the aborigines who knew no other metal, but the principal instrument was the stone tomahawk, which must be as old as the human race. Its head is com-

posed of a hard stone, basalt, diorite, granite or greenstone, reduced to the required shape by skilfully striking off flakes, the edge being obtained by grinding. A short handle of any kind of strong, supple wood is attached to it in a most ingenious manner. The handle is made flat on one side, by means of a stone chisel, and then heated sufficiently to bend the flat side round the stone. It is then secured close to the stone with strings made of possum or human hair or kangaroo sinews, the joining being afterwards covered with gum made from the spinifex (triodia irritans) in the north, and from the xanthorrhea in the southern districts. The W.A. natives manufacture two edged tomahawks also.

The W.A. natives also manufacture the two headed hatchet or tomahawk, usually called "kadjo" which differs from all others known on the continent, and indeed it is asserted that no implement exactly resembling it has been found in any part of the world. One edge of this implement is chipped and flaked and is used for cutting and chopping, the other end being employed as a hammer. There is a specimen of one of these in the Perth Museum, the stone being of fine granite, the edge and head not being so finely formed as some specimens in the possession of private collectors. The edge of the hammer is not ground. The handle is formed of hard wood, similar to that used for spears, and is about two-fifths of an inch in diameter and seven or eight inches in length. It is fixed into a groove in the stone with gum from the spinifex plant or the tough topped xanthorrhea. The end of the handle is brought to a sharp point, and as the native uses this weapon for cutting holes in trees, after he has cut a hole for his foot, he reaches up as high as he can and sticking the sharp point into the bark draws himself up with the hold thus obtained. The specimen in the Perth Museum came from the Bunbury district.

Tomahawks are not used as war implements, but there is an endless variety of uses to which they are put by the natives, the making of shields, clubs, wommerahs, spears, the stripping of bark for the hut, making holes in the trees to climb them, fashioning log floats, cutting down hollow branches of trees for honey and opossums found in them; with its aid the native obtains water from the roots of the

mulga tree or in the boles of a species of eucalypt.

In Worsnop's "Aborigines", P. 110, there is an excellent drawing of a tomahawk head made of black basalt which was found at Lennard River, Kimberley. It is ground towards the cutting extremity, and the original thickness and bulk has been reduced by knocking off flakes from both its sides. The stone "axe" has been found both in the rough and the polished stage and has been used without a handle fixed to it and with one. To polish and sharpen it a sandstone surface was necessary. In N.S.W. there is a sandstone deposit which has served for the purpose of sharpening stone axes for centuries. The axe is usually five or six inches in length, three or four inches broad, and weighs from one to six lbs., sometimes less. The cutting edge has always the broad curve. The stone axe of W.A. differs from those of the other States. It is more roughly fashioned and has a much shorter handle.

The next implement is the chisel which is made by fixing on to the end of a short stick (or to the meero) by means of string and gum, a sharp piece of quartz or flint. It is used in the same manner as the whites use a similar instrument. With this, the natives point their spears, ornament their shields, clubs, boomerangs, head decorations, etc. and complete the hollowing out of their wooden water vessels, the tomahawk serving for the rough work in connection with the making of these vessels.

The stone knife has been found in many parts of W.A. The stones usually white are of a hard dense quality, diorite, greenstone or quartzite. They are not ground or polished, but fractured in such a skilful manner as to leave a very fine serrated cutting edge, somewhat similar to that of a saw. Five or six of these stones form the "blade" and these are fixed on to a small wooden handle with gum. The knife is used for skinning animals, cutting up meat, scraping kangaroo skins and for av ariety of other uses. It is never used in battle by the W.A. natives. Another kind of knife used by the natives in the operation known as the "terrible rite" is made from a thin piece of quartz or crystal, about five inches in length and triple edged, the cutting edge being very irregular in outline and terminating in a slightly jagged but very sharp point. The surface

is perfectly smooth. There is no handle, the end of the blade which at its insertion is about 2 inches in width being stuck into a piece of resin about two and a half inches in length. This knife is always preserved with much secrecy after each operation, the native medicine men carrying it about in a sheath made for the purpose, of bark and hair string. Sometimes this sheath is painted with pipeclay, and ornamented with bright feathers.

The stone chisel is another very handy instrument much used by the natives, it is of varying lengths, but the chisel most commonly in use is a sharp pointed piece of quartzite about two inches in length and sharpened at the point. This is set or fixed on to a handle of wood some twelve inches long with the usual gum; it is used for putting the finishing touches to the inside of wooden water vessels, shaping and making shields, pointing spears, and occasionally in carving, though this is mainly executed by means of shells and bones. (This paragraph to be corrected or verified. The "juno" of the Nor'West natives.)

Adzes are made somewhat larger than tomahawks and with handles of varying sizes a groove is made in the centre of the stone into which the handle is fastened with string and gum. These are used for hollowing out wooden vessels, making shields, etc. (Have seen no adzes - D.M.B.)

Jagged stone spear heads were in use by the Perth natives, on the arrival of the whites in this State, the edges of the spears having pieces of flint attached to them with blackboy gum for a distance of twelve inches below the point of the spear.

The serrated spear heads, peculiar to the Kimberley district, are made of flint, quartz, lava and other hard substances. These are most ingeniously constructed, and are deadly weapons in warfare. They are about six inches in length and terminate in a very sharp point. Both sides are serrated. The serrature is evidently made by a sharp stroke with some instrument but it is effected without leaving the least mark of the blow. These heads are affixed to the top of the spear with gum. Since the arrival of the prospector and squatter in those regions, and with the advent of the telegraph and the whiskey bottle, the natives have exercised their ingenuity by making serrated spearheads from the insulators which they succeed

in breaking and the various glass bottles which mark the progress of the white man. (Mentioned before)

The chipped stones used sometimes for skinning animals are flat, of irregular shape not more than two inches in length and flaked so as to leave a slightly pointed sharp edge. There is no handle affixed. The native holds the blunter part of the stone in his hand and placing the animal between his legs as he is seated on the ground skins it at his leisure.

Stones for sharpening spears and tomahawks are also of special construction. They are chipped and flaked to a great thinness and present a certain roughness of surface necessary for the uses to which they are applied.

The sacred stones used by the boylyas or sorcerers are of great importance, and their possession is guarded with jealous care. (Have seen no southern specimens as yet.) These stones play a very great part in the methods used by the medicine men in healing or causing diseases. They are usually pieces of crystal or crystal quartz or some bright stone of oval, round, square or diamond shape, or chipped into a flat shape about an inch in width. These are very powerful magic weapons in the hands of a medicine man or boyl-ya. Should he entertain a dislike towards a native he will enter his body in the form of one of these crystals and unless a rival medicine man is at hand to"perform an operation" and draw out the piece of quartz, the native who has been "possessed" will suffer intense agony. The sick natives from whom these pieces of crystal are taken by the medicine men are sometimes allowed to keep them and they cherish them with much reverence and great secrecy.

There is amongst the Southwestern Australians another sacred stone called "teyl" which none but the boylyas or priests may touch. (Haven't seen this.) Nothing would induce an ordinary native to touch or take these stones. In mentioning this stone Grey draws attention (Grey's Journal, 340, II) to the accordance of this word in sound and signification with the Baetyle mentioned in Burder's "Oriental Customs" (vol. I, 16) "And Jacob rose up early in the morning, and took the stone that he had put for his pillow, and set

it up for a pillar and poured oil upon the top of it and he called the name of that place Be-thel. Gen. XXVIII, 18. Bochart, a learned writer, states that from this conduct of Jacob and this Hebrew appellation, the name and veneration of those sacred stones called Baetyle so celebrated in all pagan antiquity, were derived. These Baetyle were stones of a round form supposed to be animated by means of magical incantations, with a portion of the Deity; they were consulted on occasions of great emergency as a kind of divine oracle." The crystal gazing mania which became so fashionable in London some years ago, is but a revival of those old Pagan beliefs, and there is very little difference between the "sacred stone" of the aborigines, and the Egyptian crystals of the up-to-date "seers", except that in Australia the ceremony is performed without the usual accompaniments of soft and subdued lights and quasi-harmonious surroundings.

The belief in the efficacy of those sacred stones is common over a great portion of the continent, and is mentioned in "Threlkald's Vocabulary", P. 88 and Mitchell's "Expeditions", 338, II.

Certain small pieces of quartz are fashioned exclusively for the purpose of making spears or knives, these are usually composed of hard flinty substances. They are about an inch and a half in length, the edges being flaked in a peculiar manner. Teeth as fine as those in a fret saw and equally regular, are cut on either side of the spear heads of flint, glass or lava from which the natives make these implements, ending at the top in a most regular and finely shaped point. Serrated spearheads and arrow heads have been found in various parts of America and Europe but the spearhead of the Kimberley native far excels those that have been found in any other part of the globe. The serrated spearhead is only manufactured by the aborigines of the Kimberley district.
(To be corrected. Will Mr. Fraser lend the knife obtained from Tambrey for illustration and description.)

The stones used by the natives in their initiation rites are flat, rough edged pieces of flint. One side is flaked rather finely and is brought somewhat to a point. With this instrument they per-

form the rites of circumcision and subincision. These stones, like the sacred stones, are very carefully guarded and are always kept by the older men of the tribe, and the boylyas or sorcerers.

Another kind of chipped stone is used by the men in scarring their backs, breasts and arms, The stone is about an inch in width and very unevenly chipped or flaked. With the thin edge they make wounds of a certain length (from two to six inches) and about half an inch deep. They draw the lips of the wound apart and fill the opening with ashes or clay. By this means a raised scar is made, of which they are very proud. The markings vary in different districts, some being much more elaborate than others. The women scar their breasts with their own particular piece of stone which they also use in cutting their arms, head, legs and body on the occasion of a tribal death.

A peculiar implement of sandstone, oval-shaped, about four inches in length and two and a half inches in diameter was carved by a Kimberley native and is now in the Perth Museum. Towards one end there is a circular beading. It is shaped somewhat like a hammer head and is called "mungan" by the Kimberley natives. Its use is not stated.

The nalgoo root is a bulb shaped vegetable resembling in taste a small English potato. The natives grind these by placing a few of the bulbs at a time between the stones with the left hand. The "tap tapping" of the various mills is often heard far into the night in the "harvest time". Sometimes a little water is poured into the hollow and the roots being pounded with it form a kind of porridge which is either baked or eaten raw. The various seeds are ground in much the same manner and are also sprinkled with a little water during the process of grinding. A paste is thus formed which is cooked in the ashes. Many of these seeds and roots when cooked have a very pleasant taste. Captain King and Captain Grey mention having seen millstones at Mt. Cockburn and Hanover Bay and also Prince Regent River. Some of these grinding places were of circular form, the circle of large flat stones being placed round a central fire.

There is another flat round stone which is used by the Kimberley natives at their corroborees though for what purposes has not yet been ascertained. (Marginal note : phallic emblem) There is no chipping done on this stone, neither can it be used for cutting. One of these stones, now in the Museum at Perth, is a round piece of flint about a quarter of an inch thick and an inch in width. It is of a brown colour and from its smoothness has evidently passed through many hands.

The native women use stones to sharpen their fighting sticks and sometimes to ornament them. The stones are of various shapes, oval, round, square, irregular and are made of felspar, greenstone, or some other hard substance. They are chipped and sharpened and are occasionally used by the women in lacerating themselves.

Many of these implements are far superior to the flint instruments found in the European drift and in America. The spear heads in particular manifest a degree of manual dexterity that cannot be surpassed, and a comparison between the serrated spearheads made by the Kimberley natives and the arrow heads of Europe and America proves conclusively the superiority of the Australian weapon. The difficulty of fashioning these spearheads can be realised by an attempt at their manufacture even with the superior weapons of civilisation. In all cases failure will be the result, for the method of their fashioning is an art that civilised man cannot practise with success.

The "Stone Age" was productive of many more implements and weapons, but it is only with those still in existence and in use at the present day amongst the W. Australian natives that this book deals. The implements noted above are still used by those tribes which have not come into contact with the whites, but it will not be long before the white man will have penetrated into the hitherto unexplored deserts and as it seems an inscrutable law of nature that the influx of the white race should result in the extinction of the native peoples, a few more years will see scarcely a trace left of one of the most ancient of the human race. The stone implements belong to a period so remote that the lapse of time can scarcely be

measured by years, and hence it cannot be denied that in the possession of those people whom we mistakenly call savages, they have a high significance, and indisputably tend to point out the extreme antiquity of the Australian race.

From J.O. Brown, 28/2/05

The chief weapons used by the Nor'West natives are :+ Kur'rajadda, a long spear used mainly for hunting and spearing each other. It is thrown with a wal'burra or mee'ro (spearthrower). Mar-kun-doo, wil-gar'-doo and koo'-jee-booka, three short spears commonly used for stabbing, but not often thrown. They are barbed, the barbs being secured with gum and sinews. The wee'ro (similar to the Southern ky'lee), wau'ka-burra, a throwing waddie, wan'na a short heavy stick about 4 feet in length, with which the women fight and the yar'ra (or shield) which is carved and ornamented and bound round with sinews and daubed with gum and pipeclay. The sight of the natives is very keen and many of them are remarkably skilful in the use of their weapons. Besides these weapons they have stone axes and hammers. These are short heavy sticks with stone heads made fast with sinews and gum, and also a rough chisel, made by similarly fastening a sharp piece of flint on to the top of a short stick, like a small waddie.

The natives of the Southwest sometimes put a sharp kangaroo tooth at the end of their wommeras which was used for grooving and shaping spears etc. The wommeras were made with the aid of their hammers (kodja) and their hammers were made with stone and gum and spearwood. The hammers were not ground, but were merely chipped with another piece of sharp flint. The chipped flint was put at one side and a blunt piece of shaped stone at the other, the two pieces being joined together with gum. The gum was softened by fire and a hole was made in the centre through which a handle was put. The finished weapon thus served two purposes; an axe to chop trees with and a hammer to break the bones of the kangaroo etc.

The women prepared their wannas with a flat sharpened flint and with jan'ny, the native name for the bark of the banksia and hakea trees. The wood of which the wanna and dowak are made is charred in the fire and then rasped to a point either with the flint or the bark. Where the bark is not procurable the flint is used and vice versa. When using the flint for this purpose the implement is always held in the hand downwards and is worked towards the operator.

The men's weapons are : various kinds of spears, kodje (hammer), ky'lee, dabba or tabba (native knife), dowak or towak (fighting stick) and wommera (throwing stick).

The weapons of the Injibandi natives were the kylie, shield, boonamarra (digging stick), koorjarra (spear), boodboo (tomahawk), kandee (stone for scarring, cutting, etc.), wanna (fighting stick), peelarra (throwing spear), moolo (knife or chisel), koo-je-booka (fighting spear). ------

Mr. A. Morton, Curator of Hobart Museum, who visited the Murchison district in 1902, found that the natives there used chipped stone implements similar to those used by the Tasmanian aborigines. It is a remarkable fact that unground chipped stone implements have been found in Europe, America, Egypt, Australia and Tasmania. Professor Tylor also drew the attention of scientists to the similarity of the palaeolithic implements of the Murchison and Tasmania.

King states (King's Voyages, vol. II, 140) that the natives of King George's Sound used the native knife or "taap" in the following manner : "After they have put within their teeth a sufficient mouthful of seal's flesh, the remainder is held in their left hand, and with the taap in the other, they saw through and separate the flesh, the natives....hold the knife underhanded and cut upwards."

The names given by the Sunday Islands natives to their various weapons and ornaments etc. differ from those of any other part of the State. They are as follows :-

kyley	jeewah
spear	erolla
shield	marka
digging stick	moongor
basket	orladda
hatchet	neelamurra
belt	barlie (this name is also given for "shade" and "native hut")
necklace	barrgi
string	albay
pearl shell ornament	koan
water vessel	umballa ?

The names of the weapons etc. used by the Maura (New Norcia) natives were similar to those of the Perth tribes. "Keejee", spear, wommera (spearthrower), kaylee, and dowak, a tomahawk made of stone, sharpened on one side and blunt on the other, fastened with gum to a wooden handle.

The weapons used by the Yerkla Mining, according to H. Williams, were very primitive, though effectual in their hands. They had two kinds of spears, one with a simple round point was used to throw at animals and was about 9 or 10 feet long. When on the warpath they armed their spears with a piece of bark let into the point. The bark remained in the wound and kept it open, causing much pain and suppuration. (Howitt's S.E.A. 761.)

Whitchurch states that the names of the weapons used by the Busselton natives are as follows :-

Spear	geejee
" (glass)	geejee bweril
" (barbed)	geejee nungar
" (sharp pointed)	" durdin (boordon?)
spearthrower	meera
fighting stick	dowak (2' long, 1 $\frac{1}{2}$ " thick, jamwood)
boomerang	kayley
knife	dabba (16" long, pieces of quartz stuck in with gum to length of about 5".)
hammer	kaudja (used for climbing trees, etc.)
digging stick (women's)	wanna

Kolker (kalga) is the name given to a stick about 20 feet long, and hooked at one end which is used for pulling down the blossoms from banksia trees.

To be verified and added to :

Of the wooden implements and weapons in use amongst the West Australians the following are of chief importance :

The kyley, or boomerang

The spear - fishing, fighting and hunting

The woomera (or meero), or spearthrower (see Smyth, I, 319)

The dowak or throwing stick

The fighting sticks used by the women

The yam stick

The wooden "scoop" or water vessel

The shield (see Smyth, I, 321 & 338) made of "bastard cork tree"

Large war club, used by the natives of the Nor'West

Message sticks

Awl found in Kimberley (Worsnop 114)

Wooden swords?

Bone needles or skewers and awls or piercers of bone; shells, sand, and rough rasps made of the bark of trees. Baskets, buckets.

It is stated that a kind of curved wooden sword was at one time used in the Southern parts of W.A. (Worsnop's Aborigines, 135)

Native shovels, used in making wells.

Wooden Implements and Weapons

The Boomerang

The boomerang has been the subject of many learned discussions amongst scientists. Its affinity with the Indian and Egyptian boomerangs which were discovered at Thebes, Egypt, and Kattyawar, India, makes it one of the most interesting weapons of the Australian race. Its construction is stated to be formed on scientific principles, although its peculiar convolutions have never yet been explained scientifically.

There are at least two kinds of boomerangs or "kyleys" in W.A., (1) the fighting weapon, and (2) the"come back"boomerang. Both are of much lighter weight than those in other parts of the continent, seldom exceeding four or five ounces. They are made of various kinds of wood, iron-bark, bloodwood, sheoak, jamwood, acacia and some species of mulga. A piece of wood of the desired length is taken from one of these trees and cut into the right shape with the aid of tomahawk and stone knife, the eye of the maker guiding each stroke so accurately that when completed the weapon required neither heating nor bending. It is usually about two feet long, two and a half inches broad, three-tenths to one-third of an inch thick and rounded at either end. One side is flat, the other very slightly rounded, the edges being very sharp and knife-like. There is a slight twist in all kyleys but this is less noticeable in the thin weapons of the West Australians than inthe heavier ones of the Eastern states. It is this twist in the missile which enables the thrower to give it the rotary motion that causes its return to him or otherwise as he wills. Its efficacy consists in its rotation by means of which it can sail up to its quarry and knock it down with its rotating arms. If the boomerang strikes a bird it will kill it, if not, it nearly always returns to the thrower. When well thrown, the furthest point of the curve described by the W.A. kyley is usually about one hundred and seventy yards from the thrower. The greatest distance to which those of the Eastern States can be thrown is 150 yards.

The W.A. kyleys are not carved or colored as are those of the Eastern part of the continent, but being made of hard and beautifully grained wood, the natural tints and veins, some of which are a reddish

brown, others of a darker brown, with light coloured edges, render them by no means inferior to the weapons of the Eastern natives. The natives are equally skilful in making left handed or right handed kyleys but the flat side in gyration in either of these is always towards the earth. All the W.A. kyleys fly further than those used by the Eastern natives.

The discovery that the centre of gravity is not in the kyley itself was made by Sir Thomas Mitchell, who in 1850 in a paper read at the United Service Institution, entered at length upon a description of its remarkable properties which he stated had caused the remark to be made by a Vice President of the Royal Society that "its path through the air was enough to puzzle a mathematician." The centre of gravity was found by attaching a thin slip of wood to the inner part of the kyley and using the point of a needle for a support, the weapon was then balanced and made to rotate fiercely. It cannot be balanced in any other way. The invention of the boomerang propeller for ships was according to Sir Thomas Mitchell, the outcome of numerous experiments with the Australian kyley or boomerang.

The "come-back" weapon is usually regarded as a toy, and though sometimes used in battle, it is not deemed an efficient missile when serious engagements occur. It is almost similar in make to the fighting weapon and like it can be fashioned to throw with either hand. These boomerangs vary greatly in shape, a skilful native never turning out two of the same pattern. He usually experiments with it and chips and works it until it obeys his will by returning in the manner desired by him.

A native from the Eastern States will in an incredibly short space of time, become familiar with the peculiarities of the West Australian boomerang, although the weapons differ so much in weight to the larger and heavier ones which they are accustomed to use, and in like manner a W.A. native will rapidly master the intricacies of projection connected with the Eastern weapons.

Mr. Hubert de Castella has suggested that the aborigines may have invented the boomerang from observing the shape and peculiar turn of the leaves of the white gum tree, which gyrate in their descent to the ground in much the

Brough Smyth
I, 316

same manner asthe boomerang, for if one of these leaves is thrown straight forward it makes a curve and comes back to the thrower. Brough Smyth mentions this hypothesis and gives it some semblance of probability by suggesting the idea of some old man making a fac-simile in wood of the leaf for the amusement of his children, his curiosity at its peculiar motions leading him to fresh experiments until finally the perfect boomerang was evolved.

A scholarly paper on the great antiquity of the boomerang was read at the Royal Irish Academy in 1838 by Mr. S. Ferguson M.R.I.A. who stated "that it was in use in ancient times amongst the peoples of Europe, that there is in Australia a race of men of Indo-European origin, and that the boomerang was one of the weapons introduced by this race into Australia." The writer quoted many ancient authorities in support of his view, and opened up a wide field of speculation amongst scientists desirous of tracing the international resemblance between those peoples of the old world whose weapon was the boomerang and the Australian race to whom it now belongs.

Many writers of note have followed up this view and at the present day the "Dravidian theory" seems to obtain the greatest support amongst leading ethnologists.

It may be pertinent to remark here that there is now in the Museum of Perth a kyley made by the De Grey River natives, almost exactly resembling an implement found in Thebes and described (and illustrated) in Wilkinson's "Ancient Egyptians", vol. I, P. 364-5. (Smyth's Aborigines, I, P. 299.)

"The curved stick or club was used by heavy and light armed troops as well as by archers....and the Abahdeh, content with this, their spear and shield fear not to encounter other tribes armed with the matchlock and yatagan. In length it is about two feet and a half and is made of a hard acacia wood." (Note : Abahdeh = Abady, the name of a bideer native of Perth in olden days.)

Mr. Durlabher says the message stick or "bamboorar" as it was called by the Nor'West natives, was only used as a token and passed from one tribe to another by a messenger who delivered his message verbally and then presented the token as a proof that what he had said was true.

The names of the weapons used in the Sherlock district (Balla-mon-gerry) are thus given by Willambong. Kyley, walbarn (spearthrower), magoondo (spear), yarra (fighting stick), walka burra (another kind of fighting stick).

The weapons used by the Yerkla mining tribes are, according to Mr. Williams, very primitive, though effectual in their hands. They have two kinds of spears, one with a simple round point, is used to throw at animals, and is about nine or ten feet in length, and is pointed with one short barb three quarters of an inch long. When on the warpath they arm their spears with a piece of bark let into the point. The bark remains in the wound and keeps it open, causing much pain and suppuration. They use the wardan or spear-thrower, also a chopper for cutting up animals cooked and uncooked, it being pointed with a sharp piece of flint. The women have the usual stout stick for digging purposes, sharpened at one end, and it also serves as their weapon. The men have a short throwing weapon about fifteen inches long, sharpened at one end with which they are very expert.

Jubyche stated that the species of wood used for making the various wooden implements and weapons was as follows :-

kyleys, raspberry jam (acacia acuminata)
wanda (or wandoo), Eucalyptus redunca

Spears, spearwood, acacia doratoxylon

Wommeras, jarrah or mahogany, Eucalyptus marginata

Wannas, wanda, Eucalyptus redunca

Dowaks, wanda, " "

Bark vessels, cajeput bark, melaleuca, leucadendron

Hammer handles

Knife handles

Jubyche was taught how to manufacture these weapons by his father, who also showed him how to chip hammers etc. to the desired sharpness. All the weapons were made with the aid of the hammer, a sharp piece of flint, and fire. The hammer roughly shaped the implement which was then put on the fire and slightly charred, the charring was scraped off with the flints and the process repeated until the desired shape was obtained.

The bark vessels were cut from the tree with a wanna, or digging stick and then softened by fire and the ends tied up with Zamia fibre when the vessel was ready for use. These vessels were called "yoom-buk".

Yoombuk-gul bo-ma yual gatta
Bark vessel, break and bring here.

Women sometimes made their own wannas. Occasionally their husbands made them, but the men never used the women's wannas.

The Wommera, or Spearthrower (To be verified or added to.)

It is in the use of such weapons as the kyley, or boomerang, and the wommera or spearthrower, that the Australian aborigines show how well they are acquainted with nature's laws. By means of the wommera the spear acquires a much greater momentum and velocity, than when thrown with the hand alone. According to mathematicians these weapons "are nicely adapted to the resistance of fluids and the laws of gravitation, and are strictly consistent with whatever science teaches and not susceptible of improvement by anything to be learnt at colleges."

The W.A. wommeras are of many patterns, but all are equally effective. Some are long and narrow with spoon shaped handles, others are short and wide having handles made of spinifex or xanthorrhea gum. Most of the W.A. wommeras are carved in various patterns.

The short wide weapon is the most common. In the Southern districts it is made of jarrah, and is in length about 22 inches, its breadth not greater than six inches at the widest part. The paint for receiving the end of the spear is made of very hard white wood and is fastened to the head with gum and there is a lump of gum placed at the other end as a sort of handle and to prevent the implement from slipping in the hand. Its weight does not exceed ten ounces. The natives carve these implements with their stone chisels and smooth them with rasps made of the rough bark of trees. When finished they have a highly polished appearance, the various species of woods of which they are made being of very fine grain.

Jarrah, raspberry-jam-wood (a species of wattle so called from the scent of the wood being like that preserve), several kinds of mulga, blood wood, beef wood, native cherry tree, blackwood and other

varieties are all used in the manufacture of wommeras.

In placing the spear on the wommera ready for throwing, the spear, which has been hollowed out at one end is pressed firmly against the point in the wommera made to receive it. It is held by the lower part in the palm of the hand, clasped firmly by the three lower fingers with its upper part resting between the forefinger and thumb, the arm is drawn back, the weapon levelled to the eye, a quivering motion given to it to steady it and it is hurled with a rapidity force and precision quite incredible.

Eyre's Expeditions II, 307 Illus.

King is the first person to mention the name of the throwing stick, giving the K.G.S. rendering "mearas". (Illustrations in King's Voyages, P. 138-9, II.)

Some of the W.A. wommeras are very highly ornamented, particularly those of the Murchison district.

The Israelite Bay wommera is one of the spoon handled variety, made of light wood, uncarved, about three feet in length and not more than two inches in width. The spoon handle is made from the wood itself. It is equally effective with the wider weapon.

The Esperance Bay wommeras are only about two feet in length, and quite four inches wide, slightly carved and with the gum attachment for the handle. They are made of dark wood and are very thin and well-polished.

The Bunbury wommeras are also short and wide, some of them being six inches across at the widest part. These are exceedingly well made, of jarrah wood, and are carved and polished. When the white wood of which the point is made gets broken or worn, its place is filled by a kangaroo tooth well set in with gum and answering admirably for the purpose.

The natives of the Pinjelly district used both kinds of wommera, the short, wide weapon and the spoon-handled variety, the former slightly grooved and carved and of very finely grained dark wood, the spoon shaped weapon being of light wood and unadorned.

In the Greenough district very short wommeras were used only about eighteen inchesin length and four in width. These are also slightly carved and well finished.

The Geraldton district turns out a great variety of Wommeras, of all shapes and sizes, from the long narrow weapon to the very short broad instrument, some are well made, richly carved and polished, and shaped, while others have neither carving nor polishing and are very roughly and irregularly fashioned.

The Murchison natives use the long narrow wommera, although many specimens of the wide short weapon are to be met with in the district. The long light weapon is as usual, uncarved, but the shorter ones are most elaborately worked, the under side being convex, and smooth, the upper part flat, very neatly carved and covered with ochre. These natives take great delight in ornamenting their many weapons and ornaments, the finest carved implements being found in this district. A curious implement has been found amongst the Murchison aborigines the like of which has not hitherto been seen in any other part of the continent. It is a long flat piece of dark wood, about twenty feet in length and from four to six inches in width and only one-fifth of an inch in thickness. It is pointed at either end and very fantastically carved with narrow groovings of a certain pattern, either with diagonal lines running down the whole length of the wood, or with diamond shaped groovings or squares. These instruments are used during certain initiation rites, but their part in the ceremony is kept secret from outsiders and the implements themselves are most carefully hidden after each "celebration".

The Ashburton wommera is a broad short implement about 22 inches in length and quite six inches in width. The edges are not so evenly finished off as those in the Murchison district, but some carving and polishing is done on them. The natives of this district pay more attention to their many barbed spears, than to any other implement or weapons manufactured by them.

The De Grey and Roebourne wommeras are very similar in construction, both being about two feet in length and from four to five inches in width. They are carved unevenly and are mostly unpolished.

The spearthrowers of the Broome and East Kimberley natives are the longest of any in use in W.A. They are quite four feet in length with "spoon handles" made from the wood itself. They are not more than two and a half inches wide and taper towards the end.

Light wood is used in their construction and no carving or polishing is attempted. It is questionable whether these wommeras are manufactured for use or ornament and if they are used whether they retain the same leverage that the short broad weapon undoubtedly gives to the spear.

The West Kimberley natives use the short weapon, its length being two feet and the width four inches, it is grooved in diagonal lines running down its length, and is made of wood capable of a good polish. But the Kimberley native bestows most of his attention on the manufacture of his flint and glass spearheads, which he brings to the utmost perfection possible and spends but little time and trouble upon his other implements.

The Wyndham natives' wommeras are two feet long and six inches wide, very roughly carved and unpolished.

The wommeras of the Fraser Range tribe are plain and straight about three feet in length and having a piece of sharp flint stuck in the gum which formes the handle. (Helms 269)

Sadlier in his Aborigines of Australia, P..8 states that "the natives having no powers of invention, the throwing stick (or wommera) could not have been invented by them but must have descended to them from... a higher ancestry."

If the natives have invented the wommera after their arrival on these shores, it certainly proves that they are not the despicable race of "baboons" which some ethnologists believe them to be. In this connection, the Rev. John Fraser, B.A. Ll. D., a keen student of Australian ethnology, states that the beginnings of civilisation rose from the race of Ham (to which race he maintains the aborigines belong); to them we owe the first rudiments of the science of astonomy, the art of building, the skill to work in metals, the invention of pictorial writing and probably of the alphabet; and if the present representatives of the Hamites do not now uphold the early promise of the founders of their race it is not wise to denounce them as the lowest of barbarians, for there may have been conditions in their ancient history which have dragged them down from their first estate, and have kept them down, their environment being unfavorable to recovery. It is said that experiments made at the bidding of the great Napoleon proved that

the wommera gave an additional projectile force of about 50 yards.

The word "wommera" is stated by Curr to have been the term used by the long extinct Sydney tribe and the Rev. John Fraser in his book, "The Aborigines of N.S.W." says the weapon is known everywhere as the "womara" and to use any other name for it only causes confusion. In W.A. it is "mero", "meara" or "wommera", the two former being probably contractions.

In Spencer and Gillen's work on the "Native Tribes of Central Australia", an illustration of the "spoon handled" wommera is given (579, I), the weapon being in use amongst the Warramunga and other northern tribes of South Australia. The b road spearthrowers are called "amera". They are used by the Urabunna, Arunta, Luritcha, Ilpirra and other central tribes. These weapons differ slightly from the W.A. wommeras, in that they are somewhat concave, whereas the W.A. weapon is quite flat. They are also unadorned with native carvings or lines.

The Dowak or Throwing Stick

The dowak or throwing stick is a stick made of very heavy wood, about 22 inches long and varying in diameter from three quarters of an inch to one and a half inches. It is slightly curved and notched at one end to form the handle. The sticks are either smooth or fluted, the end being brought sometimes to a blunt point.

These dowaks are used more or less by all the West Australian tribes, and except in size, there is no material difference in their construction, other than the variety of woods of which they are made. They are used in knocking down game and for war purposes.

The fighting sticks used by the women are sometimes two and a half feet in length and two inches in diameter, made of very hard heavy wood, fluted and capable of administering severe wounds. (To be corrected. Some wannas are 4 or 5 feet long.)

These are principally in use amongst the Nor'West native women, who punish each other very severely for various offences. The method of punishing a woman for certain offences is the same in all tribes. In Beagle Bay a Derby woman deserted her man and fled to

the R.C. Mission where she remained and where in due time she married a Beagle Bay native. One day a strange woman arrived at Beagle Bay and seeking out the runaway belaboured her most soundly on the head with her heavy throwing stick. The poor victim meekly bent her head to receive the strokes, and remained standing until a final blow rendered her insensible. Her assailant proved to be a new wife belonging to the Derby native by whom she was commissioned to travel across country from Derby to Beagle Bay, a distance of some minety miles and administer castigation to the deserter. Whether the man accompanied his new wife to Beagle Bay was not ascertained; if he did, he kept at a safe distance and left the carrying out of his revenge to the woman.

When two women engage in a fighting duel, they each provide themselves with one of these sticks and standing in front of each other, one bends her head and receives a heavy blow on the crown, then her turn comes and she deals an equally heavy blow to her opponent whose head is bent for the purpose, and so the duel proceeds till one or the other falls, when the fight is declared off.

The yam or digging stick is but a longer variety of the fighting stick only somewhat more curved. (wanna) With this implement the native women dig up the various warran, yam and other roots that form part of their vegetable foods. The method of digging is as follows. When the warran or yam ground is reached, the women proceed to insert the stick into the ground in a straight line, as far as it will go, and then work it from side to side until the earth becomes cracked and broken. The stick is then worked about amongst the broken ground until the roots are exposed. Extensive tracts of warran ground were seen by Grey in his overland journey between Gantheaume Bay and Perth.

The yam sticks can be used as weapons of offence or defence on occasion and also for the purpose of knocking down game.

Spears, etc. at Perth Museum

Israelite Bay, 12 feet straight, 1 inch thick
Spearthrower, 3 feet long, narrow (2 inches)
Boomerang, comeback variety, shield 3 feet long, 4 inches wide, uncarved.

Esperance Bay, badly made spears 7 & 8 feet in length
boomerangs, come back variety
yam sticks
spearthrower, 2 feet long, 4 inches wide

Bunbury, spears 13 feet long (tipped), ⅛ inch thick
shields uncarved, 3 ft. long, 4 inches wide
spearthrowers 2 feet long, six inches broad, well made

Pinjelly spears (tipped), 8 feet long, ⅛ inch thick
spearthrower, 2½ feet long, 2 inches wide, also 4 inches wide
boomerangs, various kinds, yam sticks 2½ feet long, 1½ in. diameter
shields 2½ feet long, 8 inches wide, painted red and white and carved

York spears tipped, 10 feet long, ⅛ inch diameter
boomerangs come back variety
shield 2½ feet long6 inches wide, wide lines in red and white

Kanowna, spears 10 feet long, ⅛ inch diameter
yam stick (?), 5 feet, smaller ones 2 feet.

Aboriginal carvings on boards 20 feet and 8 feet in length and 4 to 6 inches wide, used at corroborees during initiation rites and carefully hidden at other times, Murchison.

Greenough, spears 12 feet long (some tipped), ⅛ inch diam.
boomerangs "come back" variety and one or two others
shields 2 feet long, 6 inches wide, red and white lines painted
spearthrowers 18 inches long, 4 inches wide.
Yam sticks, crooked

Geraldton spears 10 feet long, some barbed, some tipped, ⅛" diam.
boomerangs well shaped, some come back varieties
yam stick very long (3 feet) and sharply pointed
spearthrowers in great variety
shield 2 feet long, 6 inches wide, carved deeply. Only six lines of red and white painting
chisels fastened to end of carved round sticks

Northampton spears 10 feet tipped and slightly carved, ⅛" thickness
yam stick
shields, some carved and painted with narrow lines, others only painted wide lines, three red, four white lines on one shield
boomerangs, both come back and curved
small pointed spears (?) 18 inches long, pointed at both ends

Murchison boomerangs (come back)
shields carved in single lines downwards
spearthrowers long and narrow
hair ornaments 6" to 2'.
aboriginal carvings used in corroborees, 2', 4 and 5', 2" wide, initiation ceremonies

Mt. Magnet yam sticks
shields
boomerangs
hair ornaments

Ashburton
Many varieties of many barbed spears, 12 & 14 feet long, 1" diam.
Shields 3', rounded and pointed, large and small, lines painted, carved and uncarved
Spearthrowers, 2' 6"

De Grey
come back boomerangs, and one

(similar to those in Theban sculpture)
spearthrower 2' long 5" wide

Roebourne
Spears 15', single and double barbs, 1" diameter
boomerangs come back and curved
yam sticks with gum on one end
shields with wide lines, carved and painted
spearthrowers 2' long, 4" wide.

Beagle Bay
koolmee
come back and other boomerangs, some 3" wide
spears tipped and barbed
shields painted, carved and curved

Broome
shields uncarved
boomerangs, come back
yam sticks
spearthrowers, 3 & 4' long, "spoon handles"

Kimberley
spears 15' long, barbed, tipped with stone serrated spearheads and single barbs
spearthrowers, spoon handled, 4' long, 2½" wide but tapering towards the end
spearthrowers 2' long, 4" wide.
shields, carved and painted in wide lines
shields carved and painted in wide lines
boomerangs come back and almost straight
shields with lines only transversely, curved, unpainted, and one with a kind of walls of Troy pattern, a square with inner squares (this is a Wyndham shield)
wooden vessels hollowed out of solid wood, made also of bark, from the gnarls of trees, varying in size from 3' to 18".
spoon headed spearthrowers, in E. Kimberley
short wide " in W. "
boomerangs very wide, 3".

Wyndham
spears 12' long, very thin, barbed and tipped
yam sticks
spearthrower 2' 6"
boomerangs

The Spear

(To be corrected, added to and verified.)

The three principal kinds of spears made by the South West Australians are the war spear (boordon, boryl), the hunting spear (boordon) and the fishing spear (gooada), all three differing materially from each other and each having its own definite use. The war spear has many varieties all of which are capable of inflicting dangerous and often deadly wounds.

The boryl or stone headed spear is probably the most deadly of any. It is made of very hard and tough wood, is about ten feet long, and from the top the native cuts a groove down each side in length about ten inches and into these grooves he places small chips of jagged hard quartz or flint fixing them securely with gum. A wound from this kind of spear is exceedingly dangerous as if it hits the native fairly it enters his body up to the lower barb and can only be extracted by cutting the wound open and drawing it through. When the crude "surgical instruments" of the natives are taken into account it will be seen that as much danger attaches to the withdrawal of the spear as to its entry. These spears are in use amongst the natives of the Nor'West, but they are to be found in some of the Southern districts also and were in use amongst the Perth natives before that tribal became extinct. (Marginal note : Description of spears in Museum only.)

There is another very deadly weapon in use amongst the Kimberley natives. This spear is made of wood, is about ten or twelve feet long and tipped with a flint spearhead beautifully fashioned, with serrated edges, worked up to a very fine point, this flint head is fixed on with gum and in some cases it is so fixed that when the person who has been hit by one of these spears, withdraws the weapon the flint head detaches itself and remains in the body, invariably causing death. Other spears are made by the natives of this district, the many barbs being part of the spear and they have also single barbed weapons.

The Broome and Beagle Bay natives use almost the same kind of spear; a long thin piece of hard wood with a single barb either made of the wood itself or the barb is formed of very hard wood made

exceedingly thin and sharp and fastened to the point with string or sinew and then coated over with gum. As weapons of offence these are nearly as dangerous as the glass headed and double barbed spears.

Description of spears in Museum only

The Roebourne district natives manufacture spears about twelve feet in length and not more than one inch in diameter. The barbs are sometimes cut out of the wood from which the spear is made or another piece of hard wood is sharpened and pointed and fixed on in the same manner as those of Broome and Beagle Bay.

The De Grey River natives use spears somewhat similar to those of the Roebourne aborigines, but some very heavily barbed weapons have been found amongst them, some with from seven to twenty barbs fashioned from the wood itself, and very finely finished. Carving the barbs from the wood of which the spear itself is made is a very difficult and tedious process, and as the barbs are always liable to be broken much care is required in cutting them out, and maintaining the regularity and evenness of the barbs.

The Ashburton spears are from ten to twelve feet in length and about an inch in diameter. These spears are very heavily barbed, and some of them are almost works of art. The variety ranges from the single barbed to a very elaborate quadrilateral barbed spear, one specimen having twenty eight barbs cut from the wood itself, seven on each side. These barbs run down the sides of the spear to a length of about two feet and are most regularly carved and finished to a very fine point. Other spears made by this tribe are triangular having the three sides barbed to a length of about two feet or more. Great patience, as well as skill is required in fashioning these spears, for although the wood is of an extremely hard substance, an accident may cause the breakage of one of the barbs, when the whole spear becomes useless and work has to be commenced on a fresh sapling.

In the Murchison and Yalgoo Goldfields district the natives use spears of various kinds, some of them very heavily barbed on one side only, the barbs in some cases being quite two inches in length and running down the side of the spear to a depth of fourteen or sixteen inches. Others again have short saw-like barbs cut in the wood. Twenty four of these smaller barbs have been counted on one spear.

The Northampton spears are about ten feet in length and half an inch in thickness, usually tipped with a pointed piece of hard wood. These spears are very slightly carved. The natives of this district have also a short spear, pointed at both ends and not more than eighteen inches long. Probably a fishing spear. The spears used by the Geraldton district natives are similar to those of the Northampton district, some barbed, some tipped, none of them showing any special care in their construction.

The Greenough natives used a very long spear twelve to fourteen feet in length and not exceeding half an inch in diameter. These are mostly single barbed, the barb being either cut from the wood itself or tipped with a pointed piece of hard wood fastened with the usual gum and string.

The Eastern Goldfields natives used spears ten feet in length, two thirds of an inch in diameter and with single barbs only..

The York spears are also ten feet long and about half an inch in diameter with single barbs or tipped with white wood points.

The Pinjelly district spears are only eight feet long, half an inch or less in diameter and single tipped. Some of these are made from very uneven wood and show very little care or ingenuity in their manufacture.

The Bunbury district spears are twelve feet in length, half an inch in diameter and tipped with one wooden barb fastened with string and gum.

The Esperance Bay spears are most clumsily made, of crooked wood. They are only seven feet in length and are finished off to a point, having no barbs.

The spears of the Israelite Bay natives are twelve and fourteen feet in length, one inch in diameter, very straight and tipped with a single barb.

All the spears mentioned above are war weapons. There are many varieties of the fishing spear, the principal being a four-pronged spear about six feet in length, each prong having two or three barbs made from the wood itself, the barbs projecting outwards. The points are somewhat curved and fastened to the shaft with gum. With this weapon the natives of the Nor'West spear fish very successfully.

The long thin spears, pointed at both ends, are also used for fishing purposes. It is very interesting to watch the natives spearing fish with these weapons. When the tide is coming in along the Nor'West coast it brings the fish with it and they usually travel up close to the bank in search of food. The native stands perfectly still with arm poised and just as the fish is passing beneath him his spear descends and pierces it right through the middle. It is at once detached from the spear and thrown aside on the bank and the performance is repeated until the native considers he has speared sufficient for himself and family. A native rarely misses his aim and the precision, accuracy and quickness of his stroke, piercing the very centre of the fish, is really marvellous. The natives also use tipped spears in their fishing excursions, the head and barb being fashioned from bone or wood. These are used to spear the larger kinds of fish, jew fish etc., which sometimes weigh over thirty pounds and are to be found on the Nor-West coast. The dugong also is often speared with this kind of weapon.

The hunting spears differ but slightly from those used by the natives for fishing. They are invariably single barbed with strong points, or they are simply brought to an extremely sharp point. These weapons are usually six or eight feet long and only half an inch in diameter; they are made of very hard tough wood and are thrown without the aid of the wommera. The wound they inflict on the kangaroo or emu is not always fatal, but the length of the spear prevents the animal escaping and with one of these in their bodies they are easily run down and despatched with the tomahawk or speared at close quarters in a more vital part.

Great skill is employed by the natives in making the pointed hunting spears; they are beautifully balanced, very light, not exceeding eight ounces in weight, and in some cases are pointed at both ends, the points being exceedingly sharp and fine and very strong. When the stricken animal tries to escape through the bush the spear remains in its body and though it comes constantly in contact with trees and other projections in the animal's progress, it only bends with the impact and acting as a brake the animal soon gives up the

contest, and is secured by the successful spearman.

It may be mentioned here that in hunting kangaroo or large game, when several spears are thrown at the same animal, the spoils go to the native whose weapon first strikes the quarry, even through the wound of itself is not sufficient to kill, or even disable the animal, but this is native law and strictly adhered to by all the tribes. The victor may or he may not share his food with his companions, but this does not affect the law which obtains as to the custom.

Grey states (Journal, I, 162-3) that the natives of the district inland from Hanover Bay made their most deadly spears from vitrified lava which formed the composition of a conical peak of volcanic origin. This rock fractured easily, the fractures resembling the coarse green glass of England. A lump of the rock might readily have been taken for a part of a glass bottle.

The Wonunda (Eyre's SandPatch) tribe made nets and baskets from the bark of the mallee tree (Eucalyptus dumosa) and spears with one barb, which they threw with the wommera. On the end of the wommera held in the hand, a chipped flint was rudely affixed with gum and string and this was used as a substitute both for knife and tomahawk. Shields and kyleys were unknown and their weapons were unadorned with either carving or colouring.

Shields

(To be corrected, added to, and verified)

It may not be generally known that the shields and spears of our natives are undoubtedly the oldest armour in the world and may safely lay claim to the highest antiquity, for when primitive man first felt the necessity of defending himself from the assaults of wild beasts, what more natural for his purpose or more ready to his hand than the thin branch of a tree, pointed at one end, to use as a spear, and blunted sufficiently at the other to form a club at close quarters, a sort of half club, half spear. Then when the efficiency of this weapon had been proved the owner would no doubt keep it beside him for future emergencies and as man is naturally a tool and instrument maker, the first weapons used in self-preservation would gradually become improved by the primitive means at his disposal until the age of fire and flint - the Stone Age - when the weapons could be better shaped and adapted to his needs. Thus may the club and spear have been evolved. The first shield would probably be of strong light bark and would certainly be invented almost simultaneously with the spear, for it is the necessary accompaniment of that weapon, and the only effective defensive "armour" in those early days of human existence.

The shield and spear were mentioned in the Bible long before

any other weapons of offence or defence; they are alluded to in the first of the five books of Moses, as well as in various other portions of the Old Testament, shields were sufficiently important and valuable as weapons of warfare, to have been fashioned and wrought of the most costly materials. Plates of gold or of brass were used in their construction, sometimes they were made all of gold; those that Solomon made were of "massy gold". They were hung up on towers as trophies of victory; the tower of David was adorned with a thousand shields. Thus we have the shield brought to its perfection in that part of the world that is now called Africa.

The aborigines of West Australia, an isolated remnant of prim - itive man, have never advanced beyond the Stone Age. The sudden or gradual upheaval, as the case may be, which separated them from the root branch occurred in this Age, and so we find them with their inventiveness limited to weapons made of wood, stone and flint, though many of their implements exhibit considerable skill and ingenuity. Take their shields for instance. With no instruments for measurement and with the sole aid of a piece of flint they will carve dexterously the most symmetrical lines and undulations on the broad rough piece of bark or light acacia wood, chosen for their purpose. The length of the shields varies in the different districts, as does also their shape and ornamentation. The wood is first cut with the stone axe or tomahawk, chipped and shaped roughly with the same instrument and then with native chisel and knife the work of fashioning the weapon begins. The ends are rounded or pointed as the taste of the maker decides, but the utmost regularity and evenness is shown in both ends, whether rounded or pointed. The shield is very slightly curved (convex) and on the inside, shallow grooves are cut running the whole length of the shield. In the centre a handle is formed by cutting a hole wide enough to allow the hand to pass through and grasp the shield.

On the outside the surface is decorated in various ways. Sometimes longitudinal, lines are cut to a certain point from either end; then these are brought to meet each other by transverse lines, and being painted in alternate red and white stripes, the grooves and

ridges stand out in high relief and the symmetry of the carving is thus made more apparent. Different tribes have different devices, but the longitudinal lines are the most common.

Since the advent of the white man with his weapons of iron and steel, the natives have utilised these metals to a great extent, and the flotsam and jetsam of prospectors' camps, broken horseshoes, bits of wheels, crockery and, since the arrival of the telegraph line, insulators, having been put into requisition in the formation of his tools, the weapons turned out by these new instruments have neither the regularity nor the fine finish of those worked with the aborigines' own native implement, though in the fashioning of the present day weapons he has a much greater variety of tools than the few pieces of flint with which he worked so marvellously.

The shields of the Israelite Bay natives are about three feet in length and four inches wide, rounded at either end and carved, either with straight lines, or merely painted with red ochre and left uncarved.

The Pinjelly natives use a much shorter and broader shield. It is two and a half feet in length and eight inches wide, carved longitudinally, and painted red and white in the groovings.

The York shield is the same length - 2½ feet, but only six inches in width. Very wide lines of alternate red and white are painted on these shields, but the grooving is very shallow, only sufficient to offer the necessary resistance to the "glance" of the spear.

The Greenough district natives use shields still shorter - only two feet in length and six inches wide. They are painted in a similar manner to the York shields, with wide straight lines, slightly grooved.

The Geraldton shields are also two feet long and six inches wide, very widely grooved and painted, the groovings being one inch in width.

The Northampton shields are more varied, some of them being carved and painted in narrow lines, others only painted in wide straight lines, others again carved longitudinally with the central transverse connecting lines. The length and width of the shields differ according to their markings, the short wide weapons having also the broadest grooves.

The Murchison shields are carved in straight lines down the whole length of the weapon, the grooving being very finely done. These shields are about three feet long and four inches wide with rounded ends.

A very curious wooden implement is in use amongst the Murchison tribe at their initiation ceremonies. This is a long flat carved piece of light wood, fifteen feet in length, cut from a single tree and shaped and worked to a fine point at either end. The whole of the surface is carved in diamond pattern with diagonal intersections. It occupies a very important part in the ceremonies connected with man-making and other rites, and is most carefully hidden at all other times. It would be interesting to discover the exact use of this implement, as great patience and time must be expended in its manufacture, for its thickness does not exceed one-fifth of an inch and its width is not more than six inches. It has never been met with outside the Murchison district. (?) (This paragraph to be corrected and added to.)

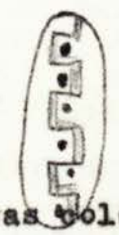
The Ashburton shields are of varying lengths, some are three feet, others not more than two and a half; the ends being rounded or pointed according to individual taste. Some of the smallest shields in W.A. have been seen in this district. Many of these are very finely carved and worked, the Ashburton natives bestowing much care in the manufacture of their shields, spears and other implements.

The shields of the Roebourne natives are grooved in wide lines down the whole length of the weapon, are three feet long, four inches wide and painted with the usual red and white, wilgi and clay. Some

of the shields from this district are quite plain with no carving or coloring. These are usually pointed at either end and have a deeper curve than the long flat carved shields with rounded ends.

The Beagle Bay shields are similar to those used by the Broome and Roebourne natives carved and uncarved ones being found amongst them.

The Kimberley shields are of great variety. There is a slight difference between the weapons of the natives of East and West Kimberley both in the groovings and markings and in the painting. One shield at Wyndham was uncarved, but had a sort of wall of Troy pattern painted in white on its outer surface, a round spot of red being placed in the centre of each square, the rest of the shield was coloured red. Other shields in this district had diagonal lines running down their length, very narrow and most evenly worked. Some again, had the groovings running across the width of the weapon. These markings are peculiar to the Kimberley district and are not met with further south.



The woods generally used by the West Australian natives for their shields are sandalwood, mulga. In the northern part of the State they are made of the sapwood of large trees. In all cases the wood of which they are made is the lightest obtainable in the district.

Method of producing Fires by Friction

(To be corrected and added to from later information)

One of the oldest inventions of our race is that of making fire by friction, but when and where the first humans came upon its discovery, it is not within the province of this work to discuss.

In the earliest Mexican sculptures, firemaking has been pourtrayed and many of the indigines of South America and various parts of Africa still know no other method of producing fire. It is in use at the present day amongst some of the hill tribes of India, and in the interior of our continent far from the track of ever advancing civilisation, it is still practised.

The old Dutch navigators sailing round the "unknown land" of Australia noted and recorded the fact of smoke being seen on many parts of the mainland of Australia, as they sailed up or down the coast, but as to its origin they offered no theory, beyond remarking that the place seemed to be inhabited by men of some kind. Dampier who so minutely observed everything in new lands that came within his ken, and whose wrath at finding no chance of any trade with a people who still lived in the Stone Age, gives vent to his disappointment in railing at the poor aborigines of W.A., their country and everything connected with them. (Quoted in King's Voyages, vol. II, 95 et seq.) "These poor creatures, who have no houses and skin garments, sheep, poultry and fruits of the earth as the Hodmadods have, who.....do never open their eyes as other people, and therefore cannot see far (!).....How they get their fire I know not, but probably as the Indians do, out of wood; I have seen the Indians of Bon-aire do it, and have myself tried the experiment..They take a flat piece of wood that is pretty soft, and make a small dent in one side of it, then they take another hard round stick about the bigness of one's little finger and sharpened at one end like a pencil, they put that sharp end in the hole or dent of the flat soft piece and then rubbing or twirling the hard piece between the palm of their hands, they drill the soft piece till it smokes and at last takes fire." Which description fits exactly with the method purused by our aborigines at the present day.

"Fire" to the natives aonveys the same meaning as hearth and home to Europeans. As in the French tongue there is no word for "home", so amongst the Australians the word "fire" represents their home and to sit down by their fires carries the same signification as an invitation to visit a person's home does to us.

The W.A. natives have at least two methods of making fires. The "upright" and the flat or rubbing method. The upright or twirling method is performed in the following manner : A flat piece of soft wood about nine inches in length and an inch and a half wide is placed on the ground and selecting a susceptible spot in its centre, the native makes a small notch and groove, inserts the pointed end of a stick about two feet in length and half an inch thick into the notch and having placed a piece of easily ignited bark or dried grass or powdered leaves in the groove, close to the hole, he applies the palms of his hands to the upright stick making it revolve very rapidly, always with the pressure exerted downwards, lifting his hands instantly to the top of the stick as soon as they have got too low for comfort, yet keeping the stick exactly in its place during this movement. This is the part of the twirling process that is so difficult of attainment by Europeans. Heat is shortly generated by this method and as soon as smoke is seen the native blows gently upon it and presently the fire is lighted.

In the rubbing method the soft trunk of a dead tree may be chosen, and in the cracks of the bark some finely powdered dry gum leaves or other inflammable substance are placed. A hard and uneven stick is then rubbed vigorously and quickly to and fro upon the trunk and in a very little time fire is obtained. In the absence of a fallen tree or suitable piece of wood the natives have utilised their shields which, being made of very light wood or bark, answer the purpose admirably. In this case the spearthrower may be used as a rubbing stick, but this is only done where great scarcity of suitable wood prevails.

It is extremely difficult in some parts of the Nor'West to procure the materials for making fire by friction, particularly

along that part of the coast south of La Grange Bay, known as the Ninety Mile Beach, and in some of the Goldfields districts. In those regions the natives usually carry a firestick about with them of some kind of wood which burns slowly so that it can be carried long distances over treeless plains. When a camping place is reached this firestick performs its duty of lighting a fire and is then quenched and laid aside until the party is on the move again, when it is rekindled. The natives of the southern and southwestern districts frequently carry firesticks of banksia cones from place to place during the winter months, the women keeping the lighted firebrands under their cloaks in the rainy weather. Having the lighted firestick in such close proximity to them they not infrequently got burnt and as in the case of a white person whose charred skin on healing is of a different colour from the rest of the body, so it is with the natives, their bodies often presenting the appearance of having suffered from some severe skin disease, giving this impression to some early travellers who observed the patches of lighter coloured skin and could not otherwise account for them.

In all parts of W.A. where the white man has penetrated, making fire by friction was the only method in use amongst the natives, but the lighted firestick is very frequently requisitioned as it saves the native much trouble, since he may not always depend on being able to procure suitable wood for his purpose. It being the duty of the women to carry the firestick should they allow the stick to burn out before the camp is reached they are sometimes very severely beaten according to the scarcity or otherwise of dry light wood at the camping place.

The Japanese, according to Taylor, use the same method of fire making as the Australians also such remote peoples as the Aztecs and Peruvians, who when they had reached the apex of their greatness, elevated into a religious ceremony the practice of firemaking. "At the close of the great cycle of the Aztecs, when the calendar was corrected to true solar time, at the end of the fifty second year, a high religious festival was held. In the reconstruction of the ritual calendar, the intercalated days were regarded as

Taylor's Te Ika A. Main, P. 368

Wilson's Prehistoric Man, I, 125

belonging to no month or year....No fire smoked and no warm food could be eaten during this period. At the close of that dreary interval the ceremony of the new fire was celebrated.....The process by which the fire was procured by revolving one piece of dry wood in the hollow of another is repeatedly illustrated in the Mexican paintings of Lord Kingsborough's great work."

Many other uncivilised peoples used the Australian method of getting fire by friction hence it is probably the only method known to the earliest races and may have been suggested by some one having noticed the accidental fires produced by the rubbing of two dry branches together during a gale. This is one of the theories put forward by some writers on the origin of the element so highly prized by man.

Methods of Making Fire

(Murchison)

Mrs. Joshua Mills/states that the following two methods will enable a white bushman to make a fire without matches, provided he has the other requisites necessary for the process. If the bushman has a pocket knife or hunter's knife he finds a hard stone, granite or flint and tearing a piece of lining from his clothing he places it carefully beneath the stone and with a quick smart blow of the blade of the knife upon the flint, a spark will result which will fall upon the lining fixed beneath. This process is repeated until the rag has become ignited, when it is placed beneath a carefully prepared heap of dry leaves and a fire soon follows.

Another method is for the bushman, should he possess a gun and ammunition, to extract the bullet from one of the cartridges, and then replacing the cartridge place a piece of rag in the muzzle of the gun and fire into a prepared heap of dried leaves, twigs, etc.

The Sunday Island natives obtain fire in the following manner. A small round stick of ½ an inch in diameter is placed flat on the ground and held firmly by the feet, then a small indentation having been made in the middle, another stick of similar size is twirled rapidly between the hands. Tinder is placed close to the indentation which the friction soon ignites. The natives call this kind of wood banyan, and the process of fire making ena.

A curious method of making fire by friction is described by the Rev. J. Flood (New Norcia). The woods used are the blackboy trunk and a blackboy stick. "They have a system of rubbing two pieces of blackboy stick to and fro, between the open hands, pressing the hands hard whilst rubbing, at the same time keeping the ends of the sticks pressed closely to the blackboy trunk on which they sit. The friction of the two sticks in the hand and that of the blackboy itself, on which the ends of the sticks are constantly rubbing during the process, makes the fire."

The Busselton natives obtained fire by the following method. They got two pieces of waljup (blackboy flower stem), one a little harder than the other. The harder one, which was placed on the ground, had a hollow place in it, the other piece (which must be straight) was first greased by rubbing it in the hair, one end was then placed in the hollow of the other stick and the native worked the upright stick quickly between the palms of his hands, the friction in a short time produced fire.

Mr. G.S. Woodly states that the Murchison natives use native peach and sandalwood for making fire by friction. A piece of wood about as long and thick as one's arm is partly split and a small piece of wood is wedged into the split to keep it from closing. A little fine dry grass or kangaroo dung is put into the crack, and with another piece of wood they saw across the lower piece until the grass etc. catches fire. This is the horizontal method and is less commonly used than the upright process.

The first mention of a native "wedge" is made here - though Dr. Roth states that the Queensland natives were familiar with the wedge and its uses.

On the Tableland the roots of the flooded gum and kangaroo dung are used in making fire. (S.H. Meares, Tambrey)

Wooden Swords, etc.

Another implement fouhd in isolated places on the continent is the two handed wooden sword. Ernest Giles, when at Queen Victoria Springs, "found a number of long flat sword-like weapons..... (Giles' Aus. vol. II 205) They were ornamented after the usual Australian aboriginal fashion, some with slanting cuts or grooves along the blade, others with square, elliptical or rounded figures; several of these two-handed swords were seven feet long, and four or five inches wide." (Were these the dancing boards of W.D. Campbell and the initiation boards of the Murchison tribes?) They were used with both hands and must have weighed nearly ten lbs. Scarcely an efficient weapon in the hands of a W. A. native.

In Port Darwin, Gippsland, Queensland, and on the Murray River, these swords have also been in use amongst the natives. (Worsnop's Aborigines, P. 135, illustrated) The Rev. John Fraser mentions the length of the Queensland sword as "about 3 feet, with short and stout handle. The blade is either straight or slightly curved. It weighs from 3 to 10 Lbs. (To be corrected)

These two handed swords have not been met with in any other part of West Australia. (Giles' "swords" had no handles, Fraser's had.)

In Mathew's Pamphlet on "Some Aboriginal tribes of W.A." he mentions the mirralee, a flat thin board varying from about four feet to twelve feet or more, from three to six inches wide, and ornamented by carving on both sides. (Mathew's Pamphlet on Some Aboriginal Tribes of W.A., P. 220) Mr. Mathew states that the natives of the Lennard and Fitzroy rivers, Jurgurra Creek, and along the coast to Broome, Condon and Roebourne, use this implement at their ceremonial and magical dances. The same kind of implement also figures in the corroborees of the Murchison natives, a specimen from that district having been obtained by the Museum authorities.

Domestic Utensils

(To be corrected.)

The West Australian natives nearly always carry the whole of their household goods with them. Camp shifting occurs so frequently that it necessitates the domestic equipment being of a light and portable nature and as families move from place to place each member has his or her portion of the "Lares and Penates" for whose safety they are individually responsible.

Yet although the property of the natives must of necessity be of such a nature that it can be easily moved from place to place, it by no means follows that they are not furnished with everything suitable for their primitive requirements, on the contrary every necessary article is contained in the receptacles made for them and these "receptacles" although of the most primitive nature, are yet entirely satisfactory.

The following account of a native family's possessions, and the means of carrying them about from camp to camp, is furnished by Sir George Grey (Journal, II, 264 et seq.) : "The Australian hunter is thus equipped : round his middle is wound in many folds a cord spun from the fur of the opossum, which forms a warm soft and elastic belt of an inch in thickness, in which are stuck his hatchet, his kyley, and a short heavy stick (dow-ak) to throw at the smaller animals. His hatchet is so ingeniously placed that the head of it rests exactly on the centre of his back, whilst its thin short handle descends along the backbone. In his hand he carries his throwing stick and several spears headed in two or three different manners, so that they are equally adapted to war and the chase....These weapons, apparently so simple, are admirably adapted for the purposes they are intended to serve - the spear when projected from the throwing stick (wommera) forms as effectual a weapon as the bow and arrow...and it possesses the advantage of being useful to poke out kangaroo rats and opossums from hollow trees, to knock off gum from high branches, to pull down the cones from the Banksia trees and for many other purposes.

"The hatchet is used to cut up the larger kinds of game, and to make holes in the trees the owner is about to climb.

"The kyley is thrown into flights of wild fowls and cockatoos

and with the dowak, a short heavy stick, they knock over the smaller kinds of game.

"Thus equipped the father of the family stalks forth, and at a respectful distance behind him follow the women; a long thick stick, the point of which has been hardened in the fire, is in each of their hands, a child or two fixed in their bags (?) or on their shoulders, and in the deep recesses of these mysterious bags they carry moreover sundry articles which constitute the wealth of the Australian savage.....The contents of a native woman's bag are :- A flat stone to pound roots with; earth to mix with the pounded roots; quartz for the purpose of making spears and knives; stones for hatchets; prepared cakes of gum, to make and mend weapons and implements; kangaroo sinews to make spears and to sew with; needles made of the shin bones of kangaroos with which they sew their cloaks, bags, etc.; opossum hair to be spun into waist belts; shavings of kangaroo skins to polish spears etc. (?) the shell of a species of muscle to cut hair etc. with; native knives; a native hatchet; pipeclay; red ochre or burnt clay; yellow ochre; a piece of paper bark to carry water in; waistbands and spare ornaments; pieces of quartz which the native doctors have extracted from their patients, and thus cured them from diseases; these they preserve as carefully as Europeans do relics. Banksia cones (small ones) or pieces of a dry white species of fungus, to kindle fire with rapidly, and to convey it from place to place; grease, if they can procure it from a whale or from any other source; the spare weapons of their husbands, or the pieces of wood from which these are to be manufactured; the roots etc. which they have collected during the day...In general each woman carries a lighted firestick or brand under her cloak and in her hand." These "cloaks" made of kangaroo skin are not worn anywhere to the north of 29° S. lat.

The above description by no means covers the number and variety of domestic utensils in use amongst our aborigines. On a visit to Kater Island, King came across "the remains of a fishpot, nine feet long, made of strips of <u>flagellaria indica</u> but so imperfect and disfigured that we could not readily convince ourselves of its particular construction or use." (King's Voyages, vol. I, P. 398.)

At Hanover Bay King found several fishing lines and water baskets in the camp of the natives. (King's Voyages, II, 67) The water baskets would probably be similar to those found by Brockman's party in Kimberley and now in the Museum. These are used by the natives in crab fishing for storage purposes, the native holding the edge of the basket in his mouth, the while he searches with hands and feet in the soft mud for the crab and crayfish that abound on the Nor'West coast.

Stone mills form a very important part in the domestic economy of the natives, for almost all their vegetable foods, roots, seeds etc. are ground or pounded by these ancient household utensils. Besides being used for bruising and grinding the seeds, they are also used in breaking shellfish.

When there is a large camp of natives at some place where the seeds and roots abound, the noise of the pounding can be heard far into the night, the women of course being the "millers", for all laborious tasks are performed by them, and while their days are occupied in collecting the various seeds, their evenings are no less so in the preparation of the food thus obtained. Throughout the whole of the State these millstones have been found. Dr. House, who accompanied Brockman as naturalist in the Exploration of Nor' West Kimberley, says that "at all the camps visited, the round stones with which the natives pound their food were to be found."

(The following to be corrected and added to. Describe the ngoonjook of the Bibilman.) The fishing nets and bags of the West Australians are manufactured from certain tough fibrous grasses, that of the spinifex or triodia irritans, principally used by the Nor'West natives, being the best. The fibres of the kurrajong and melaleuca trees, which grow in some parts of this State, are also used.

The method of preparation is very simple, the grasses are left to soak for a day or two in water, and afterwards pounded to separate the fibres. The men generally perform the spinning which is done by first taking a long piece of thin stick with a cross piece placed near the top. After the fibre has been separated the twist is given

by rolling the strands with the palm of the hand on the naked thigh and then by a peculiar turn of the hand two separate strands are twisted together and so the string is made, the thickness of the cord is regulated by the left hand, and as quickly as it is spun it is wound round the crossed stick or "bul-baum". The making of the nets and bags is relegated to the women. The size of the mesh varies in the coastal and inland districts; the natives do not use the ordinary mesh in netting, and although the knot is the same as that in European nets except that the stitch is over, not under, their only system of regulation of the knots is by their fingers, the string itself being wound round an ordinary stick or bone. The nets they turn out by this means are very strong and durable. Very large fishing nets are made by the women, as also the net bags which form their travelling trunks, baby carriages and general vade mecum.

Eyre states that the nets he saw were "all made from the tendons or fur of animals or from the fibres of plants. In the former the fur of opossums and similar animals are used and in the latter a species of rush, the fibres of the root of the mallow (?) also those of the root of the broad flag reed, and in some parts the fibrous bark of trees. These are prepared for use by being soaked in water and carded with the teeth and hands, or by being chewed or rubbed. The string never consists of more than two strands, though these are increased in thickness according to the size of the cord that may be required." (Eyre's Discoveries, II, 311)

Water Vessels

The vessels used by the natives for carrying water are of various kinds, from the wooden scoop which requires some skill in its manufacture to the human skull which requires none.

The wooden scoop is generally made of strong hard wood, hollowed out by means of fire and chipped and shaped to the desired size by the stone chisel and knife. Its length is about fourteen inches, the width across the top seven inches and it is hollowed out to a depth of about six inches. The vessel at its thickest part is not more than two fifths of an inch thick. Hence the process of making the scoop is a slow one for it is cut in the first instance from the solid trunk of the iron bark tree or some other species of hard wood,

and only the stone implements of the natives are used in its manufacture. These vessels are of varying capacity. Gregory in his exploration of the Gascoyne came upon a native camp, and the "women and children fleeing into the river bed from the approach of his party, gave him leisure to examine the domestic menage. "Around the fires...were ranged a number of wooden scoops capable of holding from two to four quarts; these contained a variety of seed and roots, the most plentiful was a species of grain like small plump drake, gathered from a grass much resembling wheat....and a root resembling an onion, not larger than a pistol bullet, a few rats, and a small variety of samphire like a Hottentot fig." Sometimes these scoops contain the bones of a child that in life had been dear to its parents, the remains being carried about from camp to camp with the other impedimenta. An instance is recorded of a woman carrying the bones of her child about with her in this manner for many years. She was frequently observed when in camp to take the bones out of their resting place and arrange them on the ground, fitting the various portions together with an exactness that evidenced some acquaintance with the science of anatomy.

Gregory's Exp. 41

Other watervessels are obtained from the bark covering of a gnarl or boll on a gum tree, and make very efficient receptacles. Sometimes a handle consisting of a piece of spun cord, nicely adjusted, is attached to them.

Dr. House, the Naturalist accompanying the Brockman Expedition to the Kimberleys brought back a round bark bucket with a flat bottom and "regulation" handle. The bark was sewn with kangaroo or opossum tendons and caulked over with spinifex gum, making a very handy water vessel. Its capacity would be about one or two quarts.

About 200 miles west of Queen Victoria Springs Ernest Giles found some vessels that had been thrown aside by the natives in their flight. (Giles, Aus. II, 216) These "were made of small sheets of the yellow tree bark, tied up at the ends with bark string, thus forming small troughs; when filled some grass or leaves are put on

top of the water to prevent it slopping over. The women carry these troughs on their heads."

The Victoria Desert tribe use waterbowls made of thick bark, displaced from a convenient outer bend of a large eucalyptus tree. They also make a circular pad for carrying these bowls on the head. Helms found many of these near camp 33 and concluded from their number that the women of that district have to carry water with them when the tribe is on the move.

Helms Anthrop. 271

The same writer states (P. 272) that the vessels of the Fraser Range Tribe were "made of thin mallee bark, which is gathered up at the ends and tied with bast. To accomplish this I think the bark requires sweating in order to make it pliable, as the green bark is rather brittle and would surely crack if the bending of it were attempted without some preparation."

Captain Sturt in his travels "found a number of bark troughs filled with the gum of the mimosa." (Sturt quoted by Grey, II, 260).

Captain Grey found a specimen of a circular bucket used by the natives and "made from the bark of a tree...They are about 8 or 10 inches deep and the same in diameter and are carried in the hand by a string so nicely adjusted that the water is not spilled. The bottom is also of bark closely fitted and the joints closed with gum....The joints on the side and the bottom are sewn with vegetable fibre." This bucket is similar to that found by Dr. House in Nor'West Kimberley in 1901.

Worsnop's Aborigines 88

Warburton states that the natives eastward of the Oakover used a large seashell for a drinking cup. (Warburton's Journal, P. 252.)

Occasionally a skull, probably of a female relative, has been carried about from place to place and used as a drinking vessel (?).

The water vessels made of wood and bark are not confined to any particular portion of the State. In the Kimberley district alone, every variety of watervessel in use amongst the natives of W.A. has been met with by travellers. Some of the largest wooden

vessels are made by the Kimberley natives - a specimen in the Perth Museum measures nearly three feet in length, one foot three inches in width and about nine inches deep - cut and shaped from a solid piece of some light kind of wood. The smaller wooden bowls have been found all over the State. Some have tiny holes made in the bottom, in order to let the water run through should the women be travelling in rainy weather. Vessels with these holes are usually found in the coastal districts where water is plentiful and there is/no necessity for a "water carrier". The wooden scoops serve another purpose in winnowing the chaff and any foreign matter from the grain of the millet and other seeds. For this purpose most of the wooden vessels are made with slanting flat ends, to admit of the corn being shaken out at one end while the chaff etc. goes out at the pinjin other. The Nor'West natives are extremely dexterous in separating the seed from the chaff in this manner, the peculiar turn of the wrist by which they manipulate the scoop answering all the purposes of a winnowing machine. The wooden scoops are used as baby carriages when there is a young baby in the camp, the babies being placed in the hollow of the scoop.

Baskets are also used by the natives in those parts of the State where materials for their manufacture can most easily be procured. They are supplementary storage receptacles and are of many kinds and sizes. Some about two and a half feet in length are in use amongst the Kimberley natives. These are made of rushes, others again are made from flags, grass, bulrush and string. They are rarely carried by the natives when travelling, as however strong the fibrous materials may be of which they are made they are not as durable as the wooden or bark vessels which the natives always carry about with them. A "rent" or leak in a bark vessel can be stopped by caulking it with gum. When the wicker basket begins to break, its usefulness has departed. Hence they are only used by the coastal natives in their crab fishing excursions, a few being found in permanent camps, where they form a native "store room".

A.K. Richardson states that the Nichol Bay tribe made baskets of spinifex or triodia. Dr. House brought to the Museum some baskets which had been manufactured by the natives of Northern Kimberley.

Amongst the southern natives gundir is a bag of kangaroo skin about two feet long by a foot and a half wide suspended by a piece of leather over the mother's shoulders, and in which the children are carried when not at the breast, from their earliest birth until they are four, or even six years old, up to which period the women sometimes suckle their children. The little things are placed standing upright in these bags; and this may partially account for the thin knock-kneed legs of most of the aborigines when grown up. The infants cling with their hands as well as they are able, to the mother's neck and shoulders, and when sleeping they rest with their noses pressing against the mother's back, from which, perhaps, that feature takes its broad flat shape, or else with their heads leaning back, and dangling to the parent's motions in a way that would break any white child's neck.
(The gundir is seemingly only used by the Gingin natives to carry the children.)

Forrest makes mention of having seen some natives twenty miles from Mount Singleton, carrying "a great many dulgates and opossums in a net bag, made out of the inner bark of the ordnance tree, which makes a splendid strong cord."

Mr. Durlacher states that two kinds of spinifex known as the "blue" and "hill" respectively are used for making strings, ropes, bags etc. by the Nor'West natives. The blue is so called from the bluish green appearance of the leaf. The natives collect the leaves of these plants which they tie in small bundles, then soak in water for some days, which toughens the fibre. When ready for use each bundle is taken out separately as required and placed on a large flat stone which is procured for the purpose, then it is pounded with a round smooth stone, the native women being very careful, when performing this work, not to bruise the fibre too much, as too much pounding would weaken it. After this operation is performed it is again

placed in water from which it is taken as required for weaving into its material for net making; the weaving is done by using one hand to piece the fibre, the rolling being done on the woman's leg as she squats on the ground, by means of the spindle (before described) and another woman receives the manufactured fibre as it comes from the spindle and winds it on to a wooden shuttle after which it is ready to be made up into bags or fish-nets.

Weapons - pulpit (native hammer) made from the black flint stone, blunt at one end for the hammer and sharp at the other end, fixed into a handle with blackboy gum.
Dabba - knives made of small pieces of white flint set into blackboy gum with short handle attached.
Gijee or spear, various kinds, boordin, boryl, mungar, etc. (Quinn)
Spears, dowak, kylee, no domestic utensils (Moir).

The domestic utensils of the Sherlock natives were : pardoo (mill stones); yandies (scoops for carrying grain etc); beera (conch shells used for digging purposes and also for carrying grain, string etc.)

Nets, Bags, Hair belts, etc. (From J.O. Brown, 28/2/05)

(To be corrected. Must not the spinifex be always soaked in water before being pounded?)

The following remarks (contributed by J.O. Brown) regarding some of the habits and customs of the aborigines apply especially to those natives located near Roebourne, the most central district in the Nor'West division of this State.

1. Their method of manufacturing string, baskets, nets, clothing and weapons. String of all kinds is called mir-ra-jee. It is chiefly manufactured from the spinifex fibre. The natives pick the spinifex when it is green and when it is partially dry, having been laid by for a few days they ~~the~~ it and hammer it with stones to make it fibrous. When it has been well hammered the operator, who is almost always a woman, squats down on the ground and starts to spin the fibre into string. A forked stick about six inches in length is used for a spindle, and the fibre which is sometimes moistened, with water from a conch shell, undergoes an immense amount of rubbing and rolling backwards and forwards upon one or other of the thighs of the operator. Great patience is shown by the native in making this string. It is usually in short pieces from one to three feet and is cleverly rolled and seized together when required to be joined.

The tendons or sinews of freshly killed kangaroo and emu are also used as string. The sinews are usually drawn from the tail of the kangaroo and from the legs of the emu. These sinews are very strong and when they get dry, the natives make them soft and pliable again by drawing them through their lips and wetting them with saliva. These sinews are principally used in making their spears and other weapons and for fastening the heads of the stone axes and hammers which they manufacture.

Human hair and opossum fur are also spun into string (mir-ra-jee) or rather into thick cords or bands by a process similar to that followed in preparing the string from the spinifex fibre. The hair bands are used almost exclusively for dress purposes and will be referred to again later on.

Baskets, or basket bags, are sometimes made of string about two

feet in depth by one foot in diameter, circular and somewhat similar to the common English crabbing net, only the fibrous spinifex string is much coarser and the knots look larger than a net made of ordinary netting twine. The baskets most used by the natives are made of hard bark in shape like a small canoe. These baskets are usually about 3 feet in length and from 9 inches to 1 foot across. The native women carry their babies in them very often. They use them commonly to carry food as grass seeds, mangrove seeds, fish, roots, honey and in fact anything that will go into them. They are very awkward to carry for there are no handles and they have to be carried in the arms or on the shoulder. The native women do all the netting. They make nets to catch fish and prawns, as well as for trapping birds. The mesh is similar to the usual diamond shaped mesh that is used in the ordinary European fishing net. Native girls do their netting very quickly, working with their fingers only, without the aid of needle or mesh. (I have seen them use a small kangaroo bone for a mesh.) Two or more fingers are used to gauge the mesh, in lieu of the mesh stick which the Europeans always use. The string is in short lengths and the natives push it through with their fingers which are very supple. A white woman would of course use a needle to carry the string through and back. The only difference in the native method of netting is that the string is put through and tied <u>over</u>, while with a European it is passed and tied <u>under</u>. The appearance of the loop is just the same when completed. Fishing nets and bird trapping nets are usually not longer than from 20 to 30 feet, but the length of these nets is increased by fastening two or more nets together as occasion requires.

The human hair and opossum fur cords or band s are practically all the clothing that those natives wear in their original wild condition, though of course when located near white settlers they are obliged to adopt European costume to some extent. In their wild state however the men and <u>women</u> (marginal note - women ?) wear usually a hair belt round the loins into which they stick in front a green branch of flooded gum tree, soft spinifex bush, or sometimes a tuft of grass. They perhaps would use fig leaves, but there are none procurable.

These cords are also used by the men to tie round their hair when decorating themselves for a corroboree or a fight. The belt round the loins which has been alluded to is called by the natives the "nool-ban".

Mr. Cusack of Tambrey Station, Tableland, states that the natives never carry the nether millstone about with them. It is left at their general camping places. If however a death occurs at one of these spots, the camp is deserted. The natives then carry the nether millstone to some new camping ground, where it will remain until a death again occurs, when it is again moved. The natives have two smaller millstones, one for grinding their seeds etc., the other for grinding wilgee. These they always carry with them. Their methods of grinding are similar to those already described.

Other domestic utensils amongst the Injibandi natives were the "buldoo" bag for carrying fish, "thagoora", fishing net, and kooran, a little net for catching fish.

A paperbark rug was another item included amongst the household goods, but only in those districts where it was easily obtainable. It was never carried about with them; it served a double purpose in keeping off the rain and in somewhat mitigating the mosquito pest.

When going on a journey Jubyche took his booka, his kyley, meero, gidgee, kodja and dowak, tabba; round his waist he wore a noolban of opossum string and into that were stuck his tabba, kyley and kodge. His hair was tied with bor-lo or joo-dee (hair string). Into his hair a dwerda ninda (dog's tail) was put. Yoolyeenan carried the goota (bag) which contained gum, barbs, stones, sinews or string, roots of any kind, picked up on the way and sometimes the upper millstone. She wore her booka and carried her wanna. She carried no water vessel. The baby was carried on her back inside her booka.

According to Jubyche it took seven "joey" (young kangaroo) skins to make one booka or cloak. The kangaroos were first skinned with a tabba (knife) the knife being held in the right hand. After the skins were taken off they were at once pegged out, the women

doing this part of the work. When dry they were scraped with a kangaroo bone until they became pliable and then rubbed with fat. When they had attained the desired softness, they were sewn together with the aid of a kangaroo bone needle and the sinews of the same animal, the needle being used something after the manner of a shoemaker's awl, supposing that instrument possessed no handle. The father or mother pefformed the sewing. The booka was now ready to be worn, the fastenings consisting of a "beenda" (bone fastener) which was stuck into two holes picked out on each side of the skin. The cloak was fastened over the right shoulder, so as to leave the arm free to carry weapons etc. Sometimes the skin was wilgee-d, but it was not otherwise decorated. It was worn with the fur inwards.

Capt. King's Voyages,
vol. II, P. 138 et seq.

Weapons etc. of K.G.S. Natives

Throwing stick (meero) Some were 3 inches broad and 2 feet 6 in. long, having a small sharp edged shell or piece of quartz fixed in a gummy nob at the handle for the purpose of scraping the points of the spears; the shaft is broad, smooth and flat.

Spears The spears were very slender, made from a species of leptospermum that grows abundantly in swampy places. They are from 9 to 10 feet long and barbed, with a piece of hard wood fastened on by a ligature of bark gummed over; we saw none that were not barbed, or had not a hole at the end to receive the hooked point of the meero.

Hammer or kaoit appears to be only used for the purpose of breaking open shellfish and killing seals and other animals by striking them on the head for it has no sharpened edge to be used as a chapping or cutting instrument; the handle is from 12 to 15 inches long, having one end scraped to a sharp point and on each side at the other end are two pieces of hard stone, fixed and cemented by a mass of gum which when dry is almost as hard as the stone itself. The hammer is about 1 lb. in weight.

Knife or taap - perhaps the rudest instrument of the sort that ever was made; the handle is about 12 inches long, scraped to a point like the hammer and has at the other end three or four splinters of sharp edged quartz, stuck on in a row with gum, thus forming a sort of jagged instrument. It is thus used : after they have put within their teeth a sufficient mouthful of seal's flesh, the remainder is held in their left hand and with the taap in the other, they saw through and separate the flesh. The K.G.S. natives hold the knife underhanded and cut upwards.

Hairdressing etc. of K.G.S. Natives

King's Voyages, II, 143 et seq.

Hairdressing. Their hair was dressed in different ways, sometimes it was clotted with red pigment and seal oil, clubbed up behind and bound round with a fillet of opossum fur, spun into a long string, in which parrot feathers, escalop shells and other ornaments were

fixed in a dozen different fanciful ways.

Their clothing was a cloak of kangaroo skin which they always took off and spread underneath them when they lay down. Their faces and sometimes their whole bodies were daubed over with a mixture of seal oil and red pigment, that caused a most disgusting effluvia.

Bracelets of dog tails or kangaroo skin were commonly worn, and one had several escalop shells hanging about him, the noise of which, as they jingled together, he probably thought musical.

The "noodlibul" or belt in which they carry their hammer and knife is manufactured from the fur of the opossum, spun into a small yarn like worsted, it is tightly bound at least three or four hundred times round the stomach; very few however possessed this ornament.

It is a remarkable fact that the S. Western natives did not as a rule use shields. These were only for ornament. Shields were unknown in Tasmania also, Perth, Guildford and some southern natives did not use shields.

Perth clubs were similar to the Tasmanian, being pointed at both ends, and practically unadorned, except for some rough notching which formed the handle.

Col. Lane Fox, Pres. British Ass. Anthropological Section, August '72, P. 321, made some observations on the boomerang and shield. He traces the rudimentary parrying shield, especially a primitive implement, to the Dravidian races of the Indian Peninsula and to the ancient Egyptians, and although he states this is not a circumstance to be relied on by itself, it is worthy of attention in connection with the circumstance that these races have all been traced by Prof. Huxley to the Australoid stock and that a connection between the Australian and Dravidian languages has been stated to exist by Mr. Morris, the Rev. R. Caldwell, Dr. Black and others.

Navigation, Means of

(To be added to)

The methods of navigation in use amongst the W.A. aborigines before the advent of the white men were extremely primitive. On the whole line of coast between Eucla on the South and Cambridge Gulf on the North the only means of conveyance between islands was the raft, and even that was not met with until lat. 22° had been reached.

Tasman, who visited the Nor'West coast in 1644, as far south as about the 22nd degree, about N.W. Cape, mentions the natives and their canoes, which "were made of the bark of trees", b ut as he also gives a description of their "bows and arrows" ("hazeygaeys and kalawaeys") it must be inferred that he was either misled by the similarity between the raft of embarked timber and the bark canoe, or that he was mistaken in the locality, since it is well known that the bow and arrow is unknown amongst the natives of the Australian continent (with the exception of Cape York Peninsula on the North East coast where the bow and arrow may have been obtained from the adjacent islands.)

Vancouver who made a survey of the South coast in 1791 makes no mention of having seen any method of navigation amongst the natives. On inspecting the shores of King George's Sound he found "not the least remains of canoes, or other circumstance presented itself which could convey the most distant idea of the people having ever trusted themselves on the water." Flinders, during his detention in King George's Sound, 1801 ? while his ship was being refitted remarked upon the absence of even the most primitive mode of conveyance between the islands in the Sound. He also stated that the natives of that part of the coast were unable to swim, and seemed in much fear of the sea.

From Captain King's Voyages we take the first authentic record of a navigating vessel used by the natives, which may in itself be said to be the "<u>fons et origo</u>" of rowing.

King's Voyages I, 43,44 1818

Illustration of floating log on frontispiece, I.

"A log of wood....made from the stem of a mangrove tree. As it was not long enough of itself, two or three short logs were neatly and even curiously joined together end to end and so formed one piece that was sufficient to

carry and buoyant enough to support the weight of two people. The joint was contrived by driving three pegs into the end of the log, and by bending them they were made to enter opposite holes in the part that was to be joined on and as the pegs crossed and bent against each other, they formed a sort of elastic connextion which strongly retained the two together. When it was used they sat astride and moved it along by paddling with their hands, keeping their feet upon the end of the log, by which they probably guided its course. Such are the shifts to which the absence of large timber has reduced these simple savages; they shew that man is naturally a navigating animal, and this floating log which may be called a marine velocipede is...the extreme case of the poverty of the savage boat building all round the world."

One cannot but reflect upon the progress of human ingenuity and intelligence by which through a slow and gradual process of evolution the single floating log that contents the savage has in the course of ages incalculable been transformed into the wondefful ocean palaces and gigantic iron warships of the present day.

King, II P. 67 1821

At Hanover Bay where King's party were treacherously attacked by the natives, after having done their utmost to establish friendly relations, two catamarans or floats were found which were confiscated by the white men. The catamarans consisted of five mangrove stems lashed together to a frame of smaller wood (as in the subjoined woodcut); they were buoyant enough to carry two natives besides their spears and baskets. Upon each of these floats was found a large bundle of spears, tied with ligatures of bark.

P. 69, II

King verifies Flinders' statemant that the K.G.S. natives did not appear to be a navigating tribe for he saw no canoes with them, neither did he observe any trees in the wood with their bark stripped, of which material the canoes is sometimes made and from the timid manner in which they approached the water he considered it probable that they were not much accustomed even to swimming.

P. 137-8 vol. II

In Roe's Archipelago during Stokes' Survey of the Coast of King's Sound the party found on the shorea native raft the first they had ever seen. "It was formed of nine

Stokes : Disc. vol I 112

Illustration P. 112 vol. I

small poles pegged together and measured ten feet in length by four in breadth; the greatest diameter of the largest pole was three inches. All the poles were of the palm tree, a wood so light that one man could carry the whole affair with the greatest ease. By it there was a very rude double bladed paddle."

Stokes, 173, I

Near Collier Bay, Stokes' party found a native raft in the construction of which "almost everything had been left to nature. It was framed of the dead trunk of a mangrove tree, with three distinct stems growing from one root (?), about 18 feet long and 4½ broad. The roots at one end closely entwined, as is the habit of the tree, formed a sufficient bulwark at the stem, while an elbow in the centre of the trunk served the same purpose at the stem, a platform of small poles, well covered with dried grass, gave a sufficient flooring to this rude specimen of a raft."

(174)

On leaving Bathurst Island a native halloed to the party and to their surprise came alongside on a raft. This native had come to them the previous day in the most confiding manner, remaining with them for some little time. His raft differed from that seen at Roe's group in that "between each pole several small pieces of wood were inserted so as to make the flooring of the raft almost smooth. Into the large end of the centre and largest pole, six pegs were driven, forming a kind of basket, in which were secured his means for procuring fire; they consisted of two pieces of white flint and some tinder rudely manufactured from the inner bark of the papyrus tree. He used in paddling a short spear, sharp at each end and struck the water alternately on either side; in this primitive manner he contrived to make way with a rapidity that astonished us all."

199. At a place which they called Raft Point near Doubtful Bay, Stokes' party found several native rafts "constructed precisely in the same manner as those seen at King's Sound."

Worsnop in his "Aborigines of Australia" states that (P. 120) "on the Nor'West coast Captain Stokes saw a very pretty bark canoe, 15 feet long and about 2 feet deep, the ends being neatly sewn together." "The workmanship," says Captain Stokes, "is the most artistic I have seen amongst the aborigines of Australia." A mistake has been made by Mr. Worsnop placing the discovery of this bark canoe in W.A. territory, the only rafts seen by Stokes being those mentioned above. Worsnop's definition of the "Nor'West coast" is from the bottom of the Gulf of Carpentaria, Long. 140°. (P. 121)

Illustration of raft found by Stokes at Hanover Bay, Ib. 119

Gregory sailed from Perth in the "Dolphin" which carried stores, horses etc. to a point at Nichol Bay from whence the party were to commence their explorations of the interior. While landing their horses at Nichol Bay the party on the ship "received a visit from two natives who had paddled off on logs of wood, shaped like canoes, not hollow, but very buoyant, about seven feet long and one foot thick, which they propelled with their hands only, their legs resting on a little rail made of small sticks driven in one each side." It was not far from this place, Gregory states, "that Captain P.P. King had a visit from natives similarly equipped more than 40 years ago." (Mr. Durlacher states that the Nor'West natives used rafts of their own make, about the Flying Foam passage as late as 1883.)

Gregory's Explorations P. 56, 1861

This completes the list of rafts and other conveyances seen by travellers on the W.A. Coast. The absence of big timber along most of the Nor'West coast coupled with the manifest want of ingenuity in the W.A. aborigine may account for the paucity of their means of navigation. But in the King George's Sound district, as also along the line of coast from Swan River to Albany, there is no absence of timber of every kind suitable both for raft and canoe building, but no traveller gives any record of having seen a marine vessel of any kind until lat. 20°, long. 118° had been reached. May not some light possibly be thrown on the migration of the aborigines by tracing their various means of navigation, canoes, rafts, etc. in use amongst the aborigines of Australia?

King's Voyages, vol. I

At or near Lewis Island a native was captured by King's boat crew. He had been seated on a log of wood which he propelled through the water by paddling with his hands. He was at least 6 feet in height. His hair was long and curly and in it was s tuck a short sharp pointed stick; he wore his beard long, no teeth were wanting in his jaws, and there was no appearance of the septum narium having been pierced. At every three inches between the upper part of the chest and navel, his body was scarified in horizontal stripes, the cicatrice of which was at least an inch in diameter and protruded half an inch from the body. He could not have been more than 22 or 23 years of age.

Their huts were a bush stuck in the ground, forming only a very indifferent shade.

A fishing line had been attached to the log. The log was the stem of a mangrove tree, but as it was not long enough for the purpose two or three logs were neatly and even curiously joined together end to end, and so formed one piece that was sufficient to carry and buoyant enough to support the weight of two people. The end is rudely ornamented and is attached to the extremity by the same contrivance as the joints of the main stem, only that the two are not brought close together. The joint is contrived by driving three pegs into the end of the log and by bending them they are made to enter opposite holes in the part that is to be joined on.

K. Young, Duketon

List of Implements of Duketon Natives

Tarro = shield, about 2 ft. 6 in. in length, 6 in. in width, one-eighth of an inch thick, handle formed in wood itself. Grooved diagonally and painted on outside surface with wilgee and pipeclay, grooved only on the inner surface.

Larra, a sacred object not allowed to be seen by women or uninitiated boys. About 2 feet or more in length and three inches in width, grooved in diamond pattern transversely, the spaces between the diamond being grooved along its length. Sometimes both sides are ornamented, although some may be found carved on one side only, the obverse being grooved lengthwise as in the tarro or shield. Concave and convex sides.

Murdaggie, sacred objects of wood, given to each youth on his initiation into manhood, the actual badges of his "membership", carved in plain coil pattern with straight transverse lines separating the coils and herring bone lines connecting the coils, about 14 inches in length and 1½ or 2 inches in width, convex and concave surfaces.

Muddiga (mirroodee?) used by the young man undergoing initiation to warn women and children of his approach, as he must not be seen by them at this time - coil pattern and transverse lines about 6 inches in length and three quarters of an inch thick. A hole is drilled at one end through which a fur string is passed, the string being 1¾ yards in length. This is doubled and caught at one end. The implement is twirled and produces the booming noise familiar to children.

Gunjee, stone knives used in circumcision, about an inch and a quarter in length, ½ an inch thick at its widest part where a piece of spinifex gum is attached for convenience of holding, made of light coloured waterworn stone, chipped to an edge one side, the other side being left in its natural state.

Oorgiddee, head band made of fur string and fastened with a double string at the back of the head, the band itself is composed of about 20 strands of the fur.

Koondarella, sacred objects, flat carved sticks, pointed bluntly at either end and carved with the plain coil pattern, diagonal groovings

running lengthwise between the coils, 4 and 5 inches in length and about ⅛ inch in diameter.

Toonga, ornament attached to head band. Made in the shape of a ring about 4 inches in circumference and half an inch in thickness. Some hard substance covered with human hair string joins the material of which it is made.

Giddee, spinifex gum prepared and attached to a piece of wood, an object of barter.

Wilgee, red earth used for personal decorations, also for ornamenting shields etc.

Nanbar, belt, made of opossum fur, greased and wilgeed. No fixed number of strands in either nanbar, waistbelt, or oorgiddee, head band.

Gunja, public tassels, made of human hair, worn attached to pubic hair, about 3 inches wide, the strands being tied in the middle.

Lingilla, a small oval shaped pearl shell ornament, about an inch in length and ⅝ inch wide having a hole bored near the edge through which a hair string is passed. The natives value these little ornaments highly as they have been bartered from the coast natives living 800 miles away.

Munyee, head ornaments of hawk's or cockatoo's feathers, dog's tails, and opossum or kangaroo fur fastened in the form of tufts, with hair string or fibre.

Wallanoo, boomerangs, two kinds.

Marlee, head ornament of fur and sticks made halo fashion, used in corroborees, as

Wonagee, head ornaments of fur string wound diamond pattern on crossed pieces of sticks : 

Both marlee and wonagee are oprlungbeeree, or forbidden to women.

Captain King's Voyages, P. 62 et seq , vol. II

Weapons etc. of Hanover Bay natives.

A club 18 inches long, pointed at both ends.

Upon the beach were two catamarans or floats, on each of which a large bundle of spears was tied with ligatures of bark, and on the grass near were waterbaskets, tomahawks, spears, throwing sticks, fishing lines and 36 spears. Some of the latter were of large size and very roughly made and one was headed with a piece of stone curiously pointed and worked. This last spear was propelled by a throwing stick, which was also found lying by it.

On opening a small bundle of bark it contained several spearheads made of stone, they were about 6 inches in length and were terminated by a very sharp point, both edges were serrated in a most surprising way. The serratures were evidently made by a sharp stroke with some instrument but it was effected without leaving the least mark of the blow. The stone was covered with red pigment and appeared to be a flinty slate. These spearheads were ready for fixing,each was separated by strips of bark, and the sharp edges protected by a covering of fur. Their hatchets were also made of the same stone, the edges of which are ground so sharp that a few blows serve to chop off the branch of a tree.

The catamarans consisted of five mangrove stems lashed together to a frame of smaller wood, they are buoyant enough to carry two natives besides their spears and baskets.

The natives were robust looking men, the tallest must have been at least six feet two inches high, their bodies were scarred all over, their teeth perfect and they were quite naked. The shorter native had his hair collected into a knob at the top of his head which gave him a ferocious appearance. (Captain King states that contrary to Dampier's description the natives of Hanover Bay were not deprived of their front teeth and wore their beards long, they also differed from Dampier's description in having their hair long and curly.