

ORIGIN OF THE AUSTRALIAN RACE

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SUMMARY

Page

- 1 Introduction to theories concerning origin
Investigation yet to be made
- 2 Divergency of impressions of early explorers re natives
of W.A.
- 3 Theories concerning type of aborigines :-
Huxley, Keane, Kaeckel, Wallace, Flower,
- 4 Davis, Curr, J. Mathew, J.W. Stephens, R.H. Mathew,
E.J. Eyre, Park Thomson, Schoetensack, Bonwick, Tylor,
Howitt,
- 5 Spencer, Topinard, Semon, Klaatsch, Miss G. King, Ramsay
Smith, Gregory
- 6 Resemblance between Australians and the Papuans.
Boomerang occurs in Australia, Southern India, Egypt,
Abyssinia and Central Celebes
Age of the continent, and proofs of the antiquity of
man's presence in Australia :-
- 7 Connection of Australia and New Zealand (Mesozoic)
Remarks on flora

Cretaceous age and its fauna and flora
- 8 Diprotodon . Further geological notes
- 9 Connection of Australia and Tasmania.
The Tasmanians regarded as the first race, which entered
continent from north
- 10 The Tasmanians made no advance from primitive state of
culture - their weapons, etc.

Alliance (through skin cloaks and handled axes) with
Southwestern people.
- 11 Other links between S.W. people and Tasmanians
- 12 Some points of difference between these two peoples.
Various descriptions of Tasmanians (Captain Cook)
- 13 Arrival of Dravidian or low Caucasian migrants
(land route between India and Australia)
- 14 Newcomers better equipped, over-ran mainland and implanted
their customs, etc.
- 15 Description of Dravidians
Traces of their language,
the boomerang
- 16 Malayan infusion, with introduction of circumcision.
Similarity of customs, words, etc., in Northern, Central
and Southern tribes of W.A. Examples
- 17 Variety of type amongst central circumcised people
- 20 In spite of diversity of type, there is a definite homo-
geneity in the Western people.
- 21 Colour, shape of nose (hook-nosed natives)
- 22 Hair, odour
Conflicting arguments concerning origin

- 23 Encroachment of circumcised on uncircumcised tribes
- 24 Types of people in the two phratries can be distinguished
- 26 Measurements native skulls
- 30 height and girth
- 31 hair

Although biologically Australia has her definite place in the world, coming easily first in her possession of the lowest mammals - the so-called "living fossils" long extinct throughout the rest of the world; in an ethnological sense she is still unplaced, for the origin of her aborigines is not yet determined, the late Dr. Andrew Lang stating that "it was past finding out." Many theories have been advanced as to the origin of the aborigines, from the Lemurian - which is the most ancient of all - to that of the late Sir A.C. Gregory, who first estimated the period of man's arrival in Victoria to have been not more than three hundred years, but later in his researches was led to give them a longer period.

As closer and more systematic study of Australia's human inhabitants advances, every new theory concerning their origin appears to give them a more and more remote antiquity, but still no definiteness has been reached as to their original home. (Marginal note :- Recently a Pleistocene skull was found in the Darling country, Queensland.)

The scientific world has become aware through such epoch-making works as the late Dr. Howitt's, the Rev. J. Mathew's and Messrs. Spencer and Gillen's, of the necessity for a first hand study of the natives, for within the last few years English, Swedish, and German ethnologists have visited Australia, and have studied its inhabitants in various centres.

The tribes dealt with in Dr. Howitt's and Mr. Mathew's works have now practically become extinct, and those through whose territory Professor Spencer and Mr. Gillen journeyed are rapidly coming in contact with civilisation, thereby losing much of their ethnological value.

There is, however, a large portion of Australian territory as yet untouched by the ethnologist, the principal and most interesting being that large central belt west of the South Australian Overland Telegraph Line (along which Prof. Spencer journeyed), and east, northeast, and southeast of

the West Australian Central Overland Telegraph Line (from Peak Hill to Broome, via Nullagine).

Within this great area there are many tribes as yet uncontaminated by civilisation, though it may be questioned whether there is now an adult male native living in any locality who has not at least seen a white man, or who does not know that a white skinned people exists.

An intimate study of the tribes occupying this great extent of country, undertaken while they are still in their comparative wild state, will do much towards bringing to some definiteness the vexed question of the original lines of travel, etc. etc. of Australia's first humans.

Western Australian explorers and investigators have recorded their impressions of the native tribes met with during their explorations. These impressions are extremely divergent, ranging from that of Dampier who dismissed them curtly as "worse than Hedmadods", to Bishop Salvado, the R.C. Bishop of New Norcia, who believed them capable of ultimately attaining a European standard of civilisation and culture.

Dr. Scott Nind, Sir George Grey, Captains Stokes and Wilson, G.F. Moore, Bishop Salvado, Sadlier, Knight, and others have written about the western aborigines, short vocabularies having been added in some instances to their work. Grey and Moore issued a short dictionaries of the Southwestern dialects, separately from their Journals. Governor Ord was interested in them to the extent of authorising a pamphlet to be written concerning their physical character, customs, etc. R. Helms found time to study and record his impressions of the various tribes met with during his travels with the Elder Exploring Expedition in W.A. E.M. Curr stimulated inquiry and research by inviting station owners and others to contribute to his work on the Australian Race.

Gregory embodied in his Journal such information concerning the tribes he encountered in his travels in Western "Australia, and G.F. Austin also found the native inhabitants of

sufficient interest to record his impressions of the tribes met with during his survey work in the West.

These and a few fugitive papers read before various scientific societies represent so far all that has been written of the Western section of the aborigines. It is hoped that the present work will throw a little further light on the subject of this interesting people.

It is admitted by almost all recent writers that the numerous tribes scattered throughout the continent are descended from one common stock, since the same distinguishing characteristics are observable in groups occupying widely separated extremities of Australia.

Huxley stated that the Australians were identical with the ancient inhabitants of the Deccan, owing to identities in feature and language. He also thought there was a strong similarity between the skulls of the aborigines and those of primitive men in Europe.

Prof. A.H. Keane favours the theory of an Indo-African continent which he asserts has been proved by naturalists associated with the Indian Geological Survey, and postulates a main branch which he calls the Indian-Oceanic-Negrilo, starting from this submerged continent and feeding the Australian, Tasmanian, Papuan and Melanesian.

Haeckel's theory was that the Australians migrated to their present home as a very early off-shoot of the *Anthycomi* (stiff-haired men).

Prof. A.R. Wallace considered that the Australian aborigines constituted the lowest and most primitive fragment of the widely scattered Caucasian division of the human family, and were consequently closely related to the European (Caucasian). He also connected them with the Ainu of Japan, the Veddah of Ceylon, and the Toalas of Celebes, all of whom are low Caucasians.

Sir W.H. Flower thinks Australia was originally peopled by the frizzly haired Melanesians, mixed with a low form of Caucasian Melanochroi, the Tasmanians being of Melanesian

descent only.

R.H. Davis assumes that the ancestors of the Tasmanians, who were Australians, voyaged in canoes from the vicinity of King George's Sound to Tasmania.

E.M. Curr sought to prove their descent from the African negro crossed by some other race.

The Rev. J. Mathew assigns them a Papuan-Dravidian-Malayan origin, in the sense that they were congeners of the Australian.

Prof. J.W. Stephens stated that the tide of immigration to Australia flowed from Northern Asia through India.

R.H. Mathews assumes they are negroids and that the present continents of Asia, Africa and Australia had at one time an unbroken continuity.

E.J. Eyre opined that Australia was first peopled on its northwestern coast, between the parallels of 12° and 16° South Latitude.

Dr. J. Park Thomson thinks that the Australian aborigine, like the Diprotodon and other extinct animals peculiar to Australia, is an independent product of the country, having no kinship with the rest of the human family.

Dr. Schoetensack claims Australia as the cradle of the human race, from which all other races and nations have sprung.

J. Bonwick sought to establish the first migration from a southern, now sunken continent, directly upon the Southwestern part of Australia.

Prof. E.B. Tylor thinks the Tasmanians were representatives of the Stone Age development in a stage lower than that of the Quaternary of Europe, and that the Australians, judging from their improved methods of warfare and implements, stood on a somewhat higher level than the Tasmanians.

Dr. A.W. Howitt accepted Sir W.H. Flower's and R. Lydekker's suggestions that Australia was originally peopled by frizzly haired Melanesians, such as the Tasmanians, with a subsequent infusion of low Caucasians like the Viddahs of Ceylon, the Todas of India and the hairy Ainu of Japan.

Prof. Baldwin Spencer postulates three lines of migration from the north into Australia, but offers no theory as to the origin of the migrants.

Dr. Topinard defined the Tasmanians as a "race by themselves", and thought that the Australians might be the result of a cross between a smooth-haired and a negro or autochthonous race.

Prof. Semon typified them as Negritos, but supposed Australians and Dravidians to have sprung from a common branch of the human race.

Dr. Klastsch is of opinion that in prehistoric ages there existed a central point between Asia and Australia, from which in one direction had been distributed the Asiatic people, and in another direction the Australian blacks, whom he considered as a relic of Primitive mankind. He agreed with Huxley in his opinion that a close connection existed between the skulls of the Australian aborigines and those of primitive man in Europe. (Dr. Klastsch collected and examined some ninety skulls of Australians during his research work in Australia.)

Miss Georgina King anticipated Dr. Klastsch's conclusions in a paper read before the Science Congress in Melbourne (1900) by advancing the view of the similarity between the paleolithic men of Australia and Europe, her evidence being supplied from the stone implements etc., found in the auriferous gravels which were ejected during the period of volcanic activity before the glacial epoch.

Dr. Ramsay Smith (Adelaide), in a Paper on "The Place of the Australian Aborigine in Recent Anthropological Research" stated that the only recorded instances of supernumerary molars occurred amongst Australian aborigines, and that the size of the teeth, as well as their number (7), show the primitive character of the Australians, for the jaws have not shrunk nor the molars got less as in the whites.

Prof. Gregory did not think that the arguments adduced by Howitt and other writers that man crossed to Tasmania before the formation of Bass Strait were sufficiently adequate to

counterbalance the overwhelming geological evidence in favour of the separation of Tasmania long before the possible arrival of man. The Professor however acknowledged later that the paleolithic implements of the Western Australians resembled the Tasmanian flints, but he maintained that the roughness of the unchipped Westralian stones did not prove any direct affinity between their makers and the Tasmanians.

From the accounts of Cook, Peron and Labillardière, the Australians and Papuans showed points of resemblance to each other in their implements, utensils, personal decorations, methods of making fire, the use of kangaroo bone for needle and awl, their skin clothing, spears, fighting sticks, and legs and rafts for crossing rivers. Lyddeker mentions the possession of the boomerang by the Australians, certain primitive Caucasian tribes of Southern India, the Egyptians and Abyssinians, and a boomerang is said to have been discovered in central Celebes which may have belonged to the Toalas, the aboriginal inhabitants of that island. He assumes that the Australians are more nearly related to the European (Caucasians) than the comparatively civilised Malays, Mongols and Negroes, and that the origin of the Dravidians, Veddahs and Australians is derived from the Neanderthal people, the Australians alone having retained the low type of skull characteristic of their prehistoric forefathers.

These theories require a great antiquity for the indigines, but as all geologists agree in stating that Australia possesses some of the oldest land masses on the surface of the globe, so also it may be assumed that her human inhabitants represent the most primitive type of mankind.

As regards the age of the continent, particularly its western portion, Prof. Geikie stated that the Palaeozoic period was represented on what is now the west coast of Australia, by an elongated tongue of land, extending from the 20th parallel to the 32nd. In the Mesozoic period the whole of West Australia had become visible, and the Tertiary

period saw Australia a complete continent.

The Tertiary period was noted for the production of the *Diprotodon Australis*, *Macropus titan*, *Nototherium dunense*, and *Zygomaturus*, all vegetable feeders, and all types of purely local development, having their rise, progress and extinction in Australia. Dr. Wallace and Prof. Geikie favoured the probability of a land connection in Mesozoic age between Australia and New Zealand. Wallace's arguments rested on the flora of Australia and New Zealand. In this connection he wrote, "Southwest Australia . . . contains an equally rich flora and a far greater proportion of peculiar species and genera of plants. Sir J.D. Hooker states that there are about 180 genera out of 600 in S.W. Australia that are not found at all in the Southeast, or that are represented there by a few species only, and these 180 genera include nearly 1,100 species." Wallace concluded from these facts that Southwest Australia is the remnant of the more extensive and more isolated portion of the continent in which the peculiar Australian flora was principally developed. The existence in the Southwest of a very large area of granite - 800 miles in length by nearly 500 in maximum width - indicates such an extension, for this granitic mass was once buried under piles of stratified rock since denuded, and then formed the nucleus of the old W.A. continent.

In the Cretaceous period, West Australia had strange marsupial forms, and its peculiar Australian flora. Two representatives of the Australian flora - *Casuarina* and *Stylydium* - have been found in the peninsula of India. China and the Philippine Islands have also two strictly Australian genera of orchidiae - *Microtis* and *Thelymitra* - as well as a restiaceous genus.

In a Presidential Address before the Geology Section of the Aus. Ass. for the Advancement of Science (Adelaide), Mr. Gibb Maitland, Chief Government Geologist of Western

Australia, stated that "In a broad and general way the geology of West Australia offers many interesting points of analogy with that of South Africa and India." Mr. Maitland traced Permo-carboniferous rocks in the watersheds of the Gascoyne, Lydon and Minilya Rivers. In the Kimberley beds Devonian and Carboniferous fossils have been associated, and Cambrian beds occur south of lat. 18. The existence of a glacial conglomerate in the Marine Permo-Carboniferous rocks, near the Tropic of Capricorn has only recently been recognised.

S. Goeczel indicated a Palaeozoic Age for the greenstone and allies of the Norseman district (about lat. 32, 30) the micaceous and talcose schists of the same district being referred to the Archaen.

(In the "deep lead" of the Princess Royal Mine, Norseman, [?] sponge spicules and Tertiary beach remains were discovered.)

In 1883 a specimen of the Diprotodon was discovered by E.T. Hardman in the bed of the Lennard River, 80 miles from King Sound, North Kimberley. In the neighbourhood of Lake Way (about lat. 27, long. 129.30) fossil remains of the Diprotodon were also found, and in the Balladonia district (about lat. 32.30) remains of the same species were unearthed. The bones were found in the sand and silt beside the granite rocks which outcrop from beneath the Tertiary limestone, Balladonia; also at Cook's Rocks 20 miles north, and at Woomburna Rocks 12 miles south of Balladonia. They were found at the very shallow depths of from 4 to 12 feet at Balladonia, and from 4 to 8 feet at Cook's and Woomburna Rocks. These rocks formed watering places for the Diprotodon, as they still do for the kangaroo, and the animals either got bogged, or perished when the water gave out. It is quite likely that other and more important discoveries will be made in the vicinity when further and more systematic search is undertaken. These watering places have been used by the first tribes or groups which found their way to that area, and traces of their presence contemporary with the Diprotodon may yet be discovered.

The discovery of the bones of the *Diprotodon* in the extreme north and south of West Australia indicates an immense range of both geographical and climatical habitat. Some extremely interesting and important finds have recently been made in the Mammoth Cave, about two miles from the mouth of the Margaret River (S.W.). One is that of a new species of *sthenurus occidentalis*, found, with many other fragments of bones and teeth, by some workmen. Owing to the true significance of the find not being apparent, some portions were destroyed, but those that were saved proved to be fragments of a new species of the long extinct form of marsupial *sthenurus*, this genus of the *Macropodidae*s not having previously been recorded from West Australia. Other extinct forms have also been discovered.

One of the strongest proofs of the antiquity of man's presence in Australia lies in the fact of the geological connection of Australia and Tasmania and the subsequent submergence which formed Bass Strait; for as the Tasmanians are supposed to have reached their island while it still formed part of the continent, their arrival must have occurred before that submergence.

The theory which appears to be generally gaining ground is the Melanesian-Low Caucasian theory, or as Mr. Mathew calls it, the Papuanian-Dravidian theory, as the term Papuanian includes Melanesian, according to Mr. Mathew, and the term Low Caucasian includes Dravidian, Ceylon Vedda, and Celebean Toala. Mr. Mathew adds a Malay infusion, but confines it to the northern half of Australia, and assumes it to have been added in comparatively recent times.

The now extinct Tasmanians represented the first race only, therefore their ancestors were the autochthones. They entered the continent from the north, and gradually spread over Australia until they reached the extreme end of the continent. It was presumably while they occupied Australia that the submergence of part of the continent occurred, cutting off the portion which is now Tasmania from

the mainland, so that when the second race arrived, also from the north, and pressed forward along the route of the first comers, either overcoming and exterminating or absorbing them, the complete annihilation or absorption of the original race was stopped by the formation of Bass Strait. Hence a remnant of the first inhabitants of the Australian continent remained untouched by outside influence through the subsidence of land which made their home an island.

This race (or races, for Dr. Lesson is of opinion that the Tasmanians sprang from two dark races, and Mr. Mathew thinks that an analysis of what has been preserved of their language might resolve its constituents into two etymological elements), unlike those from whom they were derived, made no advance from the state of culture which they had reached when they entered Australia. Their weapons were those of primitive mankind - the spear, club and chipped flint. They made cloaks from the skin of the kangaroo, baskets from fibrous grasses, and rafts of bark. They possessed handled axes as well as the chipped flints, and if, as Mr. Mathew states, Dowling painted from life, the natives of the east coast of Tasmania possessed boomerangs, for two of Dowling's subjects are depicted carrying these weapons, so that besides their possession of the primitive implements, they had others which allied them curiously with the race that supplanted them on the mainland. Rafts and baskets link them with the Kimberley and Nor'West tribes. Their kangaroo skin cloaks and handled axes ally them with the Southwestern tribes, and their pointed clubs, with one end notched to form a handle, link them with the Eucla district tribes, and indeed with all the West Australian tribes as far as known, as in every tribe from the Kimberley to Eucla, this description of club is found. The Southwestern tribes were the only makers and wearers of kangaroo skin cloaks in Western Australia. No other tribe, north, northeast or east of them made or wore this covering, nor does it appear

to have been bartered beyond the confines of the tribes of the Southwest. But although the cloak connects the Tasmanians with the tribes of the Southwest, the latter had never acquired, as the Tasmanians had, the art of navigation, nor had the Eucla tribes, who also state that they did not know how to swim until the white people taught them. If either the Southwestern or Southern coastal tribes had learned the art of sea or river navigation they would never have forgotten it, for Professor Giglioli states that once the art has been acquired it is never again lost.

Rafts and logs as means of traversing the narrow passages between the islands and the mainland of the north and northwest were known and used as far as the NorWest Cape (about lat. 22). South of this point they were not known. The bark raft of the Tasmanians may have been an independent invention.

Other links that connect the Tasmanians with the Southwestern tribes are :- the use by both peoples of the flowering stem of blackboy (*xanthorrhoea*) for making fire by the drill method only; the absence of circumcision and subincision; the initiation of their youths into manhood by nose piercing, cicatrices on the chest, and a profuse application of red ochre; the use of red, white and black colours in personal decoration; the abstinence from certain foods; cooking animals and birds whole, extracting the entrails when cooked; cutting their heads and bodies in token of mourning; carrying magic crystals or bones for healing or killing; using an enemy's hair, excrement or name to cause injury or death; making huts or shelters of boughs, bark and saplings, behind which the family disposed itself, each having its own fire - all these practices were common to the Southwest Australians and Tasmanians. Several are, however, common throughout the whole of the West, as will be shown later.

As against this evidence is the fact that in respect of raft and basket making the S.W. Australians were below the

Tasmanians in culture, while their kinship system, their language, physique, and many of their weapons and utensils identify them with the low Caucasian races as typified in the Dravidians - that second invading horde which never reached Tasmania.

The Tasmanians were as variously described as are the inhabitants of the mainland, but as ethnological investigation was not started amongst them until the race had been almost wiped out, and had certainly degenerated, there may have been a greater average of height than that supplied by Ling Roth and others, viz. 5 ft. $3\frac{3}{4}$ in. for the men, and 4 ft. $11\frac{1}{2}$ in. for the women. In this connection it is interesting to note the points of difference between Captain Cook's description of the Tasmanians and that of his ship's surgeon, Dr. Anderson, "They were of a middling stature," says Captain Cook, "and somewhat slender, their hair was black and woolly and their skin was also black. They were entirely naked, with large punctures or ridges, some in curved, others in straight lines, on different parts of their bodies. Their lips were not remarkably thick, nor their noses very flat, their features on the contrary were not unpleasing, their eyes pretty good, and their teeth tolerably even and regular though exceeding dirty. The faces of some of them were painted with a red ointment and most of them smeared their hair and beards with the same composition." Landing upon another part of the island, Cook thus describes them, "Those whom we now saw differed in some respects, particularly in the texture of the hair, from the natives of the more northerly portion of the country ... Some ... had a slip of kangaroo skin round their ancles, and others were round their necks some small cords made of fur ... Their habitations were small hovels or sheds built of sticks and covered with the bark of trees. The females ... wore a kangaroo skin fastened over their shoulders, the only use of which seemed to be to support their children on their backs ... Their bodies were black,

and marked with scars like those of the men, from whom, however, they differed in having their heads shaved, leaving a very narrow circle of hair all round."

Dr. Anderson thus describes the Adventure Bay natives, "They seemed mild and cheerful . . . They display some contrivance in their method of cutting their arms and bodies in lines of different directions raised above the surface of the skin . . . Their complexion is a dull black, which they sometimes heighten by smutting their bodies as we supposed, from their leaving a mark behind on any clean substance. Their hair is perfectly woolly, and is clothed with grease and red ochre, like that of the Hottentots. Their noses are broad and full, and the lower part of the face projects considerably. Their eyes are of a moderate size, and though they are not very quick or piercing, they give the countenance a frank, cheerful and pleasing cast. Their teeth are not very white nor well set, and their mouths are too wide; they wear their beards long and clotted with paint. They are, upon the whole, well proportioned, though their belly is rather protuberant."

The Rev. J. Mathew states that as compared with the natives of the continent the Tasmanians were on the average of shorter stature, of slightly darker complexion, and had hair of very different quality. Their average height was about 5 ft. 2 to 5 ft. 5 in. Their skin was a brownish black, their hair was very abundant and generally grew in long thin ringlets, and they had the hooked nose of the Papuan peoples. All these characteristics were more uniform in the Tasmanians than in the Australians owing to the grafting upon the latter of the low Caucasian.

The Dravidian or low Caucasian migrants probably arrived in detached bands at irregular intervals, in much the same way as settlement of countries takes place at present. There was still a comparatively uninterrupted land route between India and Australia via Ceylon, the Nicobar and Andaman Islands (now merely coral reefs in the Bay of Bengal), the

Malay Peninsula, Java, Borneo, Celebes, and Timor, or via New Guinea. Dr. R.L. Jack states that the numerous islets and reefs between Cape York and New Guinea, suggest a former connection between the two lands, as at the present day an elevation of about 100 feet of the islets and reefs would form an uninterrupted land chain from Queensland to New Guinea.

Wherever the two races came in conflict with each other, the newcomers, being better equipped, would subjugate the local inhabitants whose customs, dialects, etc., would be either assimilated or superseded by those of their conquerors. These Dravidians probably over-ran most of the then mainland of Australia, implanting their customs, kinship system, language, implements, physique, wherever they went.

The climate and physical features of Australia may have been at the time of their arrival very much what they are at present; therefore in some districts, well supplied with food and water, families or groups or clans or tribes would settle permanently, as apparently they did in the Wide Bay district, Queensland, occupied by the Kabi and Wakka tribes; the Gippsland area of the Kurnai and Kamilaroi people, and the well-watered, thickly timbered and game-abounding areas of Southwestern Australia where the most homogenous of all the tribes of the West are situated.

Mr. Mathew in his recent work (Two Representative Tribes of Queensland) deals with the Kabi and Wakka people, and the late Drs. Howitt and Fison, made the Kamilaroi and Kurnai tribes the subjects of special investigation and research. The Southwestern tribes will come under full notice in the present work.

A comparison of these three peoples, situated in districts so widely apart as to preclude any idea of a recent intercourse between them; of their language, social system, kinships, etc. etc., will be productive of special interest, from the extraordinary affinity that appears to exist between them. At any rate, it will confirm Mr. Mathew's

theory that the second horde entered from the Northeast. Little by little presumably, the Dravidian element intruded itself upon the race that had preceded it, until it had almost obliterated all traces of the original stock. In some places, as in the areas above mentioned, the Dravidian strain was more apparent than in others, but its influence is apparent in all the known tribes of the West.

The Dravidians were a comparatively straight haired people, and had a somewhat lighter complexion than the Tasmanians (though the colour of Truganini, Tasmania's last female aborigine, was said by those who knew her to have been a chocolate brown, or, as it was called, a dark brown.) They were of slender build, with delicate finely shaped extremities. The shape of their heads was dolichocephalic, and their hair was the true Caucasian texture, as represented in some of their purest descendants - the Southwest Australians. Their system of kinship obtains at the present day amongst the Western Australian tribes, the base element of which is that "a man's brother's children are considered his own children, while his sister's children are his nephews and nieces, but the grandchildren of his brothers and sisters are considered his grandchildren," this system obtaining also amongst the Kamilaroi, according to the Rev. W. Ridley and Dr. Fison.

The Dravidian language can be more clearly traced in the Southwestern area than in any other part of the West. It is said that the boomerang was brought by the Dravidian migration, but if so, how did it get into Tasmania? Their customs have been implanted with their language, their methods of sorcery, their knife, fibre and hair strings, all these have come down to their apparently direct descendants in the Southwest. It was probably owing to the purer strain - the mixture of Papuan and Dravidian only - in the Southwestern people, that they faded away so quickly at almost the first touch of civilisation. The more unmixed the race, it is said, the quicker its disappearance

when brought into contact with a higher race than itself.

The next infusion or invasion into Australia was that which Mr. Mathew calls Malayan. If circumcision was brought in by Malaysians then the invasion was upon a much greater scale than Mr. Mathew in his later work claims for it. That it did not come in with the Dravidian migration is shown by its absence in the three peoples most nearly and directly akin to the Dravidians - the Kabi and Wakka; Kamilaroi and Kurnai; and the Southwestern tribes. It apparently came after the Dravidian, and presumably not from the same point, probably from the north. Whether circumcision alone was first brought into Australia or whether the "terrible rite" came with it is a moot point. At any rate it does not appear to have been introduced by the first or second migrations, since neither the Tasmanians nor the purer Dravidian element in Southwest Australia, part of Victoria and Queensland practised it.

In the Kimberley region, both rites are observed, and in the Eucla area also the performance of both rites takes place. In both these areas Malay types of humans are to be met with, but only sporadically, for in all the tribes and groups which I have visited or sojourned with, I have never met a local group of Malayan type.

Amongst the Northern, Central, South Central and Southern tribes there is a similarity of customs more remarkable than that existing amongst the tribes of the Southwest, as the former area is so much larger. Certain words in their otherwise varied dialects are similar. For instance, in the Nullagine district the term for man is "mulba", and I find exactly the same word, expressing a similar meaning, amongst the tribes of the "90 Mile" west of Eyre, and also at Balladonia. In the Broome and Beagle Bay districts the sacred object (called by white people "bull-roarer") is known as "kalligooroo" and amongst the natives residing somewhere near the neighbourhood of the Boundary Dam, the same term is applied to the instrument, which is only touched

by the youth after he has been subincised. Another word, the name of a carved flat stick used also in initiation - "larra" - is found in both Kimberley and in the area about Boundary Dam. The secret and sacred name of the knife or flint used at initiation by the Murchison tribes is "ji'marri" and this is also the name of the initiation knife in the Boundary Dam area. In this instance however, it is probably because the jimarri is bartered along a route that would bring it eventually into the tribal area mentioned.

The fact that the Kimberley and Eucla district tribes have similar initiation rites marks their homogeneity. But there is a much greater variety of type amongst the central or circumcised tribes than amongst the Southwestern people. In the Eucla area alone may be found men whose height varies from 4' 11" to 5' 10"; and women whose height ranges from 4' 10" to 5' 6 or 7". Some local groups whose own immediate ancestors have occupied certain water-holes and those only, are short, stumpy, broad-headed, rather hairy men, their children also being undersized and thickset. Others again are tall, thin and on the whole finely formed, but of a darker tint than the previous group mentioned. These are also in the Eucla area, but about 150 miles eastward of the former group. From the Boundary Dam area southeastward and southwestward a light-coloured tall and wavy haired type as well as the yellow coloured lank-haired Malay type appear to be located, all the specimens met with from those areas answering to this description. Again in the Kimberley areas great varieties are met with, as also in the Champion Bay, and Northampton districts. Fair and dark types may be met with near the head waters of the Murchison and Gascoyne Rivers; and tall and short, curly and straight haired, long headed and round headed, large boned and delicately made types, with equally varied features, have been met with east, north and southeast of the Eastern Goldfields areas. Amongst all the tribes, however, I have never yet found a woolly haired man or woman.

The hair is extremely curly in some individuals, wavy in others, and rather straight in some families. The straightest haired woman met with was a native of the Boundary Dam area, and the most curly haired man was a native of the Broome district. The woman was a distinct Malay type, as was also her own mother's sister, the only other member of her family I had an opportunity of examining. These women were of good height, the younger being 5' 6", coarsely and thickly built, with clumsy hands and feet and weighing over 11 stone. The Broome district man was about 5' 7" in height, slenderly built, with well-shaped hands and feet. A fair-haired, flat-faced type was met with on the Upper Murchison and on the Middle Branch of the Gascoyne Rivers, and also west of Peak Hill (Murchison). The hair was curly or wavy, that of the children being curly and bright golden when washed.

Sir.A.C. Gregory encountered a variety of types in the Champion Bay district when he landed at that point in 1846. There were apparently three general types, of which he writes :- "We found about 1,000 within a radius of 50 miles. . . Many of the coast types were of greater stature than those of Swan River, some of the men being six feet, and a few over that height. They appeared to consist of three races, the first - about a third of the whole - were squarely built, with short legs and broad hips, short necks, straight hair (dark), heavy jaws with comparatively thin lips, and copper coloured skin. The second race were rather more numerous (being about a half), of much lower stature (about five feet six inches), slighter in build, longer in the legs, large heads covered with dark curly or frizzly hair, mouths large, black skins, and general type more of the aborigines of South Australia generally. The third and the least numerous race were slight in figure, of moderate stature, aborigines about five feet eight inches, fairly proportioned, with rather small heads covered with light flaxen hair, the

eyes approaching the colour of the same, the features flat and wanting in character. . . As we moved inland, these distinctive characteristics disappeared, and gradually merged into the diminutive, spare, and almost monkey-like tribes, or rather families of the interior, which condition is probably the result of local influence. . .

Proceeding northward to the Gascoyne River, we found nearly all the tribes of much the same type as what I have designated the second race at Champion Bay, but with this difference, that the hair became much shorter and almost woolly, the lips protruding and aspect more South African, a few, however, partaking of the Arab in stature and features, the forehead being high and narrow, lips thin, and mouth comparatively small, with falling shoulders. These peculiarities are more freely developed in many of the natives of Nichol Bay, who fairly represent the average Arabs about the Gulf of Aden. In other respects, the tribes about Nichol Bay, the De Grey and Fortescue Rivers would appear to be of the older aboriginal stock, with unmistakable traces of a cross with Malay."

Here is variety of type indeed! and within a comparatively small radius. It is interesting to note that the line of demarcation between the circumcised and uncircumcised tribes touches all these areas. Another interesting circumstance may be mentioned with regard to the fair haired type which Sir A.C. Gregory found in the vicinity of Champion Bay, and which I met with in the Murchison and Gascoyne (upper) districts. There was a peculiarity in the dialects of the areas in which these fair haired people were found that seemed to be entirely confined to these areas, the dialects pointing to a foreign strain of some kind. Specimens of the dialect were collected, and from these philologists will doubtless determine from whence the strain comes. The dialects were only found amongst tribes where there were some fairhaired members.

The apparent line of travel of the fairhaired people

seems to have been from some point on the coast in the neighbourhood of Abrolhos Islands, along the Murchison and Sanford Rivers, towards, and probably beyond Peak Hill, as I have found traces of the dialect amongst some fair-headed natives north of Peak Hill. Such variation of type amongst the Western peoples cannot have been due to climate or the sufficiency or otherwise of the food supply, as in the spinifex and desert areas north and east of Lake Way, I have found tall, strong, well-nourished members of local groups, while in the Broome and Beagle Bay districts, and in parts of the Southwest and South, where there is no scarcity of food during any time of the year, some very poor types were met with.

This diversity of type would appear to make the Western aborigine a mongrel breed, yet amongst all the variations, there is a certain definite homogeneity that bespeaks a general relationship. The eyes are always dark and inset under the heavy protuberant arch peculiar to the Australian, Neanderthal, and other types of early man, though in the fairhaired people the eyes were of a lighter shade, and the brows were not so prominent. The hair, too, is generally black, though with degrees or shades in the blackness. In the Kimberley, Murchison and Eucla areas, some natives will be noticed whose hair is of an intense black, and in the same areas a "warm" black will more exactly describe the colour. Amongst many natives the ends of the hair have rather a rusty yellow tinge, this being particularly the case with natives who have come under the influence, and have adopted the cleanly habits, of the whites. Frequent washing tends to lighten the ends, but not the roots of the hair, these being always black, except of course amongst the fair-haired specimens. Even the hair of these people is somewhat darker at the roots, and as they get older the hair becomes a rusty sandy colour, and also becomes harsh and brittle in texture, and appears to lose its tendency to curl.

The darkest colour amongst them is a chocolate black, the lightest a light brown or dirty yellow. In the York district a native was met with whose colour was of such a much darker hue than that of the other members of the local group, that he was particularly noticeable on that account. Special inquiries however disclosed the fact that he was the son of a native of America, St. Helena, or perhaps an African native who had run away from a whaler which had touched at some of the Southwestern or Southern ports in the early days of white settlement. Generally however the colour of the Western aborigines is a chocolate brown, lighter and darker shades appearing sometimes in members of the same family group. Along the coast, the colour is darker than in the inland areas, some Kimberley, Southwestern and Eucla district men being amongst the darkest, while, excepting the fairhaired, the lightest coloured have been found near the border of West and South Australia, about lat. 29 or 30.

Hook-nosed natives have been met with in the Kimberley, Southwest and Eucla districts, but if the parent is hook-nosed, it does not follow that his offspring are hook-nosed as well. One old native from the district beyond Lake Way unconsciously demonstrated one method by which the nose may become hooked in appearance. His nose had been pierced close to the point, and as soon as he had placed the nose bone in the hole, the nose took a downward tendency. One method of piercing the nose is by placing the points of two sharp stones in either side of the septum, and then pressing them together until they meet. Sometimes the hole is made near the root of the nose, and sometimes near the point. When attention had been directed to the manner of piercing the nose, it was noticed that many of the so-called Jewish noses were given their downward tendency from the hole having been pierced too near the point. Some comparatively straight noses were found amongst the Southwestern tribes, as some of the accompanying illustrations show.

There was sometimes a thick coating of hair on the body, but as a general rule the aborigine has not more hair on his body than the ordinary white man, and the bodies of some of them are as lightly covered with down and as smooth as those of the ordinary European. Their hands and feet were, as a general rule, small and well-shaped, the arch of the foot being well defined. This was supposed to have resulted from their habit of climbing trees, but it is equally pronounced in tribes living in treeless areas. The thickness of the sole is a peculiar native feature, two which were measured - the owners having received some severe cuts - being one-eighth of an inch in thickness. The flexibility of the toes is another general characteristic, the slender-footed excelling their heavier footed comrades in the many uses to which they can put their toes.

Above all is the characteristic odour, ^{which,} to those familiar with it, distinguishes the Australian aborigine from any other dark race. Half-castes do not possess it; it only emanates from the pure-bred native, and is as truly representative as are his brow ridges and general colouring.

Arguments in support of, and against almost every theory concerning the origin of the Australian race might be advanced from the customs, weapons, physiology, etc., of the West Australian tribes were it not for the fundamental homogeneity which is apparent in all of them.

In the Southwestern districts, customs and implements ally the inhabitants with the Tasmanians, but the former have the Caucasian physique, and the Dravidian system of kinship, while the latter have the raft, and knowledge of basket making that the Southwestern tribes did not possess.

In the Kimberley, Central and Eucla districts the customs of circumcision and subincision which obtain are against the kinship, though amongst the varied types inhabiting this great area, Papuan features and physique as represented in the Tasmanians may be observable, and some

of their spears, clubs and flints are similar to the Tasmanian.

The accompanying map of the area of the circumcised tribes shows how small a portion was left untouched by them at the period of white settlement. They were steadily but slowly encroaching upon the western coastal tribes, as is shown by their nearness to the coast in the Geraldton district, where they had come within twenty miles of Champion Bay. Proofs of their encroachment came from contiguous tribes. In the Champion Bay area a local group was sometimes induced by profusion of presents, to give one of its boys to the circumcised tribe with whom it was in most friendly intercourse. No boy was ever given in exchange to uncircumcised tribes. The boy's family, his brothers, fathers, etc., were then approached either by the present of wives, or by the betrothment of young children to them, and not infrequently such an arrangement ended in one or more of the boy's people becoming circumcised. Even at the present day there are many men belonging to the uncircumcised areas about Champion Bay, who have been circumcised by some contiguous tribe, and are living with the tribe that "adopted" them. In the Southwestern areas a similar proceeding took place amongst the tribes adjoining the circumcised areas, and there is one authentic instance of a boy from the Capel (coast) district of the Southwest having been taken on his initiation journey from tribe to tribe until he came to the borders of the circumcised people, when his guardians were induced to hand him over on receipt of presents and women. This however is the only instance of a southwestern coastal boy being passed through the many intervening tribes into the circumcised area, and it had a curious effect, for the women who had been given to the boy's guardians brought their dialect with them, and this dialect was spoken in the district only from which the boy and his guardians had started on their travels, mixed with the ordinary Southwestern dialect.

Whether the circumcised people came in one horde or intermittently, cannot yet be determined. The similarity of terms between West Kimberley and the Boundary Dam area, might suggest a line of route from northwest Kimberley along the Fitzroy River, Christmas Creek, towards the head waters of the Sturt, and southwards along the pools and watercourses of the country between Sturt Creek and Boundary Dam area. The circumcised tribes east and south of the Ballaballa area (where the north-west line of demarcation begins), use different terms for the sacred objects mentioned, but their initiation ceremonies are practically similar, the variations being local. It will be shown later that in their Social Organisation there is also a difference between their system and that of the Kimberley district, while in the Boundary Dam and Eucla areas, there is again a difference. These differences, however, have not affected the line of travel of circumcision and the "terrible rite".

The terms applied to the phratries (in the Southwestern district) - Manitchmat (white cockatoo stock or family; mat, maat = track, stock, leg, handle, family), and Wordungmat (crow stock), are the same terms that are today applied to the two birds from which the phratries have been named, Manitch is the name of the white cockatoo, and wordung the term for crow, in all the tribes between Jurien Bay and Esperance. Not only in colour, but in general physique, the Crow type could be distinguished from the White cockatoo. The former was generally more thickset, and less delicately built than the latter. They could not however be divided strictly into a curly-haired and straight-haired people, for both curly hair and straight hair were found in members of the same phratry. The late Andrew Lang was of opinion that such distinction of colour, etc., was impossible in a people who had intermarried from time immemorial, and that their mixed descent was also a stumbling block

against persistence of type, yet the fact remains that amongst all the tribes personally investigated, there were to be found fairer and darker men and women in every group. In almost every tribe there is a dialectic equivalent for fair and dark, straight hair and curly hair.

The Southwestern tribes probably maintained their purity of type from their isolation. The tribes east and northeast of them were circumcised people, and those people directly north of them were an isolated people themselves, between whom and their neighbours there were but the general interchanges of dances and articles of barter.

Their myths were also primitive. Volcanic upheavals, attributed to the "woggal" or mythical carpet snake; great floods, which drowned everyone except a pregnant woman, or a woman and her son, etc., myths connected with prehistoric beasts, whose fossil remains are now being discovered in the Southwest. All these mythical tales belonged exclusively to the Southwestern people, though they also possessed myths common throughout the State. These myths are given in another place.

No attempt is made to compare their language with that of any other peoples, but a collection of dialects, ranging from Gingin to Esperance, was made, and from these philologists may determine to what language the Southwestern tribes are akin.

Although the S.W. tribes have two forms of descent amongst them, they still, in the similarity of their customs, weapons, dialects, physique, etc., represent in themselves, the purest and most homogeneous of all the Western Australian tribes.

Cranial measurements are not always safe in distinguishing a race or species, as both extremes - long-headed and short or round-headed - may meet in the same species. Yet, taken in conjunction with other evidence, they may have a certain weight.

The following measurements of West Australian aborigines were taken by Dr. Milne Robertson at Rottnest Island Native Prison in 1879; by Dr. Wace in 1901 from skulls in the Perth Museum, and by Miss E.L. Walker, B. Sc. (Adelaide University) in 1907, from native prisoners at Rottnest, and from the last representatives of their tribes in the Capel, Vasse, Perth and Gingin districts.

Two native skulls, examined and measured by Dr. Robertson according to Prof. Huxley's method gave the following results :-

	<u>No 1.</u>	<u>No 2.</u>
Axis	$7 \frac{5}{8}$ "	$7 \frac{1}{4}$ "
Transverse axis	$5 \frac{1}{4}$ "	$5 \frac{3}{8}$ "
Height	$5 \frac{1}{2}$ "	6 "
Projection of Upper jaw	$1 \frac{1}{2}$ "	$1 \frac{5}{8}$ "
Cranio-Facial angle	94°	97°
Cephalic Index	68.85	74.32
Contents	60 cub. in. ratio 19.22	95 cub. ins. ratio 20
Thickness of skull		
Parietal bone	$\frac{7}{16}$ "	
Frontal bone	$\frac{4}{16}$ " to $\frac{7}{16}$ "	

Huxley having stated that the forearm and hand, the foot and leg of the Australian were often larger in proportion than the European, Dr. Robertson measured 50 W.A. natives together with 50 Europeans with the following result :-

<u>Forearm and Hand</u>		<u>Leg</u>		<u>Foot</u>	
European	Native	European	Native	European	Native
17	17	17	17	9	8%
18%	19%	20	22	11	10%

Mean of aggregate measurements :-

17.52	18.3	18.28	19.02	10.08	9.78
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Dr. Wace's measurements are of skulls of 16 natives whose districts ranged from Kimberley in the North to Cranbrook on the Southern line. The measurements were taken with Flower's craniometer, the capacity being obtained with mustard seed :-

<u>Locality</u>	<u>Sex</u>	<u>C.</u>	<u>L.</u>	<u>B.</u>	<u>Bi.</u>	<u>H.</u>	<u>Hi.</u>	<u>B.N.</u>	<u>B.A.</u>	
Kimberley	M.	-	171	133	77.77	-	-	-	-	
"	N.	F.	-	174	125	71	131	75	90	93
Broome N.	F.	480.5	172	129	71.8	131	75	100	100	
Mt. North	F.	475	174	125	72	131	-	90	93	
Derby N.	M.	490.5	177	128	73	127	70	101	100	
"	M.	490.5	176	129	73	124	76	99	104	
"	F.	490	170.5	125.5	71	130	74	97.5	101	
Shark B.	M.	520	185	133	74	138	68	107	104	
"	N.W.	M.	515	183	135	-	136	-	93	85
Yalgoo C.	F.	477	177.5	132.5	74	122	68	95	99	
Murchison district	M.	505	184.5	132.5	71	131	71	100	100.5	
Cue, C.	M.	515	192.5	130	67	138	71	111	116.5	
"	F.	485	176	131	74	129.5	73	93	91.5	
Yalgoo	F.	510	184	129	70	131	71	99	104	
Jarrahdale	M.	501	184.5	132.5	71.81	138.5	75.06	109.5	107	
S.W. Cranbrook	M.	490	176	127	72	-	-	-	-	
S.W. Line	M.	490	176	127	72	-	-	-	-	

Measurements continued on next page.

For key to above, see pp. 32 + 34

Locality	Sex	Ai.	Nh.	Nw.	Ni.	Ow.	Oh.	Oi.	Capacity
Kimberley	M.	-	46	25	54.3	36	33	91.66	-
"	F.	103	42	23	54	32	32	100	1195
Broome N.	F.	100	43	27	-	41	34	-	1200
Mt. North (Barrier Rge. Kimberley)	F.	99	42	23	45	32	32	82	1195
Derby	M.	105	53	24	50	40	33	88	1110
"	M.	103	48	24	56	36	32	79	1160
"	F.	97	44.5	25	55	36.5	29	86	1315
Shark B.	M.	103	49	27	-	41	36	97	1300
"	M.	-	55	23	-	34	33	-	1310
Yalgoo	F.	104	50	24	48	34	33.5	98	1210
Cue	M.	100	49.25	26	26	37.5	32.5	-	1360
"	M.	104	48.5	28.25	17	38.5	28.5	74	1250
"	F.	98	45.5	26.5	58	40	31	77	1202
Yalgoo	F.	105	45	26	57	39	31	79	1340
Jarrahdale	M.	97.71	49.5	28	56.56	39.5	30	75.94	-
Cranbrook	M.	-	46	25	54	39	31	78	-

Miss Walker's measurements were taken from the heads of living natives :-

	Capel BAABURGURT	Vasse Ngilgi	Perth Balbuk	Gingin DOOL	De Grey N.W. WALBARING
Max. length, back to front	19.2	17.9	18.3	19.2	19.3
Breadth	13.5	13.6	13.6	13.9	14.3
Length (side to side)					
Length of nose	5	3.9	5	4.9	5.2
Breadth of nose	4.2	3.8	4	4.8	4.2
Vertex to mouth	19.9	20	18.2	21	19
Vertex to chin	21.5	22	22.6	23.6	23
Vertex to Tragus	13.9	10	13	13.2	14.6
Vertex to Foramen Magnum	16.2	15	17.3	17	17.4
Nasian to chin	7.9	7	7.8	8.8	7.1
Tragus to Tragus	13.2	13.8	13.8	13.3	14
	Albany YINGILIT	Albany KURRIJEL	Murchison KONDIBOMER	Esperance WOOBI	Williams S.W. BARDIL
Max. length, back to front	19.5	19.8	17.6	17.4	19.3
Breadth (side to side)	14	14.3	13.8	14.2	15
Length of nose	6	5	5	5	4.3
Breadth of nose	3.8	4	5	4.2	4.8
Vertex to mouth	21.5	18	20	19.1	19.2
Vertex to chin	23	22.6	23.6	23	23.8
Vertex to Tragus	13.5	13.2	14.5	14.3	14.2
Vertex to Foramen Magnum	17.4	18.1	17.2	17.2	17.8
Nasian to chin	11.4	11	11	11.1	12.3
Tragus to Tragus	13.2	14	14	14.1	13.8
Horizontal circumference	56c	53.4	55	54	56

	Albany DIAMOND	Victoria Plains NEWMAN	Lake Way BILLY	Menzies PADDY	Lawlers TOMMY	Wynd ham BILLY
Maximum length	19.4	18	17.8	17.8	19.5	18.3
Breadth	14.3	13.9	14	14	14	14
Length of nose	5.6	5	4.8	4.6	6	4.8
Breadth of nose	4	4	4.5	4.6	4	4
Vertex to mouth	19.5	17.5	19	18.2	20	19.2
Vertex to chin	23.8	21.8	23.2	22.5	23.5	23.2
Vertex to Tragus	14.5	13.3	14	14	15	14.5
Vertex to Foramen Magnum	17	16.8	17.8	17.8	17.5	17.6
Nasion to chin	12	10.9	11	11	11.2	10.2
Tragus to Tragus	12.9	12.3	13	12.6	13.8	13.2
Horizontal circumfer- ence	55	53	55.6	54.6	56	54

The following Table of stature and girth round the chest of natives at Rottnest Island, taken by Dr. Robertson in August 1879 covers districts from Albany to Roebourne :-

Locality	No.	Greatest Height	Greatest Girth	Least Height	Least Girth	Average Height Girth	
Albany	10	5' 8	2' 11½	5' 0½	2' 6½	5' 3½	2' 7½
York	13	5 5½	3 0½	5 0½	2 5½	5 3½	2 7½
Champion Bay	12	5 6½	2 9½	5 0½	2 6	5 3½	2 7½
Murchison	13	5 9	3 0	5 2½	2 6½	5 5½	2 8
Roebourne	3	5 9½	3 1½	5 4	2 11	5 7½	2 7½
Gascoyne	2	5 6½	2 10½	5 5½	2 8½	5 6	2 9½

The greatest height in those 53 natives was 5'9½ inches, the least 5'0½"; the greatest girth round the chest 3 feet, and the general average of height 5' 5½", and of girth 2'9½".

Specimens of hair from seven natives belonging to the Southwestern districts were submitted to Dr. J. Burton Cleland and Dr. E. Paget Thurston who gave the following results :-

<u>Ngilgi, f., Vasse</u> (Manitchmat)	<u>Balbuk, f., Perth</u> (Wordungmat)	<u>BAABURGURT, m., Capel</u> (Manitchmat)
2.6 x 1.6	2 x 1.55	2.4 x 1.5
2.6 x 1.5	3 x 1.7	2.9 x 1.3
3.2 x 1.8	2.2 x 1.5	2 x 1.1
2.7 x 1.7	2 x 1.7	2.2 x 1.5
2.8 x 1.8	2.2 x 1.5	2.5 x 2
2.7 x 1.8	2.35 x 1.5	2.6 x 1.5
3 x 1.8	2.2 x 1.5	2.1 x 1.5
3 x 1.95	2.7 x 1.7	2.2 x 1.5
3 x 1.75	2.3 x 1.4	2.2 x 1.5
<u>3.4 x 1.8</u>	<u>2.8 x 1.75</u>	<u>2.1 x 1.2</u>
29.0 x 17.5	23.75 x 15.6	23.2 x 14.6

Average

2.9 x 1.75

2.375 x 1.58

2.32 x 1.46

Coeff.

60.34

62.3

62.93

MONNOP, Victoria Plains

(Wordungmat)

2.25 x 1.8
2.5 x 1.6
2.1 x 1.5
2 x 1.8
1.8 x 1.5
2.2 x 1.2
2 x 1.6
2 x 1.35
1.25 x 1.1
1.6 x 1
19.7 x 14.45

Average

1.97 x 1.445

Co-efficient

73.35

JOOBALICH, Swan R.

(Wordungmat)

2.9 x 1.55
3 x 1.8
2.55 x 1.8
2.5 x 1.4
2.5 x 1.8
2.4 x 1.6
2.5 x 1.5
2.7 x 1.6
2.9 x 1.9
2.65 x 1.5
26.9 x 16.45

2.69 x 1.645

61.1

DOOL, Gin-

(Manitchmat)

3 x 2
2.5 x 1.5
2.8 x 1.8
2.6 x 1.5
3.3 x 2
2.3 x 1.7
3 x 1.85
2 x 1.8
2.5 x 1.3
2.4 x 1.3
26.4 x 16.75

2.64 x 1.675

63.44

WOOLBERR

(Wordung)

2.5 x 1.5
3 x 1.75
2.4 x 1.8
2.8 x 2
2.5 x 1.75
2.5 x 1.9
2.9 x 1.65
2.8 x 1.9
2.4 x 1.5
2.5 x 1.6
26.3 x 17.25

2.63 x 1.735

65.2

Coefficients :-

Ngilgi . . . 60.34

Balbuk . . . 62.3

BAABURGURT . . 62.93

MONNOP 73.35

JOOBAITCH. . . 61.1

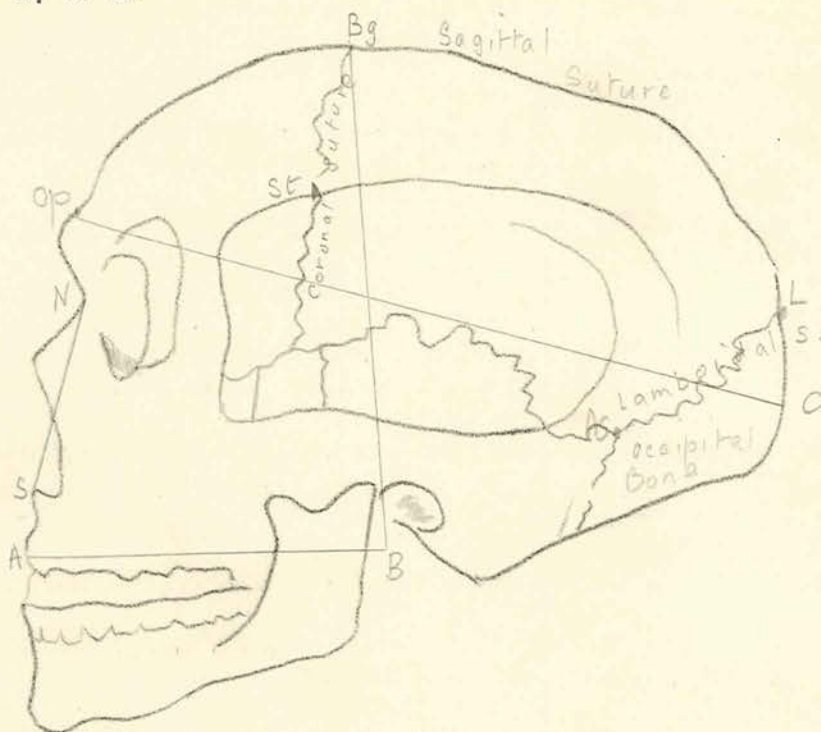
DOOL. 63.44

WOOLBERR . . . 65.2

Average . . . 64.09

Average excluding MONNOP . . . 62.55

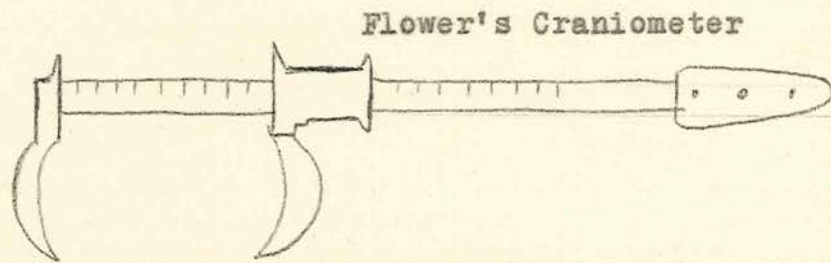
(Monnop's hair was sectionally square, as against the oval of white and black man, and resembled in cross section the Chinese type of hair, the only square section found in the S.W.)



- A alveolar point, centre of the anterior margin alveolar arch
 - B basion, the middle of the anterior margin of the foramen magnum
 - Op Centre of a line drawn across the narrowest part of the forehead
 - N The nasal point. The middle of the naso-frontal suture at the root of nose
 - S Spinal point, the middle of the lower border of the anterior nasal aperture.
 - Bg The point of junction of Sagittal and Coronal sutures. (The sagittal suture traverses top of cranium from front to back.)
 - L The point of junction of Sagittal and Lamboidal sutures
- (Sutures are immovable joints of the cranium. The edges of the sagittal suture do not meet (at Bg) on the top of the head in an infant, but tightly interlock later on.)

C Horizontal Circumference gives general idea of size of exterior of the cranium. Tape is measured round narrowest part of forehead and behind across most prominent part of occiput.
(op - O)

L Length, through skull in straight line from Op to P.



This instrument used - one arm placed on Op and the other slid along till it embraces point O,

B Greatest breadth (parietal) (from side to side above ears).

Bi Index of breadth = $\frac{B \times 100}{L}$

H Height = distance from B to Bg

Hi Index of height = $\frac{H \times 100}{L}$

BN Basinasal length (from B to N)

BA Basialveolar length (from B to A)

Ai Alveolar index = $\frac{BA \times 100}{BN}$

Nh Nasal height = a vertical line from N to lowest border of nasal aperture.

Nw Greatest width of nasal aperture

Ni Nasal index = $\frac{Nw \times 100}{Nh}$

Ow Orbital width (width of bony socket of eye), measured from posterior boundary of the lachrymal groove on the inner side of eye to the most distant point on the front edge of the outer border of the socket. (The lachrymal groove is where the tear duct lies. You can see the opening of the duct on the lower eyelid by the nose.)

Oh Orbital height (measured at the middle of the socket from upper edge to lower edge.)

Oi Orbital index = $\frac{Oh \times 100}{Ow}$

Ca Capacity measured in cubic centimetres (a difficult experiment, mustard seed being generally used, as shot is too heavy for an old skull.)

Report on Specimens of Hair from Natives of Western Australia.

(Dr. E. Paget Thurston)

Hair is being more recognised as a valuable means of distinguishing the primary races from one another. At present Ethnology is not sufficiently advanced to formulate an absolute classification. It is difficult to be sure which method of arranging the races is most widely accepted; Perhaps on the whole the following, viz. from the colour of the skin. (see Keane's Ethnology)

1. Black
2. Yellow
3. Brown
4. Coppery red
5. White

No 1. Black includes African and Oceanic negroes, Australian and Tasmanian aborigines; some aborigines of India and America, and Eastern Hamites. The hair is usually black, short and crisp, and either woolly, frizzy or tufty. The transverse section (with which this report is principally concerned) is elliptical or even flattened (that is, one diameter is much shorter than the other). This is stated to be the case with the negroes, Hottentots, Bushmen, Negritos, Papuans, Melanesians and Tasmanians. It is not so, however, with the Australians, so far as the present report goes, and indeed the exception is generally recognised.

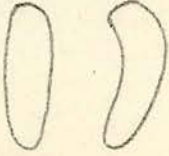
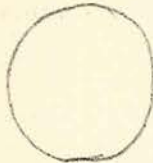
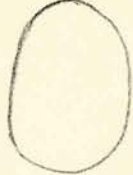
No 2. The Yellow includes Mongols, Indo-Chinese, Japanese, Tibetans and some American tribes. The hair is nearly circular in section, is long, black and straight.

No 3. The Brown includes Polynesians, Hindus, Platean Indians of America and many negritos.

No 4. The Coppery Red includes the Indians of America, mainly of N. America. The hair is very long, straight, black and nearly circular though not quite so much so as in the Yellow race.

No 5. The White includes two sub-sections, the "florid" including northern Europeans and many Caucasians, and the "pale", including southern Europeans, Arabs and Western Berbers.

The hair is various in colour, black, brown, red and flaxen. It is wavy and curly, medium in length, and an oval ellipse in section. The following rough diagram will give an idea of the three classes into which the five sections above group themselves, when examined in relation to the cross section of their hair; viz. the "flat ellipse", the "circular" and the "oval ellipse". By dividing the short diameter by the long we get the so-called "co-efficient", which is the means used in discriminating between one class and the other.

<u>Flat Ellipse</u>	<u>Circular</u>	<u>Oval Ellipse</u>
		
Negro (Especially marked in the Papuans.) All black races except the Aust- ralian.	Mongols and Red Indians (Especially marked in the Japanese) Ratio 27 to 23 to 25 to 23 (Pruner)	European (also Australian aborigines) Ratio 23 to 17 to 20 to 15 (Pruner)
Coefficient 66 to 28 (Pruner)	Coefficient 92 to 85	Coefficient 75 to 73

Dr. J. Burton Cleland, the Government Pathologist of Western Australia, has very kindly made a careful and minute examination of hair from various natives. His report is appended. This shows that with one exception (Monnop), the average coefficient is 62.55. That specimen has a record of 73.35 (identical with European) and its inclusion raises the general mean to 64.09, far nearer to the white standard than ^{to} either the negro, or the Mongol and Red Indian. Regarding the Monnop specimen, it is indicated as coming from Victoria Plains. Matthews in his "Australian Aborigines" has a map (P. 574) marking the main divisions of the aboriginal races. According to this one nation (that with two divisions - as against others with four and eight divisions respectively) occupied the South of Australia extending East and West from the West coast through the S. of S. Australia, and including Victoria and the W. part of N.S.W.. In W.A. it extended from the extreme south to a point a little to the

S. of Geraldton. Victoria Plains is exactly on this boundary line, so that this specimen may have belonged to a different nation from the others. If so, hairs from the natives of the Murchison and Nor'West districts ought to agree with the Monnop hair rather than the others. This kingdom extended northwards to a point midway between Broome and Wyndham; while westwards it went across Australia and included the southern half of the Northern Territory, the rest of N.S.W. and the whole of Queensland. The remainder of W.A. formed part of yet another kingdom which also included the rest of the Northern Territory. The examination of hairs from Wyndham natives might disclose other features again. It would also be interesting to compare hairs taken in the East of these several kingdoms with the hair in in the West.

It is rather striking that the ratio of the length to the breadth of a section of hair should be so constant. For instance, in the tribes occupying the immense distance from Patagonia in the frozen S. of S. America, passing through the Tropics to Alaska in the frozen north of N. America, in districts ranging from the sea level to 12000 feet high, the hair is of the same type, long, straight, black and nearly circular in section. So it is with the Mongol races. Extending over vast areas of Asia with very varying climates from tropical to polar, from the sea level to actually such heights as 16000 feet, the hair of all is long, straight, black and circular in section.

As regards the light thrown by such enquiries on the question of whence came the aboriginal tribes now occupying Australia - the coefficient of their hair section brings them much nearer the Caucasian races than any other. It is singular that the inhabitants of Papua, the nearest big island to the north, and Tasmania, the nearest to the south, both differ widely in this respect from the Australian. Indeed the Papuan represents the furthest extreme in the other direction, with a coefficient of 27, while in Tasmania the natives had a different facial angle and a more circular head.

The sections of "flat ellipse" not only includes the Papuans and Tasmanians but the Melanesians, so that the Australians are surrounded by races having typical negroid hair, while they themselves have not. It might be suggested that they represent an early blend between a mongol and a Melanesian stock. To set against that is the fact that the Western Australian natives have hairy faces and possess beards, flowing beards in many instances. Now the Mongol type is nearly hairless on the face and body. There may be a little hair on the upper lip but no whiskers on the chin. In this respect too the W.Australians more nearly approach the Caucasian type than any other coloured race. Climate and, it is asserted, diet, tend to produce the deposit of pigment in the deeper skin which constitutes a black race. But neither one nor the other seems to have any influence on the shape of the hair.

We can only leave the problem in this interesting stage. Is there any legend pointing towards a former Caucasian invasion in the remote past? If not, we can only say that for some, at present unexplained reason, the Australian aborigine differs from all other coloured races in the shape of his hair.

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