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SOME PLANT FOODS OF THE QUEENSLAND ABORIGINE

by

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Stan began his association with Queensland as keeper of the collection of the University of Queensland, Geology Department.

Ever at the beginning of things, he was one of the foundation members of the Anthropological Society of Victoria prior to coming to Queensland. He was followed with his becoming a foundation member of The Australian Institute of Aboriginal Studies, and the Anthropological Society of Queensland. He is also a member of the Prehistoric Society and on his retirement he became an associate member of the Queensland Museum. He is also a member of the Honorary Wardens Service with the Archaeology Branch.

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Some Plant Foods of the Queensland Aborigine

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The Manual of Nutrition (1945) commences by pointing out that foods in different countries or in different districts in one country can differ widely.

Foods are defined as being either solid or liquid and which, when swallowed, can:

a. furnish the body with materials for the production of heat, work or other forms of energy.

b. provide material to enable growth, repair or reproduction to proceed; or

c. supply regulatory substances for the production of energy, or growth, repair or reproduction processes.

Also, whatever the diet it must contain sufficient of the appropriate foods to fill nutritional needs if the individual's health is not to suffer.

A publication 'Diet and Nutrition' (1945, Clements, p. 79) points out that tropical Australia has certain food problems, that here human body needs differ from those in cold climates and that available foods in each place are not the same.

Warm climates need less heat producing material, e.g. fat, and appetite can be satisfied by an increased carbohydrate intake and bulky watery fruits and vegetables.

Queensland had many aboriginal tribes living in wilderness conditions; however, despite this, the cruelty of the climate and sparsity of food at times, these nomadic people did secure adequate nutrition from roots, seeds, bulbs and a variety of animal life.

The food is generally eaten almost raw, the fire generally only burnt off fur or feathers and no other part of the beast was thrown away; thus we had hunger satisfied and the craving for certain rarer qualities of food also met.

Professor D.A. Herbert in a lecture "Our Vegetable Foods" (1959) stated that the "Ancestral blackfellows" did not become agriculturists on arrival for they could bring nothing from the north that would grow here and they found no indigenous plants from which to evolve even a crude type of agriculture. He also pointed out there were no herd forming animals that could be domesticated and thus their talents were developed into "the eternal quest for the next meal" for the "Australian countryside contributed nothing towards the collection of food plants except of course a place for them to grow".

G.N. Hyam (1939) points out that the history of the rise and fall of any branch of the human race is largely a history of the abundance, variety or deficiency of food supplies. He suggests all nomadic peoples have an inborn gift for living off the country and that they have the true hunting instincts whether in "the pursuit of animals or in the search for vegetable foods".
A quote, "They must of necessity be great experimenters and adventurers in gastronomy, and there must have been many unknown martyrs to the science of dietetics during the developments of their culinary arts. These men (or women) should surely be numbered among the world's heroes!"

There is a surprising range both in animal and vegetable food, and it is pointed out the aborigine had no fastidious or aesthetic inhibitions; if the food tasted well and there were no ill effects all was well, but there must have been numerous empirical experiments in cooking and preparation to arrive at methods of getting rid of deleterious principles.

A detailed study of aboriginal foodstuffs seems to indicate a choice was made when food was abundant and here I feel a sympathy with the early inhabitants - why eat only those things that will do you good when you can have, on occasion, items that do some good and taste a lot better.

The almost complete absence of the deficiency diseases Ricketts, Scurvy, Beriberi and of malnutrition generally would suggest that a satisfactory selection of food stuffs guided by taste and appetite was made, and that only in times of scarcity was food eaten somewhat haphazardly.

A further quote from Mr. Hyam, "The list of aboriginal foods (so far as we know them) with the plentitude of animal proteins and fats suggest that a completely balanced range of food was available, replete with all the alphabetical vitamins that are so much in the public eye today".

It can be shown that Burke and Wills starved on Nardoo whilst King survived (Hyam, 1939A). This was because Burke and Wills apparently did not realise that Nardoo in itself was not a complete food and did not eat the animal food almost certainly given to them as it was given to King.

It is suggested that the various grass seeds, some of the Danthonias and Nardoo sporocarps were favoured because of their relatively high starch content; the seeds of Acacias, Crotalaria, Dianthus, Castanospermum and other legumes were the source of vegetable protein; the pith of tree ferns, rushes, palms and cycads, etc. and certain roots may be thought of as some equivalent to our carrots, parsnips, potatoes, etc.

Mr. Hyam (1939A) also suggests the aboriginal diet was better balanced than our own and that the impressions recorded by the early explorers 'were based on a repugnance to, and the strangeness of, the food they saw used'.

Trial and error trials for possible new foods has a background in McLaren (1926, p.91) who tells of new plants appearing in a plantation, their examination by the natives, speculation as to their possible edible quality and finally the tentative and cautious experiments to this end.

Meggitt (1964) has much to say on the variety, differences and amount of vegetable food collected in both coastal and inland regions, and estimates this could be in the order of 70-80% of the total food supplies.
Among coastal tribes roots and nuts were staples and were supplemented by many fruits, whereas inland the staple was seeds and the supplement Solanum fruits.

Some work has been done on the composition of aboriginal food plants, and Dadswell (1934) gives a survey to that time.

Specimens were identified, a fresh sample was weighed, then partially dried, packed and transported to the laboratory. It was noted that the leafy parts of Portulaca oleracea and Calandrinia balonnensis were very difficult to dry and because of this property were valued by the aborigines as a source of moisture during dry periods.

The fuel composition of each plant was calculated on the basis of its composition allowing 4.1 calories per gram for protein and carbohydrates and 9.3 calories per gram for fat.

Some common cultivated foods were selected for comparison and the native plants showed a lower moisture content an expected finding as those were of central Australian origin.

The fibre content of Solanum fruits, Lepidium and Portulaca leaves, stems and fruits was greater than the cultivated comparisons but other native foods had less fibre on a dry basis.

Ether-soluble material in native plants was less in some cases, crude protein (calculated as total nitrogen X 6.25) was slightly greater in Solanum fruit and roots but less in other foods.

Carbohydrate obtained by difference was low in Solanum fruit and Portulaca roots and total ash was higher in the native foods with sand and silica making an appreciable amount of the total.

Individual elements gave some surprises, thus: calcium and magnesium were mostly greater in the native plants while an Ipomoea tuber showed a particularly low potassium content and phosphorous was even lower still and ranged from 0.1 to 0.5 of the amount in similar cultivated foods. Iron was more plentiful in the native foods but copper and manganese were similar to the amounts for cultivated plants. Calculated on dry weight the fuel values of the two foods were similar but using fresh material the native specimens were far greater.

That the aborigine did tend to conserve the food plants is pointed out by Meggitt (1964, p.32) and Mrs. Duncan-Kemp (1934 p.100) with references to some root portions and some seeding plants being left to ensure regrowth, and noting that at times a bar was placed on certain plants should they show signs of becoming scarce.

A.H. Campbell (1965) in a comprehensive paper dealing with food production as against food collection, give many similar examples and even suggest yam replanting to be an indigenous invention.

Palmer (1884A p.93) shows that the aborigines had considerable knowledge of indigenous plants and their uses, their periods of flowering and fruiting and also that they had names for many plants they did not use.
A valuable plant/plant or plant/animal food association is given by Farwell (1962, p.59) who tells how food seasons were recognised when away from the production area; thus oysters could be gathered when the oyster flower bloomed, the bream would be running when the bream flower was out and when the kurrajongs flowered then it was time to look for yams on jungle beaches.

It has been stated the aborigines did not store foods in good seasons against bad times, and this is certainly true over long periods, but there were some short term storages made. Dr. H.E. Young (1939) in his story of the Bunya tree tells how the nuts were buried at times in the wet mud of a waterhole being collected some weeks later, by which time many would be mouldy and sprouting, but even so they were still considered edible.

Palmer (1884, p.310) records the storage of roots and seeds for future use, and Mrs. Duncan-Kemp (1934, p.56) tells of "Pattis" a cooked product of grass seeds being placed in out of the way spots for emergencies of travel and there is one record of use some nine months afterwards.

Some of the early writers were impressed by the actual quantity of food resources, thus Palmerston (1887) records walking over the land ankle deep in nuts and seeing circular frames of bark about the size of a cartwheel piled with "Kunkee Nuts" and again (1883, Dec. 27) telling of "baskets loaded with red berries" and "a great quantity of their rough meal". He notes also (1888, p. 244) "Cozzon" berries being seen "in aboriginal camps in hundredweights".

T.L. Bancroft (1893, p.216) referring to Nardoo states: "In a day one could gather about one hundredweight of the dried roots with involucres attached, from which perhaps 40 pounds of involucres could be picked; ten pounds might be easily enough obtained daily by one person, which amount would be sufficient for a whole camp of blacks".

Meston (1897) writing of the Batavia River area tells of flour made from a cycad nut, and states: "There is enough of it on the Batavia and Ducie to produce flour in scores of tons", and again (1897, No. VI) when on the Embly River tells of "the quantity and size of the great climber called Entada scandens better known as the Match Box Bean" and records the beans as being used for food "after being broken up......".

So we have food in quantity and variety but what about it in species numbers.

Thozet (1868) prepared a collection of native foods for the Intercolonial Exhibition 1866-7 and a later exhibition in Paris. He listed 47 species with the names checked by Baron von Meuller. In the Official Record to the Intercolonial Exhibition of Australia, Melbourne 1866-7 and within a section 'Notes on Vegetable Products' (Mueller) is a somewhat similar list but arranged differently and with more information relating to preparation.

Roth (1901, Sect.9) lists some 240 plants and considers these to comprise a fair proportion of the edible plants used by North Queensland aborigines.
Flecker, Stephens & Stephens (1948) list 272 species but note some as only used during famine, and finally Golson (1971) in an appendix "Species list of the Food Plants for Arnhem Land, Cape York and central Australia" notes 277 species. A check here shows some earlier records missing, so I feel sure it would be possible to list 300 species and still not list all plants so used.

Many plant foods could be eaten raw but there were some that required considerable preparation and there were some prepared mixtures. Some tribes did heat up some concoctions by dropping hot stones or clay balls into the containers, but generally the use of hot coals or ashes, an earth oven or open fire roasting were the means employed in food preparation. When the white man showed them how, "Cooking in Water" as told by McLaren (1926, p.78) became the established thing and there were many tribal feasts solely to exploit some newly discovered dish.

Looking now at some of the actual food items: Macgillivray (1862, Vol.2 p. 26) states that "a grey slimy paste" called Biyu is the principal support food of the Cape York and Muralug people in the wet season. Made from the sprouts of a mangrove (Candelia?) which are first baked and steamed by being piled on heated stones and covered with bark, wet leaves and sand, they are then beaten between two stones and the pulp then scraped out. This seems to have been a food eaten from sheer necessity and at times in order to make it more palatable large quantities of a large seed previously well soaked in water overnight or small pieces of a wild yam (Dioscorea bulbifera) previously well steeped to remove the bitter taste are added.

Byerley (1867, p.68) records that a "mixture of mangrove roots and berries pounded up into a pulp" was the food given to Jardine's two sons. He also records that the travellers ate it.

Meston (1897, No. VI) notes that the flour prepared from the "Influorescence of a Macrozamia" had "exactly the smell and cooking and eating properties of arrowroot". He notes the Batavia and Ducie blacks cook it in a hole in the ground whilst it really should be boiled and eaten like arrowroot, and that if at all stale, it has a very offensive smell.

Water lily roots are roasted and Meston (1897) reports they taste like filberts and are highly nutritious. The seeds too are used when ripe, being pounded on stones, baked into small cakes or roasted.

Nardoo, shown by Bancroft (1893, p.215) to be the involucres of the fern Marsilea drumondii A. Braun, but at one time thought to be seed of Sesbania aculeata Pers, is only used as a food adjunct.

The "involucres" are pounded between two stones being fed a few at a time from the left hand by "separating abducting the little finger".

The meal is mixed with water, kneaded to a dough and baked in the ashes.

The fruits and pseudo-bulbs of orchids were commonly used and Hedley (1888, pp.12-13) referring to Cymbidium canaliculatum R. Br. states they will support life even if eaten raw. They are known to white people as "Native Arrowroot" and to the aborigine as "Dampy-ampy".
The tubers of Geodorum pictum Lindley ("yeenga" in Gladstone, "vine" in Rockhampton) were used as food, as too were Caledenia, Diuris, Thelymitra, Microtis, Eriochilus, Acianthus, Dipodium, Glossodia, Lyperanthus, Prasophlum, and Pterostylis in Victoria (Lawler & Slaytor, 1970) and we know that many of the early records to small yams should read orchid tubers. It would seem likely the Queensland aborigine would have the same use for these plants.

Cycad nuts needed careful treatment before they became food and the natives were well aware of this as Turner (1893, p.159) records. He tells how when he seemed to indicate he would eat a "beautiful looking fruit!" the black ran up to him crying out "Baal that fellow" and telling him he would soon die if he ate it. To make them edible the kernels are soaked for at least six days and the paste like material is baked in ashes. An analysis of the Burrawang nut gave: water 48.4 percent, fat 0.68 percent, albuminoids 11.5 percent, starch 28.3 percent, sugar 3.78 percent and cellulose 6.5 percent.

Baron von Mueller writing in the "Chemist and Druggist" (Melbourne) for 1883 reflects on the curious fact that the native people apparently never made use of the "copious starch" that can be washed out of the "commingled stems of any cycadeous plants".

Blechnum serrulatum Rich, a common fern of Bribie Island and elsewhere, in swamp habitat was perhaps the most important vegetable food of southern Queensland. Known as "Bungwall" or "Tong-wun", T.L. Bancroft (1895) records that the whole rhizome is eaten and that it is dug out with a sharpened stick, dried in the sun for a short time, roasted and then bruised to become ready to eat with fish, crabs or oysters.

"Coohoy" nuts as written of by the Palmerston (1887, July 12, 1886) were confined to the elevated plateaux and inland some 20-30 miles from the coast and were the product of a large tree often 100 feet high before "shooting a branch". The perfectly round nut about six inches in circumference has a thin shell and a green outer coating which is discarded before use. It occurs in countless numbers, can be gathered all the year round, has "no evil properties" and a simple roasting prepares it for food, or it may be crushed to a coffee coloured meal which can be "cooked into excellent cakes".

A similar nut called "Kunkee" (Palmerston, July 23) has a deadly poison principle which can only be removed through "process of much fire and water".

Damboori (Palmerston, Jan. 20) also are nuts with a poison principle and must be eaten with caution. Preparation is by being divested of fruit and shell then placing in a basin shaped oven of stones and covered over with a layer of green ferns, a second similar layer is added and the whole covered with a thick top layer of fern heaped over with sand. A large fire oven is placed on top of this again and the nuts are steamed for 10-12 hours.

Johnny cakes made of meal from crushed "Too-moo" nuts are noted (p.243). The small black plum like fruit is heaped into a hollow rock into which water is poured and the fruit is tramped off. The nut is divested of its shell, crushed between stones and the resultant meal is placed between two frond like leaves and toasted on the coals.

Roth (1898) records the Bloomfield River aboriginals using the nut Joon-da (Pygeum turnerianum Bail), in season from January to March but only when quite fresh and with the husk over the shell.

Preparation is by pounding the whole thing up, sifting through a palm tree dilly bag then being damped, kneaded into cakes, wrapped in Wild Ginger leaves and baked in ashes.
The Moreton Bay Chestnut (Castanospermum australe A. Cunn.) is noted as not being at all relished and as being one of the worst foods to prepare, requiring baking in a stone oven, pounding and sifting, and stirring around with water in a bark trough to wash out the deleterious principles.

The Match Box Bean (Entada scandens) is always available but is only eaten as a last resort. Preparation is first by baking in ashes, then by being cracked up and placed in a dilly bag in running water overnight.

The Bunya was certainly the best nut and H.E. Young (1939) tells well the story of the feasts. They were eaten raw or cooked and were sometimes ground up to a meal.

Yams were a common food source, one such Wo-ki (Dioscorea sativa Linn.) from creek banks and the edge of the scrub was the main wet season diet article. For food it is well washed, all adventitious roots removed, baked in a stone oven for four hours, mashed up in a grass dilly bag and strained into a bark trough; water is added and it is stirred about until only fibres and husks remain in the dilly bag. More water is added to the trough, the mess well mixed and let stand until the water is clear; this is poured off, fresh water is added and the whole process repeated 7-8 times or until the taste principles wash out. A hand washbasin sized and shaped hole is dug in sandy soil and lined with clean sand, and into this the semi-liquid mess is poured, and when all water has drained off, the mass is ready for eating and this must be on the day of preparation as fermentation quickly takes place (Roth, 1898).

Mjoberg (1925?) tells of a similar process using two yams (D. sativa and D. rotundata) to produce "Karal" and recorded as similar in taste and appearance to potato puree.

Both bulbs and berry of an Amorphophallus from along the edges of the scrubs are eaten after baking but only in times of scarcity; bulbs of Microstemma tuberosum R. Br. are eaten both raw and roasted; those of Typhonium brownii are roasted and pounded before use. The tuber of Tacca pinnatifida Forst. is baked in hot ashes, mashed up, rolled up in ginger leaves and again baked before eating (Roth, 1898).

For salad plants there were the tender leaf stalks, buds and piths of a sago palm (Goyal), the leaf stalks and buds of the Black Palm (Drymophlorus normanbyi F. Muell.), the butts of the young leaves in the centre of grass trees (Xanthorrhoea spp.) the young shoots of the Lawyer cane (Calamus caryotoides Mart) and wild ginger (Roth, 1898).

Mrs. Duncan Kemp (1934, p.29) tells of wild spinach, red pig weed, mungaroo, par-a-keel-ya, the red fruits of Jilleroo and dark green scurvy grass, all eaten raw. Daley (1931) lists the fruits of quandong, nitre-brush (Nitraria billardieri), Ficus, Capparis, Sambucus, Solanum and geebung and the berries of Epacris spp., native currant, raspberry and cranberry and, too, the fleshy pedicles of the native cherry or Sallart.

Irving (1957) lists many additional items, including the roots of Hibiscus heterophyllus, Sterculia trichosiphon, the rush Typha muelleri (Yinbun), Erythrina Spp. and the rhizome of Bowenia spectabilis as being eaten raw.
Roots, rootstocks, tubers and underground stems which are roasted before eating include those of Boerhavia diffusa, Dolichos biflorus, Eriosema chinense, Vigna lutea, V. vexillata, Aneilema siliculosum, Tribulus solandri, Trichosanthes palmata, Acacia crassicarpia, Cissus clematidea, C. opaca, C. trifolia, Portulaca australis, P. napiformis, Psoralia badocana, Scirpus littoralis, Atylosia reticulata, Vitis acetosa, Hardenbergia retusa, Cerepegia cumingiana, Microstemma tuberosum, etc. etc.

Others again needed pounding, peeling and/or a long washing process (e.g. Alocasia macrorrhiza or Cunjevoi) before becoming fit to eat.

Meals as such except perhaps at evening were not taken at any definite time, and breakfast was only possible if there was something left over from the night before, (Roth, 1901).

Food preparation in general consisted of washing, grinding, pounding, grating and straining, and for this the kitchen utensils were a small millstone and its top stone, in some parts the specialised Morah and Moogi combination (Woolston & Colliver, 1972), a pounder, hammer stone or stick, and again in some places the specialised Nut stone and hammer.

For straining, the colander equivalent, were dilly bags of different mesh or bunch of panicum grass and for a grater a piece of rough bark. The baking board was a sheet of bark and be it known that white folk used this same material to the extent that one favoured locality for obtaining it now has the place name Baking Board. There would be a variety of dishes made of bark or wood or even large shells and some rounded stones or clay balls for heating the contents of the containers at times.

A fire place and the aboriginal form of bush oven, very simple but very effective too were needed; however, many of the above items would be useless without the all-important digging stick, a simple sharpened stick but used with great skill.

One final item: Clay eating is a common habit among aboriginal tribes in general and perhaps Mr. Hyam (1939) tells us why. Referring to the Queensland habit of eating Kopai and Kaolin he suggests this is allied to the modern practice of prescribing colloidal clays, kaolins and precipitated chalk taken internally for relief to damaged stomach tissue.

Perhaps the aboriginal clay intake was an antidote to the effects of indigestion and coarse food. We know that before being used the clay was cleared of all grit and the organic matter removed by roasting.

So we end our story. No longer do our black friends collect and prepare their native foods to any degree, and it is certain we only know a little of what they knew relating to the food values of our native plants. This surely is a lost opportunity.

REFERENCES


TURNER, F., 1893. The Zamia Palm (Macrozamia miguelii, F. & M.) and its relation to the disease known as ricketts in cattle. Agric. Gazette of N.S.W. 4 (3) 158-161.
