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PLANTS, INCLUDING FUNGI, POISONOUS OR OTHERWISE INJURIOUS TO MAN IN AUSTRALIA.

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It has seemed of interest and value to bring together the various references to injuries from plants recorded in Australia, more especially since the sources of information are often not easily available to the medical man. Moreover, in some instances, as for example, certain forms of dermatitis due to handling various plants, the cause is very apt to be overlooked if the physician is unaware of the occurrence of previous cases attributable to such a source. Doubtless the present list can be extensively added to, and those who possess notes of further cases should record them. Due acknowledgement must be made of the valuable data, more especially in connection with plants causing dermatitis, collected by Mr. J. H. Maiden, Director of the Botanical Gardens, Sydney, to which frequent reference is made in the text. The noxious plants are grouped broadly according to the effects said to be produced.

PLANTS POISONOUS ON INGESTION.

Euphorbiaceæ. — *Euphorbia Drummondii*, Boiss.: Mr. C. T. Musson (*Proc. Linn. Soc., N.S.W., 2nd Series, Vol. 4, 1889, p. 389*) has recorded the following interesting fact, which suggests that the seeds of this widely-extended prostrate herb may possess cathartic properties. He says: "During a residence in the north-western district of New South Wales (Narromi), 1887-1888, I noticed a peculiar effect produced on human beings, under the following circumstances. Whenever our household partook of pigeon pie, it invariably followed that after some 12 or 15 hours we all suffered under a severe attack of diarrhoea, accompanied by acute griping pains in the bowels, lasting some three or four hours and then passing away. This effect had so constantly and invariably followed the presence of pigeon pies on our table, that I naturally connected the one with the other, and cast about for an explanation. We had noticed in cleaning the birds that their crops were filled with small rugose seeds, which only recently I have found to be those of *Euphorbia Drummondii*, Boiss., which grows in profusion with us, covering a considerable area of ground in that portion of the garden devoted to grape vines, the pigeons feeding regularly on the *Euphorbia* fruits. The plant is stated to be injurious to stock, and we know that many members of the spurge family possess purgative and emetic properties, whilst others are powerful irritants. The question then naturally arises, whether some of these peculiar properties have taken effect upon us in the indirect manner here set forth, thus to bring about the results indicated. All the ingredients of our last two pies (the last one partaken of out of curiosity as a

further test) were most carefully examined, and I have come to the conclusion that the cause of the mischief is indirectly attributable to *Euphorbia Drummondii*.

Ricinus communis (Castor Oil Plant): This is a common, introduced plant in Australia, growing in many waste places. In 1864 (*Aust. Med. Journ., Vol. 9, p. 158*) reference is made to a newspaper report of death from eating six of the seeds, the symptoms manifested being purging and vomiting, with great prostration. T. W. Shepherd (*N.S.W. Medical Gazette, Vol. II., 1872, p. 268*) gives an amusing account of the cathartic and emetic properties of the seeds of some castor oil plants eaten—with the skins on—in Sydney by an adult. Dr. Officer (*A.M.G., July, 1895, p. 283*) reports a case of a woman who ate several castor oil seeds; five of the husks were afterwards found in the motions. There was vomiting, with epigastric pain and collapse. Later, there were dilated pupils and an absence of pulse at the wrist, with slight convulsive twitchings of the eye and corners of the mouth, followed by purging. She was semi-comatose 18 hours after ingestion; recovery then followed, and she was sitting up, though weak, on the second day. In the discussion on this paper, Dr. Springthorpe instanced cases of poisoning by the poison ivy and the berries of the common pepper tree. Dr. W. Atkinson Wood (*Australian Medical Journal, April, 1911*) records two instances of cases of poisoning from the seeds of this plant, involving ten persons. The symptoms were chiefly vomiting and purging, in one instance recurring two days later. Sore throats were early noticed. Two of the patients were in an alarming condition. It is pointed out that the poison seems to be in the hard part of the seed, the expressed oil being free from toxic effects other than its purgative properties.

Anacardiaceæ. — *Anacardium occidentale* (Cashew Nut): Several of these trees exist in Queensland, on the Herbert River and around Cardwell. In an article by Howard Newport, Instructor in Tropical Agriculture at Cairns, in the *Queensland Agricultural Journal* (March, 1912, p. 185), he says, "There are many varieties, with varying properties and uses, some of them poisonous; but two are edible, a red and a yellow variety. It is a fairly well-known specimen of the yellow-fruited variety that was brought to me for identification, with the story that children were very fond of the acid properties of the fruit, but that one child in particular, and other people at various times, had experienced a painful burning of the lips and tongue on biting the seed or seed-case."

Leguminosæ. — *Castanospermum australe*, Cann and Tras. The poisonous properties of this plant, the Moreton Bay chestnut, are well known as regards animals. Banfield, in his "Confessions of a Beachcomber," makes a reference to its effects on human beings. He states that the poisonous pods contain saponin, which may be got rid of by running water, and that horses, cattle and pigs have died from eating them.

Human beings suffer much pain even from a small quantity.

Rosaceæ.—*Prunus amygdalus*, var. *amara* (Bitter Almond). In 1879 (*Aust. Med. Journ.*, Vol. I, N.S., p. 412) a newspaper reference is given to the death of a child, who died in three hours, with pain, convulsions and coma, after eating a dozen bitter almonds fresh from the tree.

Myrtaceæ.—*Rhodomyrtus macrocarpa*: The following reference occurred in the *A.M.G.*, October, 1894, p. 360, to the effects of the berries of this plant, which are said to have caused sudden loss of sight. It states that, "Cases of sudden loss of sight have been reported on several occasions from Cairns, supposed to be due to people having eaten a peculiar berry, known as fingers, or native loquat, which occurs plentifully in the district. A sample of berries was sent to Mr. F. M. Bailey, Colonial Botanist, who found they were badly infested with a fungus, *Glomerium*; no traces of poison exist in the plant. It is *Rhodomyrtus macrocarpa*, one of the myrtle family." Banfield, in his "Confessions of a Beachcomber," p. 23, states that it possesses an evil reputation. He says that some assert that it is subject to a disease, and that, if eaten when so affected, paralysis of the optic nerve and blindness, and even death, may result; but in spite of this the blacks eat the fruit unrestrictedly and declare it even good, as do some white people, eating it raw and preserved, without fear and without untoward effects.

Eucalyptus Oil Poisoning: European cases of poisoning from overdoses of this essentially Australian product will be found recorded in the *British Medical Journal* for May 29th, 1909, p. 1297, and February 18th, 1911, p. 359. The latter paper, by Dr. Foggie, gives a summary of the literature on the subject. Vomiting, collapse, and other toxic symptoms are noted. Fatal cases have been recorded. One such case in Australia was reported by Dr. Alfred Neale, of New Norfolk, Tasmania (*Australasian Medical Gazette*, April, 1893, p. 115), the oil being that obtained from the blue gum, *Eucalyptus globulus*. The patient was a boy of 10 years, who took a dose of eucalyptus oil as a preventive against a cold. In a few minutes he was found gasping for breath, and vomited heavily. The vomiting relieved him for a while, but in about an hour the struggle for air came on again, and increased until death, 15 hours after the ingestion of the oil, of which a little over half an ounce had been taken. When Dr. Neale saw him, he was at the point of death. At the post mortem examination there were no corrosive marks in the mouth or pharynx. The stomach was distended with gas, and contained a small quantity of thick, yellow, odourless fluid. There seemed to be no particular features about the post mortem examination. Dr. Neale mentions that he had heard of several other authenticated cases where serious symptoms had followed a dose of one drachm of eucalyptus oil, in all instances with catching of the breath, but the cases had been followed by recovery. The editor of the *Gazette*, in a footnote, states that he knew of no recorded cases of poisoning by the drug, except one reported in March of that year by Dr. Croker, of Geelong, in which a dose of an ounce was said to have accelerated death. A case of poisoning with "extract of eucalyptus"

made at Sandhurst, Victoria, was recorded in 1885 by Dr. F. J. Owen (*A.M.J.*, p. 394). A child of 17 months apparently swallowed a few drops remaining at the bottom of a bottle. The chief symptoms were drowsiness, contracted pupils, insensible conjunctivæ and collapse. The patient recovered.

Umbelliferae.—*Conium maculatum*, Hemlock: Near Launceston, a few months ago, two children ate some "carrot fern," which proved to be hemlock. The boy of three died; the girl, aged five, recovered. Mr. Maiden tells me he knows of other instances of poisoning from this plant in Australia. The plant is, of course, not a native.

Cucurbitaceæ.—Wild Melons: The following case of poisoning after eating wild melons is recorded by Dr. J. F. Soutar, from Lake Cudgellico, New South Wales (*A.M.G.*, June, 1890, p. 215). The symptoms manifested somewhat suggest the action of an alkaloid. "A child, 3 years old, at 11 a.m. was noticed by the parents to be feverish and unwell, and complained of being sick. She continued thus for some hours, and once or twice vomited quantities of watery fluid. At 4 p.m. the child had a fit, which, according to the mother, resembled that in poisoned dogs, the back being arched and the eyes turned, with foam at the mouth. On arrival, the child was comatose; tongue pushed between the teeth, the eyes fixed, and with pin-hole pupils, quite insensible to light; pulse 140, temperature 98; the face pale and the breathing laboured. The child was placed in a warm bath, and vomited a large quantity of fluid, containing skins of several melons. After this the pupils suddenly regained their normal size, and the child cried. The stomach was fully evacuated, and the warm bath administered, but as soon as the child was laid down, the pupils returned to their pin-hole condition. After calomel and brandy, profuse perspiration ensued, after which the patient slept for four or five hours, waking perfectly well. Next morning the only remaining sign was a discolouration of the sclerotics with bile." (Note by Editor, *Australasian Medical Gazette*.—The Chief Inspector of Stock in Brisbane received information early in May that there had been considerable mortality amongst horses at Mount Keira Station, Diamantina River, in consequence of having eaten wild melons).

Convolvulaceæ.—Giant Convolvulus: The *Australasian Medical Gazette* (Feb., 1894, p. 120) contains a letter from the Rev. Dr. Hunter Findlay, of Ravenswood, North Queensland, detailing the case of a girl, aged 4 years, who was poisoned by this plant. The symptoms were like those of belladonna poisoning, the patient showing dilated pupils. The symptoms yielded to the remedies applicable to belladonna poisoning. The plant in that district is used for covering bush humpies.

Solanaceæ.—*Duranta plumieri*: Dr. J. H. Wheeler, of Brisbane (*A.M.G.*, August, 1895, p. 338) records a fatal case of poisoning, presumably by the berries of this plant. The patient was a boy, 4 years and 9 months old. At 3.30 p.m. he felt tired and sleepy, and the mother noticed that the face was flushed, the pupils dilated, and the lips and eyelids swollen. He then went to sleep, and at 6.30 was moaning and tossing. At 7 p.m. he passed a large, offen-

sive, sticky motion, with a smell like the water in which cabbages have been boiled; the breath was similarly offensive. The lips were slightly swollen and cracked, the pharynx and tonsils red, but not swollen. The lids were slightly swollen, the conjunctivæ injected and the pupils widely dilated and insensitive to light. The patient was semi-conscious, with a temperature of 105.4deg. F., and an irregular pulse of about 200. The trunk was dry and pungently hot. Brandy was administered. At 5 a.m. tonic spasms appeared, with marked retraction of the head and slight opisthotonos. The jaws were not tightly clenched, and the facial muscles were not affected. At 7 a.m. he passed another motion and vomited an inky-looking liquid material, the fluid part of which was colourless, and the solid portion like coffee grounds. Convulsions became more frequent, and the patient died about 10.45 a.m. Rigor mortis appeared in a few minutes, and soon passed off. There was deep post-mortem discolouration. A number of partly digested berries of *Duranta plumieri* were found in the motion. It is not known when these had been eaten. Probably a large number had been ingested. No post mortem examination was allowed. The untoward features were the absence of delirium, the high temperature, the weak and rapid pulse, and the purely tonic convulsions.

Anthocercis littorea, Labill.: *The Producers' Gazette and Settlers' Record*, W.A. (Vol. V., New Issue, May, 1898, p. 397), in an article by the late Dr. Alexander Morrison on "Native Poison Plants," contains a reference to a case of poisoning from this plant, which was under the care of Dr. Moffit, at Greenough. Mention is also made to Mr. Crawford having recently brought a specimen of it from the Vasse, where children had been made seriously ill by eating it. Dr. Moffit has recorded his case in the *Aust. Med. Gaz.* (April, 1899, p. 155) and in the *Inter-col. Med. Journ.* (Vol. 3, 1898, p. 407). The patient was a boy of 5 years. He had suddenly fallen down and exhibited symptoms of poisoning, resembling those of belladonna. There were wild muttering delirium, dryness of the throat and mouth, dilated pupils, aimless throwing about of the arms and legs, and incoherent talking. He had been chewing some of the plant in question. Pot. brom. and chloral were given, and then tr. opii. The patient finally slept for six hours, and then recovered. Another child of 6 years, who chewed a leaf and spat it out, showed also undoubted symptoms of poisoning. The plant was identified by Mr. E. Bickford and Mr. Lindley Corven, the latter of whom stated that reports of its deleterious effects upon children had come from various parts of the colony.

Datura Stramonium, L. (Thorn Apple): This introduced plant is common in waste places in Australia. Dr. Henry Early (*Aust. Med. Journ.*, Vol. II., 1857, p. 241) describes seven cases of poisoning amongst children in the Immigrants' Home, Melbourne. The symptoms and signs were dilated pupils, a bright scarlet efflorescence, rapid pulse, much thirst, great excitement, maniacal paroxysms, startings, muttering and occasional screaming, and catching at imaginary objects. Half a drachm of the seeds, which were fortunately immature, were obtained from the motions in one case. All recovered. Dr. P. T.

Thane, of Yass, N.S.W., in 1899 (*A.M.G.*, p. 54) records three cases, two fatal. One was a girl of five at Yass. There were flushed face and rapid breathing, and later dilated pupils, loss of conjunctival reflex, tonic spasms of the muscles, a temperature of 104.4deg., and drowsiness without delirium. The seeds were vomited, passed in the motions, and found post-mortem in the stomach. Another case had occurred at Wagga three years before. The temperature rose to 104.6deg., and there were coma, clonic spasms, delirium, dilated pupils, and death in 15 hours. A previous case at Yass, under Drs. English and Doogan, had had delirium, dilated pupils and a dry skin, but no rise of temperature. This one recovered.

Atropa belladonna: In 1857 (*A.M.J.*, p. 244) Dr. Lovell Byass recorded the cases of two children of 7 and 3½, who swallowed a number of purple berries. The pupils became dilated, and there were tremors. The younger also exhibited violent convulsions, a scarlet skin and screeching.

Cycadeæ.—In the eastern and western States, species of *Macrozamia* have long been known to cause a condition in cattle called "rickets," but apparently really some form of paresis. Though in man such chronic poisoning naturally does not occur, cases of acute effects from eating the untreated nuts have from time to time occurred and a member of this family is responsible for the first cases of plant poisoning recorded for Australia. The nuts can be eaten after maceration and other treatment, which removes the poisonous principle, which is said to be oxalic acid (Mr. Wallas), but their means of preparation, not being known to Captain Cook's people, several of them suffered from the results of eating the raw nuts when at the Endeavour River in 1770, as the following extract from the "Journal of the Rt. Hon. Sir Joseph Banks" (edited by Sir Joseph D. Hooker, p. 299) shows: "Palms here are of three different sorts. . . The third (*Cycas media*, R. Br.) generally bears a plentiful crop of nuts, about the size of a large chestnut, and rounder. By the hulls of these, which we found plentifully near the Indian fires, we were assured that these people ate them, and some of our people tried to do the same, but were deterred from a second experiment by a hearty fit of vomiting. The hogs, however, which were still shorter of provisions than we were, ate them heartily, and we considered their constitutions stronger than ours, until after about a week they were all taken extremely ill of indigestion; two died, and the rest were saved with difficulty." La Perouse's seamen, in 1788, also suffered from this inexperience, as Phillip's first despatch to Lord Sydney (Barton's Hist. of N.S.W., Vol. I., p. 286) shows, when he mentions "the kernels of a large fruit, that is not unlike a pineapple, but which, when eaten by the French seamen, occasioned violent retchings." Finders ("A Voyage to Terra Australis," Vol. I., pp. 80-81, 1814) also mentions poisoning from these fruits, when at Lucky Bay, Recherché's Archipelago, on January 9th, 1802, thus: "A party of the gentlemen were upon the top, eating a fruit not much unlike green walnuts in external appearance, and invited me to partake; but, having breakfasted, and not much liking their flavour, I did not taste them. Mr. Thistle and some others, who had eaten liberal-

ly, were taken ill, and remained unwell all the day afterward. The plant which produced these nuts was a species of *zamia* (*Zamia spiralis* of Brown's *Prodr. Flor. Nov. Holl.*, 1., 348); a class of plants nearly allied to the third kind of palm found by Captain Cook on the East Coast, the fruit of which produced the same deleterious effects on board the *Endeavour*."* On Sir Geo. Grey's expedition from Gantheaume Bay, during the year 1839, several of the men ate some nuts which were not sufficiently dry; they were seized with fits of vomiting, accompanied by vertigo and other distressing symptoms. The symptoms gradually abated during the night, and in the morning, though weak, they were able to continue the march (Sir George Grey's "Journals of Two Expeditions of Discovery in North-west and Western Australia," Vol. 2, 1841, p. 81). In an article by Dr. George Bennett, F.L.S., on "*Macrozamia spiralis*, or the Burrawang of New South Wales" (*N.S.W. Med. Gazette*, Vol. II., No. 1, p. 1), reference is made to a reported case of poisoning by "fern nuts." A little girl, 3½ years of age, ate one of the nuts. She was suddenly taken ill—violent vomiting, stupor, and a yellowish appearance of the eyes being the most notable symptoms. The state of stupor continued for some hours, when she slowly recovered. Dr. Hartigan, who attended the case, said the pulse was 120, but there was no dilatation of the pupil of the eye, and he expressed the opinion that the illness of the child was not due to eating the nuts. Dr. Bennett adds that the nuts are eaten by the blacks, but produce poisonous symptoms unless they are steeped for eight days in water, and washed, or they are roasted, then bruised and steeped in water for three days. The seed in the fresh state, cut up and given to fowls, is poisonous to them. The editor states that he and a lady suffered vomiting and depression through each eating one of these nuts, when 14 years of age. Later, in the same journal (p. 57), the results of a chemical examination are given by Mr. J. S. Norrie. The dry seeds were pulped, and starch and gluten were detected; from a soluble portion which was acid, and which gave calcium oxalate on adding lime water, binoxalate of potash was isolated, and microscopic amounts of a possible alkaloid crystallising in prisms.

Poisonous Nut.—A nut producing "violent sickness" was found by Stuart, near Central Mount Stuart, in Central Australia, in 1860. (Howitt, "Hist. of Discov. in Austr.," Vol. II., p. 308).

Gramineæ.—*Lolium*, probably *L. perenne*: The presence of ground seeds of *Lolium temulentum* in bread is well known as a cause of nervous symptoms, amongst which are tremors of the limbs, on ingestion. The following instance of poisoning from drake seeds, "a Canadian weed," is recorded in the *Aust. Med. Journ* (Vol. 9, 1864, p. 281). A family at Castlemaine, owing to the high price of bread, mixed pollard with the flour. The pollard, unknown to them, had been made from drake seeds. They were seized with violent shakings, all were seriously ill, and two of the children appeared to be at death's door, but all eventually recovered. On reference to Mr. J. H. Maiden, Director of the Botanic Gardens, Sydney, he has informed me that *L. perenne* is sometimes known as "drake."

FUNGI.

Agaricineæ.—*Amanita* (?): The poisonous European Fly Agaric (*Amanita muscaria*) is recorded for Victoria, but, owing to its scarlet cap, is not likely to be eaten by mistake. Several other species of *Amanita*, probably including poisonous kinds, are, however, known for Australia, and some of these may at times be mistaken for mushrooms. The persistent white gills and volva or sheath at the base of the stem should, however, prevent mistakes. Dr. F. M. Johnston (*Inter Med. Journ.*, 1907, p. 399) records a fatal case of "mushroom" poisoning. A boy, aged 6, had, together with four other members of the family, eaten a number of mushrooms gathered in Albert Park, Melbourne. These mushrooms were gathered between 10 and 11 one morning, and eaten at 9 o'clock the next. An hour and a half afterwards this boy began vomiting, which continued off and on during the day. Early the next morning his relatives were roused by his noisy breathing. On examining the child, they found him in a dying state. Dr. Johnson, when called in shortly afterwards, found him lying on his back, breathing noisily, but not stertorously, with a sort of Cheyne-Stoke's type. He was comatose, the eyes were open, the pupils contracted, and the corneal conjunctiva insensitive. There was no squint. The face was pallid and dusky; the lips blackish. Clonic convulsions occurred in the limbs; the arms were strongly adducted, the forearm supinated, the wrist flexed, and the lower limbs rigidly extended. The patella reflex was obtained in the interval between convulsions. The thorax was full of noisy fluid rales. The abdomen was flat and soft, the extremities cool, but not cold. There was no rigidity, nor was there any opisthotonos. Treatment was by a rectal injection of brandy and hot water, the injection of atropine and the inhalation of nitrite of amyl, which proved ineffective. Dr. Johnson attributed death to paralysis of the respiratory centre and heart. Since other members of the family were unaffected, and this child had previously eaten mushrooms without experiencing any undue symptoms, he came to the conclusion that the patient had eaten the one poisonous fungus in the dish, probably an *Amanita*. He alternatively suggested that an *Agaricus campestris*, the common mushroom, growing on some foul medium and absorbing poison therefrom, or being itself attacked by some poisonous parasite (Hutchinson), might be the cause. The mushrooms had not been kept long enough to undergo any fermentative process aiding in the production of some ptomaine. During 1914, two instances were reported in the daily press of poisoning from fungi, believed, at the time, to be the common mushroom. At Pinkenba, near Brisbane, seven men were taken ill after having steak and "mushrooms" for breakfast. Stomach pumps were used at the hospital, and all were well enough to leave in the afternoon. In May, two men lost their lives near Moora, on the Midland Railway, in Western Australia, through mistaking some poisonous agaric for mushrooms. Their ages were 38 and 27. About 1 p.m., these two and a mate ate the "mushrooms." Shortly after, all three complained of pains in the stomach. During the night one died, and the second about 9.30 next morning. The third recovered.

(To be continued).

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PLANTS, INCLUDING FUNGI, POISONOUS OR OTHERWISE INJURIOUS TO MAN IN AUSTRALIA.

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(Continued from Page 544.)

PLANTS POSSESSING ACRID JUICES, WHICH, WHEN APPLIED, INJURE THE SKIN AND MUCOUS MEMBRANE.

Euphorbiaceae.—*Excaccaria agallocha* Linn.: This plant is described in Moore and Betche's "Handbook of the Flora of N.S.W.," p. 79, as a small, glabrous, very poisonous tree. The following reference as to its action is of interest: The "milky mangrove," "river poison tree," or "blind-your-eyes" (*Excaccaria agallocha*), is stated by Banfield, in his "Confessions of a Beachcomber," to exude a sap when injured, which is very volatile. "There is an acrid, burning sensation in the throat, inflamed eyes and headache, while a single drop falling into the eyes will, it is believed, cause loss of sight." The blacks use the juice for certain ulcerous and chronic diseases.

Excaccaria parvifolia, Muell. and Arg.: In addition to *E. agallocha*, Mr. Maiden quotes this plant as yielding an acrid juice, which is more or less volatile, and which if it gets into the eyes will produce temporary loss of sight and other local irritation.

Excaccaria sp. (Guttapercha or Rubber Tree, "Blind-your-Eye"): Spencer and Gillen in "Across Australia" (vol. ii., p. 458) state that the milky juice, if it reaches the conjunctiva, causes severe inflammation, and even temporary blindness.

Aroidae.—*Colocasia macrorrhiza*: This plant produces an acrid juice. The following instance of fatal injuries received from a plant growing on the Bellinger River is recorded in the *Australasian Medical Gazette* (January, 1892, p. 113). In November, 1891, an inquest was held on a child of five years, the verdict being that death occurred from suffocation after eating portion of the leaf. When seen by the mother it was suffering great pain in the mouth, throat, and stomach, and appeared to be choking, and died before the arrival of a medical man. It is mentioned that the cunjevoy grows on the alluvial flats of the Bellinger River and other northern rivers. It belongs to the arum family, to which taro (*Colocasia esculenta*) belongs, the rhizome of which after careful washing and cooking is used as food in the South Sea Islands. To the same order belongs *Dffenbachia sequina* (the "dumb cane" of the West Indies), chewing the leaf of which causes such inflammation that the patient cannot speak. All parts of the cunjevoy have an acrid juice, especially the rhizome. The rhizome contains starch, which is used by the blacks after washing and cooking. The leaf juice of the cunjevoy is said to be an antidote for the irritation caused by the common or tree-nettle.

PLANTS PRODUCING VESICULATION WHEN APPLIED TO THE SKIN.

Rutaceae.—*Phebalium argenteum*, F.v.M. Mr. Maiden refers to this as the Western Australian blister plant, and states that Dr. Alexander Morrison, Perth (*Chemists and Druggists Journal*, 8th July, 1899 p. 63), has shown that it blisters the human skin if handled. Dr. Morrison himself ("Notes on the Natural Hist., etc., of W.A.," by Malcolm Fraser, 1903, p. 187), says that Baron von Mueller called it the "blister plant" on account of the blistering property of its juice. I have had a personal experience near Perth of a species of *Phebalium*, probably the one in question. The plant grows on the edges of the swamps, and has a pleasing fresh yellowish-green appearance, growing to a shrub of four or five feet in height. Residents had informed me of its blistering capabilities, and to put these to the test, early one morning, while the dew was still on the grass, I energetically rubbed a dew-laden leaf on to the back of my hand. At the time no irritation was induced and absolutely no sign of inflammation was evident. I therefore treated the information with much scepticism. Twenty-four hours later, however, on looking at the rubbed area I noticed an erythematous blush confined to the spot where the leaf was applied. Watching this with interest I gradually saw the formation of a vesicle, which in forty-eight hours was covering the whole area, being about the size of a threepenny piece. Eventually a large blister formed with turbid contents, which was then opened, and the wound dressed. Finally, when the wound was healed, a white atrophic-looking area was left at the site, surrounded by an irregular-looking ring of dark brown pigment. This persisted, though gradually fading, for several years, and even about five years later the area could still be recognised as being somewhat paler than the surrounding skin, and having a few small areas of melanin pigment dotted over it. Doubtless the irritative properties in this plant are due to one of the essential oils so well-known as constituents of this order of plants. The most interesting feature is the absence of an immediate reaction, the slow appearance of this (24 to 48 hours), and the resultant large blisters. The possibility suggests itself that the plant may be of service in medicine as a local irritant with persistent qualities, applicable as a remedy for chronic joint affections, etc. I may state that on several other occasions, apparently with the same plant, I tried to produce similar results, but failed.

Proteaceae.—*Grevillea*, sp.: The following reference is from Howitt's "History of Exploration in Australia" (vol. 2, p. 33), in connection with Leichhardt's explorations when he was on the MacArthur River, Northern Australia, on the 21st September, 1845. Howitt states that the explorers discovered here, too, that the fruit of the drooping *Grevillea* had a great power of raising blisters, and also rendering

the skin where it touched black as nitrate of silver.

PLANTS PRODUCING URTICARIA, WHEN APPLIED TO THE SKIN.

The chief plants in Australia producing this condition belong to the order *Urticaceae*. *U. dioica*, a common English member, has been introduced into Australia, and is widely distributed in settled parts. *U. incisa*, an indigenous species, is found in abundance in parts, often in sandy, barren country in the interior. The leaves of both these plants give rise to a well-marked and painful urticaria when brought in smart contact with the hand.

Laportea gigas, *photiniphylla* and *moroides* (the Giant Nettle Trees): These conspicuous trees are common in the dense tropical and sub-tropical scrubs along the eastern coasts of Australia. Their stinging properties are well-known and carefully avoided. Animals are said to have occasionally lost their lives from accidental contact with the leaves. S. W. Jackson, in an article entitled "In the Barron River Valley, North Queensland" (*The Emu*, vol. 8, pt. 5, June, 1909, p. 252), thus describes being injured by them near Atherton in N. Queensland. "I got badly stung on the face by the giant or large-leaved stinging tree, when reaching out to one of the cat-bird's nests; the stings were so severe that my throat and eyes were badly affected, and not even the application of the supposed antidote—the juice of the shrub-lily or cunjevoy—would lessen the smarting pain. Next day the severe scalding sting still remained."

Mr. Maiden refers in the *Agricultural Gazette of N.S.W.* (December, 1909), to the well-known irritation caused by the skin of the common edible fig, when eaten by people without peeling it. He mentions a case in which a lady at North Sydney could never gather her crop of figs, much less handle them, when making pickled figs, fig jam, etc., without contracting irritation of the hands.

PLANTS PRODUCING DERMATITIS.

Meliaceae.—*Dysoxylon muelleri* Benth (Red Bean): In an excellent paper on "Some Plants which Cause Inflammation or Irritation of the Skin," Mr. J. H. Maiden (*Agricultural Gazette of N.S.W.*, December, 1909), makes the following statement: "Some cabinet-makers report that after working at it for 'four or five days they begin to suffer from a virulent form of influenza, accompanied by violent fits of vomiting and bleeding at the nose, while if they cut themselves in handling the timber, blood poisoning almost inevitably ensues. Remarkably enough, the more seasoned the wood is, the worse it becomes.'" Mr. Maiden suggests that the language is exaggerated, and that as far as he could glean the wood, and particularly the saw-dust, is exceedingly irritating to some people, and that it has indeed produced a severe eczema, and also irritation of the mucous membrane.

Anacardiaceae.—*Rhus radicans*, L., "Poison, Climbing or Three-leaved Ivy," "Poison Oak," "Poison Creeper": Mr. Maiden, in his paper in the *Agricultural Gazette of N.S.W.*, 1909, gives the following per-

sonal experience of this plant. "In the middle of January, 1903, while performing my ordinary duties in the Botanic Gardens, Sydney, I had occasion to go near our plant of Poison Ivy in the Gardens; I was not aware that I had touched it, and I do not think I did do so. It grows on a stone wall, out of reach of visitors. It occasionally requires pruning, and the pruner generally protects himself with leather gloves. In the course of years we have found some men immune to its effects, while others are sensitive. In fact, we cannot say, except as the result of experience, whether a man will be affected by it at all. Men are always warned about the plant and the pruning is a voluntary act. A point I wish to emphasise is that I believe it is necessary to touch this plant to produce evil effects; at certain seasons the poisonous principle is exhaled from the plant. The next morning my face was so swollen that I could not open my eyes. The itching torture I suffered I shall never forget as long as I live." He also mentions a Tasmanian case as follows: "Notes on a recent case of poisoning caused by the exhalation of *Rhus radicans* (*toxicodendron*) at the Botanical Gardens, Hobart" (F. Abbott in *Proc. Roy. Soc., Tas.*, 1886, 182). Six men employed in the garden were injured to a more or less serious extent. They were reducing the size of the plant on the 22nd September. Maiden quotes a paper by Dr. Franz Pfaff in the *Kew Bulletin* of 1903, as regards the poisonous principle of this plant. Dr. Pfaff showed that the active principle was an oil which he called toxicodendrol. Mr. Maiden calls attention to the danger of this plant when grown by amateurs in gardens, and issues a solemn warning as to its danger. He points out that the plant is often confused with Virginia Creeper.

Dr. A. Norman McArthur, of Melbourne (*Interc. Medical Journal*, June, 1904, p. 16), describes three cases of dermatitis from *Rhus toxicodendron*. In one of the cases, a woman, the patient had not actually handled the plant.

Professor E. C. Stirling, of Adelaide (*Aust. Medical Gazette*, April 19th, 1913), describes a case of dermatitis from this plant, which had come under his notice. His under-gardener had been working in proximity to some of the roots of the Poison Ivy, and happened to handle them in order to throw them aside. The broken ends exuded a milky juice, which turned black on exposure. At dinner time he washed his hands well in Condy's fluid but on the following morning a severe dermatitis developed on the left hand. Later, the eruption extended to the left leg. There was redness and swelling, the forming bullæ being fully the size of a sixpence, some with slightly sanguineous contents. A week later the forearm up to the elbow joint was red, inflamed and greatly swollen, and covered with bullæ. The right thigh was also affected now as well as part of the right arm, the pain and itching being very severe. A week later the eruption was disappearing, although now on the right forearm there were a number of serous bullæ. Ten days later the condition had nearly cleared up. An excellent photograph is given of the affected arms covered with large bullæ. Thirteen years previously the same

man had been affected with a precisely similar eruption caused by handling the leaves of an allied sumach (*Rhus vernicifera*) from which he gradually recovered in the course of about a month. Ever since this first attack his skin had been exceedingly susceptible to various irritants to which previously it was not sensitive. Even ordinary ivy, if touched, would produce a slight vesicular erythema, and recently whilst paddling and being exposed for a short time to the sun, he had suffered from a violent dermatitis with blistering. This reference to increased sensitiveness to irritants of other kinds following a dermatitis produced by one particular species of plant is of great interest. The occurrence suggests analogies with anaphylaxis and serum disease.

Leguminosae.—*Castanospermum australe*, A. Cunn. (The Black Bean): Mr. Maiden says that this well-known furniture timber of N.S.W. and Queensland has, like the Red Bean (*D. muelleri*) been accused of injuriously affecting the health of workmen.

Myrtaceae.—*Eucalyptus maculata*, Hook (The Spotted Gum): Mr. Maiden states that in parts of Queensland, timber-getters and sawyers who have handled this gum are sometimes affected with a rash called "spotted gum rash."

On making enquiries, he ascertained that most persons had never heard of it, though one, Mr. Vogeles, Mount Douglas, Paterson, N.S.W., reported as follows: "Spotted gum rash prevails here. Some are affected more than others. One of my neighbours, who worked with me in the bush for years, felt this influence if only working beside a spotted gum; to work one was out of the question. If persisting in doing so he would itch, and afterwards break out in pimples. Every occasion he got affected more; at length he had to sell his selection on account of it."

Eucalyptus hemiphloia, F.v.M. (White or Grey Gum): Mr. Maiden has heard on one occasion of this timber causing a rash in a man, or at least of a rash being attributed to this timber.

Onagraraceae.—*Oenothera biennis*, L. (The "Evening Primrose"): This is an introduced plant in many parts of Australia. Mr. Maiden states that Dr E. G. Seligmann, of London, wrote to him that this plant produces eczema in human beings.

Araliaceae.—*Hedera helix*, Linn. (The Common "Ivy"): Mr. Maiden quotes a statement from Mr. H. Selkirk, of Sydney, saying that the common wall ivy may irritate the skins of some people. He speaks of a man at Mosman who pruned his ivy the previous year, and for weeks afterwards was in the doctor's hands, and his hands and arms were in a very bad state. He also says that one of his own brothers suffered in a mild way after similar work, and that he had himself had a somewhat similar experience.

Dr. W. J. Munro, of Sydney (*Aust. Med. Gaz.*, Jan. 20, 1900, p. 25) records an interesting case of a dermatitis with papules and vesicles spreading from the foot, where common ivy leaves soaked in vinegar had been applied to relieve corns. Several later attacks followed handling wet ivy leaves for decorative

purposes, the patient having been rendered evidently more susceptible.

Compositae.—*Cassinia aculeata*, R. Br. (sometimes known as "Dogwood"): Mr. Maiden quotes Dr. A. W. Finch Noyes, in charge of the Skin Department of the Melbourne and Alfred Hospitals, for a paper in the *Chemist and Druggist of Australasia*, August, 1899, p. 240, which was read before the Medical Society of Victoria, the blame being credited to this plant. This paper was also published in the *Intercol. Med. Journal*, July, 1899, p. 359. Mr. Maiden summarises as follows: "Details are given of seven cases, several of which suffered only when the dogwood was in flower, and the patient had come in contact with it by brushing through the scrub, and other ways. The symptoms indicate that minute particles of some kind, such as pollen from the flowers or irritating particles from the bark, get between the clothing and the skin, and where there are loose folds or clothing in contact with parts of the skin inflammation is often produced. The eruption is often scaly, with great irritation, and a feeling described, in some cases, as if fire were running through the part. In one case, a resident of Gippsland was driven from the district twelve years ago, and six months ago returned. He had a second attack of the eruption, which was relieved when he left the district. He determined to live down his susceptibility, and went back, but returned a few weeks ago, with an eruption similar to that in previous attacks." He also quotes a letter from Mr. C. Collyer, of Brunswick, Victoria, written in December, 1904, Mr. Collyer says that he was at one time a resident of Walhalla, and a sufferer from what was locally known as "mountain itch." He attributes the irritation to animaculae from diseased or blighted specimens. The blight referred to blackens the whole shrub. He mentions that not only himself, but others have been affected similarly on passing near or through the blighted specimens, especially in mountainous Gippsland. He also mentions that in the Otway Forest they passed through a dense undergrowth of healthy young *Cassinia*, and that although they were in bloom and passing from bloom into seed he and his son had suffered no inconvenience.

Pyrethrum (Chrysanthemum) carthesium, Sm. ("Fever Few"): Mr. Maiden states that the Rev. H. E. Thomson, of Murrumburrah, N.S.W., could never tolerate this plant, which always produced an eczematous swelling on his face. He was fond of gardening, and proximity to this plant always distressed him. He tried to resist the effects, but finally had to remove all such plants from his garden.

Erigeron linifolius, DC.: Mr. Maiden mentions that Dr. Doyle, of Newcastle, sent him specimens of this plant, known as "Cobblers' Pegs," which had induced inflammation of the skin in a patient of his at Port Stephens.

Centipeda: Mr. Maiden states that in N.S.W. we have two common sneezewoods, natives of low-lying land, *Centipeda (Myriogyne) orbicularis* and *C. minuta*, which, when dry, cause irritation of the mucous mem-

branches. He had not heard of them producing serious illness.

Olearea roseoides, Benth. (a native shrub-daisy) Mr. Maiden (*Agric. Gaz. of N.S.W.*, July, 1912, p. 604), mentions that this plant "is coated with a sticky resinous substance, and since it is a useless plant, it is often hand-pulled, but the men (or, at least, some of them) doing the work suffer from a kind of skin-poisoning (dermatitis) as the result. Leather gauntlets should be used by men so affected."

Olearea decurrens, Benth.: Mr. J. H. Maiden (*Agricultural Gazette of N.S.W.*, May, 1914, p. 416), reports this plant in the Dubbo district, citing the case of a man who apparently suffered from dermatitis (which he called eczema), through handling the shrub. The plant is covered with a sticky substance.

Humeca elegans: Mr. J. H. Maiden (*Agric. Gaz. of N.S.W.*, Oct., 1913, p. 916), refers to this plant, which is a native of New South Wales and Victoria, and is cultivated in English glass houses. He mentions correspondence which had appeared in the *Gardeners' Chronicle*, alleging that the foliage causes symptoms of eczema, and that inflammation of the eyes followed standing on the leeward side of the clump when there was a breeze blowing. He states that in *The Garden*, of 13th December, 1902, mention is made by a correspondent that forty years previously he had been attacked by an inflammation of the eyes, which lasted several days, after having potted some of this plant, and another correspondent wrote stating that he had suffered for some weeks with an inflamed eye, caused simply by drawing his hand over the leaves and afterwards rubbing the eye. This caused him much pain—almost as bad as if stung by a wasp. Mr. J. H. Maiden (*Agric. Gaz. of N.S.W.*, March, 1914, p. 236), mentions having received a letter from the principal of a well-known horticultural college in Victoria, who stated that he had handled this plant for years, both in the bush and in gardens, and had never previously suffered injurious effects until in November, 1913, when he accidentally touched his face with his hands after handling several plants. In two or three hours his whole face was red and swollen and very painful. He applied a soothing ointment, but the pain continued all night, and in the morning his eyes were nearly closed.

Verbenaceae.—*Tectona grandis* (Indian Teak): I have been informed of a case in Sydney where a dermatitis, with "nettle-rash" and much irritation lasting several days, occurs repeatedly in a carpenter when he handles in any way Indian Teak, or comes in contact with its sawdust. The hands and forearms and occasionally the scrotum are affected. Other employees occasionally suffer similarly, but are not so sensitive.

OTHER INJURIES ATTRIBUTABLE TO PLANTS.

Conostylis sp.—In the *A.M.G.* (vol. xxviii., 1909, p. 304) I have recorded an instance of death from impaction of the dry flower of one of these plants in the larynx of a child.

Graminac.—The awns of grasses belonging to the genera *Aristida* and *Stipa* are well-known in parts of Australia on account of their piercing

the skin of sheep, and producing much disfigurement and irritation, thus lessening materially the market value of the carcasses. The effect of these grass seeds on man must be frequently irritating, and Howitt in "History of Exploration in Australia" (vol. ii., p. 308), refers to the experience of Frederick Walker's expedition in search of Burke and Wills in 1862, when in the neighbourhood of the Burdekin. Walker observed a "very bad description of grass" growing where the slate occurred. He says the pain caused by a wound from this grass seed was exactly like that of the bite of a soldier ant

THE ABDOMINAL INCISION IN TREATMENT OF OVARIAN CYSTOMA.

(Read before the South Australian Branch of the British Medical Association)

By J. A. G. Hamilton, B.A., M.B., Hon. Gynaecologist Adelaide Hospital.

In discussing Dr. Lendon's paper at a late meeting on peritoneal implantation infection, following the removal of an ovarian cyst, I made a few remarks on the importance of removing these neoplasms through a large incision without reduction, but time did not allow me to emphasise how essential it is to discard the once classical two or three-inch incision in removing these cysts. To a certain extent, the ultimate results obtained by the removal of ovarian cysts are not as satisfactory as they ought to be. It is difficult to understand why our increased knowledge of the pathology of these neoplasms has not led us to perform more complete and radical operations than we are doing at the present day. A recent writer in the *Journal of Surgery and Gynaecology*, says, "The operative technique of ovariectomy, certain phases of which are considered modern, differs little from that employed by the father of the operation, Ephraim McDowell, over 100 years ago, nor does the technique differ materially, except in aseptic principles, from that utilised shortly after by his followers."

The methods inherited from these pathfinders are still employed, and the authors of our most recent text books on gynaecology, with slight modifications, advise and use the methods practised by our forefathers. It is unusual in the present day to come in contact with cysts so enormous in size that they cannot be removed through a large abdominal incision, without puncture or without tapping. Puncture or tapping, no doubt, was necessary in the older days, when it was not uncommon to meet with cysts of an inordinate size; but these enormous cysts are seldom seen nowadays. I have looked up some of the most modern text books on gynaecology, and find that with almost one accord the advice is given that ovarian cysts should be removed through an incision two or three inches long, thus exposing the tumour, and then to withdraw its contents either through a trocar, or by puncturing the cyst wall with a scalpel; then the cyst is removed through the small incision as the growth empties itself. Of course, in the present day, the small incision, with evacuation of its contents, is not used in dermoid cysts or where the tumour is papillary in character. It is generally believed that one can