# IPHA Newsletter #9

## April 2020

https://indigenousplantsforhealth.com/

**Editorial.** Andrew Pengelly, IPHA President.

Greetings members and readers.

To say that we live in interesting times would be something of an understatement right now. My intention was for this edition of the newsletter to be a mostly COVID19—free zone, though in retrospect it may now become the COVID edition. Given the cancellation of our key event, the Autumn Field Day, the inability to plan future field events for 2020, and the cancellation of all other group activities that we are all involved in, the pandemic has a hold on us all. However it remains to be seen whether the pandemic is as destructive as were the summer bushfires in this country. The loss of forests and wildlife is nothing short of catastrophic in New South Wales and Victoria, with major damage also inflicted in other Australian states.

In this edition some of our members who live on the edge of the Wollemi and Yengo National Parks, share their experiences battling with the summer-long fires and the aftermath, when the rains arrived. One of these properties belong to Pat and Bryant Collins, the very site where the autumn field day was to be held. Attendees would have had the opportunity to see the extent to which the bush is regenerating in areas that were burned or badly affected by the drought and extreme early summer heat.

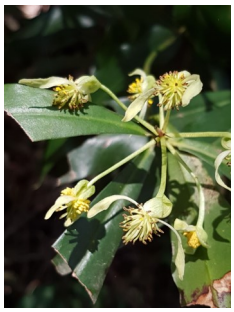
The media has moved on from the bushfires, and the climate change issue is on the backburner. Fortunately our weather has settled down to something like normal, just when we were wondering whether we would ever see "normal" weather patterns again. It may not last, but we can be thankful that we weren't hit with the bushfires and pandemic at the same time. Can we imagine the survivors and refugees from those south coast and Gippsland infernos practicing social distancing on the beaches?

Apart from the gripping personal accounts of the bushfires, this edition also feature some details of the bushfire aftermath (which is still being assessed) and some initiatives by Government and non-Government organizations in beginning the task of recovery after the bushfires. Some of the key events that were to have taken place this autumn but have been cancelled are still highlighted, so they remain in our consciousness for whenever they are rescheduled .

I am grateful to Kat Bennett for taking the lead on the health-promoting plant for this edition, and for her other fine contributions.

*Tasmannia insipida*

Mt. Glorious, Qld.



Like most organizations we need to re-think our planned activities, which usually involve outside gatherings of some sort. We certainly hope that our spring will be pandemic-free and that we can hold the delayed field day along with our AGM, however we can't begin to put dates on future events until the dust settles.

The circumstances do lend themselves to forging ahead with some of our pet projects. The membership survey has given us a lead on what activities to prioritize, and some of these can be initiated sitting at home. For those who are interested in helping to create education cards or write up plant profiles, Kat has set up a members section on the website that you can send contributions to. My particular interest is in creating field guides of medicinal/edible/health-promoting plants for different regions. If you have an interest there, please contact me and I can help to get things started.

Burdekin plums. Harvested at Moore Park Beach, Q.

At the time of writing I am spending up to 5 days/week at the workplace, which for me is the Queensland Herbarium. This is a large building now operating with skeleton staff, and I am one of the people responsible for imaging the collection of plant specimens (a million or so in total) so that you can all access them from the Internet. Apparently this is a considered a high priority project, and one that can be conducted at what I refer to as professional distancing.

Thanks to those who wrote me following the message cancelling the field day with such kind sentiments. One member remarked that we now have more time at home to write articles for the newsletter—we are eagerly waiting!

**Indigenous Plants for Health (IPHA)** is a not-for-profit incorporated association, formed with the objectives of raising awareness, sourcing grants and sponsorship for sustainable production of indigenous plant-based products.

# Health-promoting plant of the season

By Kathleen Bennett and Andrew Pengelly

## *Euphorbia hirta*

Family: Euphorbiaceae

Common names: Queensland asthma weed, Pill-bearing spurge
Synonyms: *Chamaesyce hirta* (L.), *Euphorbia. pilulifera* Linn.

## Introduction and Identification

While examining the weeds in the backyard at Middle Park, we identified one of the more prolific ones as the Queensland or Australian asthma plant, a garden spurge (*Euphorbia hirta, Euphorbiaceae*). This is a small, spreading plant with flower clusters that appear like little flattened balls, which may be the source of another common name, pill-bearing spurge. The word spurge, from the Medieval, to purge, is associated with other *Euphorbia* species used as purgatives. Considered a pantropical weed, *E. hirta* has likely to have been naturalized in Australia for hundreds of years.

This small, low, spreading plant may grow up to 40cm (16 inches) and has tiny greenish-white flowers in little clusters in the leaf axils. The opposite leaves are serrated with random hairs on the underside or edge and may develop purplish coloration when grown in direct sunlight. Like many Euphorbias, when a stem is broken, the plant exudes a white, slightly bitter latex.

Australian asthma weed (*E. hirta*) is easily confused with *Euphorbia opthalmica (*Florida hammock sandmat) (see image). However, *E. hirta* has flowers in the leaf axils along the stem whereas *E. opthalmica* flowers are more rounded and terminal on short stalks (See image). Where *E. opthalmica* may have slightly reddish stems *E. hirta* often has darker purplish leaves, especially in bright sunlight. *E. hyssopifolia*, another common garden weed, has a bright red stem, small, hyssop-shaped leaves and terminal flowers on visibly longer stalks.

Some older sources use *E. pilulifera*, another synonym of *E. hirta* (Tavera, 1901). For additional identification and herbarium images see the PlantNet, New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/).

**Some Common Names for *E. hirta* around the world:**

Chinese: fei yang tsao; English: asthma herb, garden spurge, hairy spurge, red euphorbia; French: euphorbe poilue (hairy euphorbia); Hawaii, USA: koko kahiki; India: Baridhudi, chittakuti, dhuli; Malaysia: ara tanah, gelang susu; Mauritius: Jean Roberts; Mayan: xanab-mucuy; Philippines: tawa-tawa, gatas-gatas; Portguese: erva-de-Santa-Luzia; Spanish: golodrina, hierba de la golondrina (herb of the swallow). When writers from other countries refer to an English name for *E. hirta,* they call it the Australian asthma weed or plant.

**Please note**: In Australia, *Parietaria judaica* (Urticaceae) (sticky weed, pellitory of the wall) is also called asthma weed not because it is used to treat asthma but because the pollen irritates the eyes and respiratory system (*Gardening Australia*, Episode 40).

## Colonial use

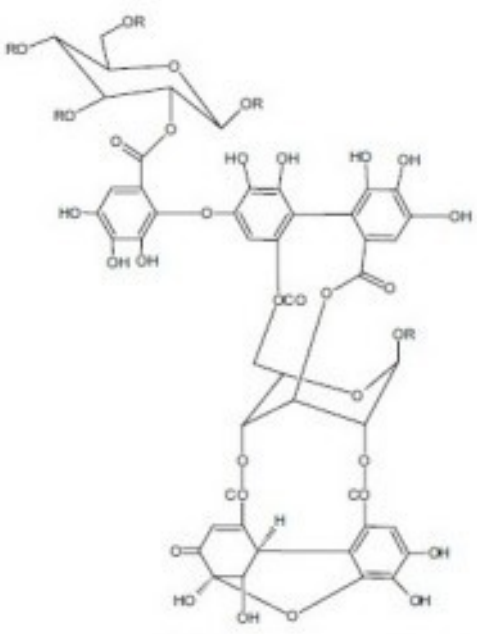
There are few reports of asthma weed having been used by Indigenous Australians except for the top end of the Northern Territory (Aboriginal Communities, 1988), however it was one of the plants used by the Colonial settlers. In 1880 Dr. Carr-Boyd from Townsville first recommended its use as a decoction for asthma and other respiratory disorders (Hagger, 1979), and presumably the asthma weed name then came into being. In his classic 1889 text "Useful Native Plants of Australia" Joseph Maiden also credits Dr. Carr-Boyd, in addition he also notes that medicinal uses of *E. hirta* are reported from outside of Australia (Maiden, 1889). In one example, the French author Dr. A. Marsset, recommended the herb for attacks of dyspnoea caused by spasmodic asthma, emphysema or chronic bronchitis .

## Phytochemistry

*E. hirta* is a rich source of polyphenols, including the flavonoids quercitin, myricitin, kaempferol and the tannins euphorbins A-D, geraniin, terchebin, quinic acid ester, gallic acid and ellagic acid (Singh and Kumar, 2013; Kumar et al., 2010 ).

*E. hirta* specimen from the backyard in Brisbane

*Euphorbia hyssopifolia (left) E. opthmalmica* (centre) and *E. hirta* (right) Note the arrangement of the flowers. https://weeds.brisbane.qld.gov.au/weeds/hyssopleaf-sandmat



Euphorbin B. A high molecular weight tannin, one of the ant-diarrheal constituents of *E. hirta.* (Kumar, Malhotra & Kumar, 2010)

The main constituents associated with the respiratory support are thought to be choline and shikimic acid which effect smooth muscle tissue. Other constituents include: essential fatty acids, sterols (beta-sitosterol, campesterol, stigmasterol, euphorbol hexacozonate) triterpenoids (taraxerol, friedalin, campesterol), and amino acids (L-cystine, L-argenine, glycine, DL-serine, DL-methionine, DL-iso-leucine, L-tyrosine, DL tryptophan, alanine, phenyl-alanine, etc. (Wren, 1988; Chevalier, 1998; Awaad, 2017; Pretorius, 1994; Shih and Jong, 2012).

## Medicinal Actions and Uses

**Asthma and bronchitis**

Apart from Australia, traditional remedies using *E. hirta* for asthma and bronchial inflammation are reported from the Philippines, Nepal, Africa, India, Hawaii and China. In vitro and in vivo studies indicate that asthma weed is antibacterial, anti-asthmatic, expectorant, pectoral and bronchodilating (Wren, 1988; Kunwar, 2010; Chopra, 1994; Hargreaves, 1991). Asthma attacks are characterized by an increase in bronchiole constriction. Animal studies indicate that *E. hirta* extracts reduce the release of thee following bronchoconstrictors: prostaglandins-D2, P-12 and P- E2 (Hiermann and Bucar; 1994; Sundari et al., 2004). In India, Africa, Hawaii and the Philippines, *E. hirta* is taken primarily as a tea, but both water and methanol extracts were found effective int reducing lung inflammation and easing bronchiole constriction (Pretorius, 2008; Kunwar, 2010; Wren, 1988; Sundari et. al., 2004).

To quote Tavera (1901), who studied the medicinal plants of the Philippines:

" This decoction relieves the most obstinate asthma, as well as cough and bronchial irritation. It is necessary to use the entire plant. The decoction is usually given in the morning, fasting, in the middle of the afternoon and at bedtime. In very stubborn cases another dose may be given in the middle of the night. Frequently the relief is immediate and in some cases a litre of the decoction is enough to effect a cure. If the symptoms return, it is easy to abort them; they are less distressing and, according to the statements of patients, the medicine "gives them air."

Chevalier (1998) considered choline and shikimic acid to be the constituents associated with the bronchodilation effect of *E. hirta*, but Pretorius (2008) suggested the effect was due mainly to the triterpenoids. Tavera (1901) notes that the active principle seems to be soluble in water and dilute alcohol.

Asthma weed has been used in combination with other anti-asthma herbs such as gumplant (*Grindelia camporum*) (Pretorius, 2008) and lobelia (*Lobelia inflata*) but in the Philippines, the dried leaves are sometimes mixed with devil's trumpet (*Datura metel*, Solanaceae) and smoked to aid breathing (Chevalier, 1998, Ghosh et al. (2019). Hirt (2020) suggests smoking the dried herb for asthma along with drinking the tea.

To make a tea, a teaspoon of the dried and powdered herb is decocted for 20 minutes in simmering water. Praetorius (2008) found the dosage for a water infusion to be 120-130mg tid (3x daily) while for the fluid extract the dosage is suggested as 0.2-0.3ml tid. Tavera's (1901) formulation adds alcohol, using 30g. herb (dried in the shade), added to 1 ½ litres water, boil until one litre remains, cool and add 30 ml. rum or cognac. Dosage: 1 wineglassful 3x/day. Wren (1988) gives the dosage as 0.12-0.3 ml of liquid extract (BPC 1949).

**Antimicrobial actions**

Both water and methanol extracts of *E. hirta* have antibacterial activity.

*In vivo and in vitro* studies rats have shown that *E. hirta* was effective against *Staphylococcus aureus, Escherichia coli*, *Bacillus subtilis* and *Pseudomonas aeruginosa* but not against *Salmonelela typhi* (Ogbulie et al., 2017). While Singh and Kumar (2013) found the methanolic extracts of all parts (leaf, flower, root, fruit) were antibacterial against *E. coli*, they noted that the extracts were even more effective against *S. aureus, Pseuedomonas mirabilis* and *Candida albicans*. Of three Euphorbias common to Saudi Arabia, *E. hirta* was found to be the most potent against *Microsporum canis, Klebsellia pneumonia* and *Staphlococcus aureus* (Awaad et al., 2017). *P. aeruginosa* is associated with the formation of biofilms, in a study by Peruma and Mahmud (2013), the effectiveness of *E. hirta* against biofilms was attributed to the actions of terpenoids.

Sties are bacterial infections caused by *Staphylococcus* sp. Traditional uses apply the fresh sap directly on the sty, but only after washing and patting dry the herb. (Hirt, 2020; Steggerda, 1944).

**Antiviral**

*E. hirta* has been shown clinically to have significant antiviral and platelet increasing activities, which supports its traditional use against dengue fever (Dengue hemorrhagic fever), a viral illness spread by mosquitoes. Known locally in the Philippines as tawa tawa, the herb is taken as a tea and is available commercially for such purposes (Perera et al, (2018).



An ethnographic study of *E. hirta* found that the tea and herb were effective in reducing symptoms in all three stages of dengue fever (initial, febrile, recovery) (Guzman et al., 2016). Warts caused by HPV (human papilomavirus) infections, are traditionally treated by directly applying the fresh stem or root sap (Moshi et al., 2012; Kumar, et al., 2011; Vedavathy, 1997).

**Antimalarial**

Asthma weed contains three flavonol glycosides (afzelin, quercitin and myricitrin) known to inhibit *Plasmodium falciparum*, the protozoal parasites that causes malaria. One study, (Liu et al., 2007), showed that an methanolic extract of the aerial parts of *E. hirta* inhibited 90% of the growth of *P. falciparu*m.

**Wound healing**

In addition to general antibacterial, anti-inflammatory and antimicrobial actions, a methanolic extract of the dried powdered herb was found to stimulate fibroblasts and increase collagen (scar tissue) production which helps wounds close and contract more quickly (Upadhay, 2015; Tuhin et al., 2017). Among the Mayan natives of Yucatan, heated or burned leaves are placed directly on skin wounds, pimples and mosquito bites to reduce inflammation and speed healing (Steggerda, 1944). In the Northern Territory, Australia, *E. hirta* was applied directly to wounds and warts (Tavera, 1901; Aboriginal Communities, 1988; Devanesen, 2000).

*E. hirta* (cont.)

**Analgesic and Anti-anaphylactic**

In vivo studies demonstrate anti-anaphylactic effects for ethanolic extracts of *E. hirta* (Ghosh et al., 2019). In the Northern Territory liniment of *E. hirta* was used for muscular and joint pains (Devanesen, (2000).

**Gastrointestinal actions**

In the African countries of Senegal, Mali, D. R. Congo, Benin and Burundi, *E. hirta* is used to treat dysentery and diarrhea (Hirt, 2020). Three to four plants were decocted to produce a liquid used to control dysentery (Steggerda, 1944). Another recipe involves boiling 20-30g fresh herb (1 handful) or 15g dried in one litre of water. Decoct (simmer) for 15 minutes. Filter the liquid and drink 3x/day for eight days (Hirt 2020).

**Anti-venom**

Usually when an herb is claimed to be good against snakebite, flashes of the old snake-oil charlatans come to mind. But, *E. hirta* actually contains triterpenoids known to detoxify the venom of pit vipers (*Trimeresurus* sp.) (Samkumar, 2019). Gopi, et al, (2015) found that a methanolic extract of *E. hirta* was able to completely block the toxicity caused by the venom of the Indian cobra (*Naja naja)* in vitro as well as ex vivo.

**Toxicicology**

In an acute toxicity study of Swiss mice treated with water extracts of *E. hirta*, no adverse effects or weight loss was observed in the treated animals, in doses up to 10mg/kg body weight (Pingale, 2012). These results were confirmed by Ping et al. in rats using a methanolic extract, for doses of up to 5000mg/kg. (an extremely high dose), while in a sub-chronic study, no toxicological effects were observed over a period of 90 days (Ping et al., 2013).

Kumar (2010) found that *E. hirta* is not cytotoxic and Shih and Jong (2012) noted that *E. hirta* was cytoprotective for hepatocytes against drug toxicity.

Many Euphorbias contain toxic latex which are irritating to the skin. Always use caution when taking the leaves, stems and roots internally, making certain that you have the correct species and have processed it correctly. For example, the chemical constituents of *E. lathyrus* (caper spurge) is known to cause severe eye inflammation (McVeigh, 2018).

E. hirta should not be used during pregnancy. In higher doses it may cause nausea and vomiting (Skenderi, 2000).

**Growing, Harvesting and Preparations**

According to the website Anamed (Hirt, 2020), propagation is best by sowing seed on areas of dry, sandy soil in full sun. When harvesting always cut the plants rather than pulling them. The roots can regrow allowing for additional harvests and the continuation of the plants. Place your harvest on a white cloth rather than in a basket, to catch any seeds that might be loosened, these can be sown or shared.

An ordinary suburban Brisbane backyard yielded three Euphorbias: *E. hyssopifolia*, *E. hirta* and *E. opthalmoides.* Careful scrutiny of the Australian paddock or yard may result in the discovery of the asthma weed already growing there. Although *E. hirta* is targeted for weeding out by the Australian government, there was still at least one Australian website selling seeds.

For teas and extracts, the aerial parts of the plant are harvested when in flower during the summer and are dried for later use. For general open wounds and irritations, the leaves or crushed plant are heated or boiled, then applied warm. Only warts and sties were treated with an application of fresh latex.

**Summary**

It seems that in every country where *E. hirta* grows it has been used medicinally. Possessing antibacterial, antiviral and bronchodilating actions, it is a plant for our times. And while we should not be totally convinced about its anti-venom actions, it wouldn't hurt to carry some dried *Euphorbia hirta*, for the unlikely event of a snakebite.

**References**


Aboriginal Communities of the Northern Territory of Australia. 1988. *Traditional Bush Medicines: An Aboriginal Pharmacopoeia*. Greenhous Pubs., Vic.

Ankli, A., Sticher, O. and Heinrich, M. (1999). Medical Ethnobotany of the Yucatec Maya: Healers' Consensus as a Quantitative Criterion. *Economic Botany, 53* (2), 144-160.

Awaad, A. S., Alothman, M. R., Zain, Y. M., Zain, G. M., Alqasoumi, S. I., & Hassan, D. A. (2017). Comparative nutritional value and antimicrobial activities between three *Euphorbia* species growing in Saudi Arabia. *Saudi pharmaceutical journal: SPJ : the official publication of the Saudi Pharmaceutical Society*, *25*(8), 1226–1230. https://doi.org/10.1016/j.jsps.2017.09.007

Baslas, B.K. And Agarwal, R. (1980) Current Science, 49, 311

Chevalier (1998) *The Encyclopedia of Medicinal Plants.* Dorling Kindersley, London, United Kingdom.

Chopra, R.N., Chopra, I.C., Handa, K.L. and Kapur, L.D. (1994) *Indigenous Drugs of India*. Academic Publishers, Calcutta, India.

Devanesen, D. (2000) Traditional aboriginal medicine practice in the Northern Territory. *International Symposium of Traditional Medicine*, *September 11-13, Kobe Japan*. World Health Organization,.

Ernst, M. et al (2015) *Journal of ethnopharmacology*, 176, 90-101.

Evans, F.J. (1986) In: F.J. Evans (ed.) Naturally Occurring Phorbol Esters. CRC Press.

Gbekley, H. E., Katawa, G., Karou, S. D., Anani, S., Tchadjobo, T., Ameyapoh, Y., Batawila, K., & Simpore, J. (2016). Ethnobotanical study of plants used to treat asthma in the maritime regio of Togo. *African journal of traditional, complementary, and alternative medicines: AJTCAM*, *14*(1), 196–212.

Geethaa, S., Thavamany, P. J., Chiew, S. P., & Thong, O. M. (2013). Interference from ordinarily used solvents in the outcomes of Artemia salina lethality test. *Journal of advanced pharmaceutical technology & research*, *4*(4), 179–182. https://doi.org/10.4103/2231-4040.121411

Ghosh, P., Ghosh, C., Das, S., Das, C., Mandal, S. and Chatterjee, S. (2019) Botanical description.phytochemical constituents and pharmacplogical properties of Euphorbia hirta Linn: A review. *International Journal of Health Sciences and Research.,* 9(3), 273-286.

Gopi, K., Renu, K., Sannanaik Vishwanath, B. and Jayaraman, G. (2015) Protective effect of Euphorbia hirta and its components against snake venom induced lethality. *Journal of Ethnopharmacology*, 165, 180-190.

Guzman, G., Dacanay, A., Andaya, B. and Alejandro, G. (2016) Ethnopharmacological studies on the uses of Euphorbia hirta in the treatment of dengue in selected indigenous communities in Pangasinan (Philippines). *Journal of Intercultural Ethnopharmacology*, 5(3) 239-243.

Hagger, J. (1979) *Australian Colonial Medicine*. Rigby, Adelaide

Hargreaves, B.J. (1991) The Spurges of Botswana. *Botswana Notes and Records, 23*, 115-158.

Hiermann and Bucar (1994) Influence of some traditional medicinal plants of Senegal on prostaglandin biosynthesis. *Journal of Ethnopharmacology*, 42(2), 111-116.

Hirt, H.-M. (2020) Euphorbia hirta. *Anamed (Action for Natural Medicines)*. https://www.anamed-edition.com/en/euphorbia-hirta.html, accessed on March 27, 2020.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# Black stone flower lichen - Spice, medicine and color

By Kathleen Bennett

*Parmotrema perlatum,* Parmeliaceae

**Synonyms:** (*Parmotrema chinense*, *P. tinctorum*)

**Common names**": Black stone flower, kalpasi (Tamil), dagad phool (Marathi), pathat ke phool (Hindi), shaileyam (Sanskrit), bojhwar / chadilla (Northern India).

Image from Molly Dowling, Atlas of Living Australia

A traditional spice used in Indian cooking, and like many spices around the world, *Parmotrema perlatum* also possesses medical benefits. Appearing as though it were made up of concentric rows of ruffles blue-green ruffles, the underside of the thallus is dark brown or black.

This lichen naturally grows in temperate areas of Australian, especially along the Australian coast from Tasmania and Victoria up to Queensland. Specimens have also been found south of Perth in Western Australia, in Papua New Guinea and around Cooktown, Queensland. Usually found on trees with neutral to acid bark, this lichen is not thought to grow where air pollution is high

**Medicinal actions**

A common ingredient in an Ayurvedic tonic (charila), *P. perlatum* is used for loss of appetite, indigestion, flatulence , etc. (Crawford, 2019). Additional actions for the black rock flower include: antibacterial, antidiabetic and antioxidant (Madheshwar et al., 2017).

**Culinary Uses**

This lichen is said to add a unique but subtle flavor to foods. Consider adding a pinch to 2 tsp. of the dried powdered herb to one of these Indian dishes: Bombay biryani, nahari (Paaya), goat stew, chicken Chettinad (Tamil Nadu curry), East Indian Bottle Masala (Mumbai) or most vegetarian recipes. In many areas, *P. perlatum* is a key component of garam masala ( See recipe). For the East Indian Bottle Masala, check out the website, Flavors of Mumbai (http://www.flavorsofmumbai.com/east-indian-bottle-masala-recipe/) and for the chicken Chettinad look for Ocean of Recipes (https://www.oceanofrecipes.com/indian-recipes/chettinad-chicken-curry-kuzhambu.shtml)

If you are interested in trying this spice it may be growing in your backyard or you can order it online

Herbies Spices: Dagad Phool - $5.95/0.03g

Plant Spices: Dagad Phool - $14.99/100g.

**Garam masala:**

1 bay leaf

1 ½ tsp fennel seeds

2 star anise

10 green cardamon

1 tsp peppercorns

5 pieces cinnamon bark (2 inch/5cm)

4 tsp coriander seed

1 tsp caraway seeds

2 tsp ground mace

½ tsp nutmeg

3 stone flowers (about 2 TB)

lightly toast all ingredients until they become fragrant – then powder in a mortar or blender. Use as directed in recipes or add ½ – 1 tsp to black tea (with milk).

One final note: A tablespoon of P. perlatum in a quart jar of water with about 1/2 cup of cloudy ammonia shold produce red to a pink to raspberry dye for wool and animal fibers.

**References:**

Jayalal, U., Divakar, P. and Hur, J.P. (2013) The lichen genus Parmotrema in Korea. *Mycobiology*, 41(4), 25-36.

Crawford, S.D. (2019) Lichens used in traditional medicine. In: B. Rankovic, (2019) *Lichen secondary metabolites (2nd ed.).* Springer Nature, Cham, Switzerland.

Madheshwar, R.V., Perumal, T., Rubalakshmi, G. and Nirubama, K. (2017) evaluation of phytochemical analysis and antithrombolytic activiies of dual organism lichens – Parmotrem perlatum. *Indian Journal of natural Science*, 7(42), 1-9

## **PURSLANE** (*Portulaca oleracea*) from Pat Collins

Image from Wikepedia Commons

Often called Pigweed, Wild Portulaca or Munyeroo

This plant is one of the most commonly seen and easily recognisable species in Australia. The species has an almost worldwide distribution but there is a native form which is most prevalent in inland Australia. Now the introduced and the native forms have become so intermixed in coastal and suburban areas it would be an impossible task to separate them.

Purslane rates amongst the world's most effective colonising weeds, growing whenever there is open, sunlit soil. It is a common weed found in gardens, paddocks, wasteland and even in pavement cracks.

It is an annual, low-growing succulent herb appearing in the warmer months. Stems are juicy and often reddish-brown. Leaves are opposite, small and succulent and flowers small, yellow, solitary or clustered growing in the fork between stem and leaf. Seeds are minute, up to 10,000 seeds/plant.

**Recipes: Potato and purslane latki**

1 potato, grated

1 egg, beaten

½ cup pursland leaves and stems, chopped

1 Tablespoon flour (or corn starch for GF)

salt and pepper

herbs of choice

Mix all ingredients together and form into balls. Flatten and cook in a frying pan with a little olive oil on a slow heat until golden brown.

**Pickled purslane**

500 ml apple cider vinegar

5 black peppercorns

1 tsp coriander seed, crushed

½ tsp dill seed

1 large clove garlic, sliced

1 small red capsicum, sliced with seeds

500 g purslane, leaves and stems.

Place all ingredients except purslane into a saucepan. Boil and remove from heat.

Pack jars full of purslane and pour over the pickling vinegar to cover. Seal jars tightly, label and with date and contents.

Ref. Collins, P. (1998 ) *Useful Weeds at my Doorstep.* Self-published

### Aboriginal use of Portulaca seed

From Cherikoff, V. & Isaacs , J. (1989) *The Bush Food Handbook.* T Tree Press, Sydney p. 165

The seeds of Portulacaceae...were harvested by pulling up whole plants and piling them in large heaps. The plants were turned over after several days to dry further. As the plants dried the seed capsules dropped their content so that the small black seeds could be collected from the ground. These were cleared of debri wet-milled into a 'crunchy' paste and either eaten 'off the grindstone' or poured as a wet batter into hot ash and cooked to make a seed cake.

For traditional Aborigines, these species were important because they were local abundant and the seeds are high in protein, fat, carbohydrate, fibre and minerals. Plants sometimes covered several acres in almost crop-like monoculture, and there is evidence that Aborigines dug channels and built dams to irrigate areas where these species grew.

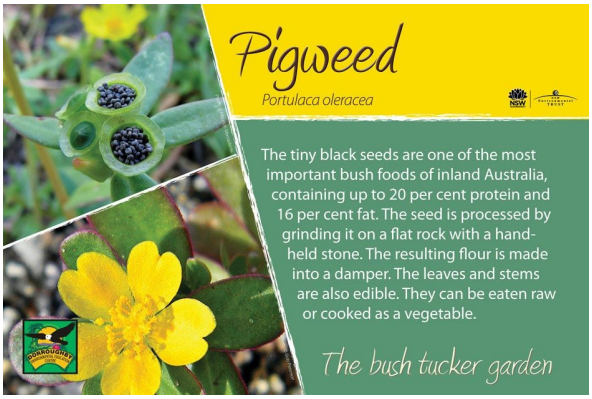
The seeds could be stored often in quantities of hundreds of kilograms, piled up and coated with grass or mud for protection. The store allowed ceremonies to take place with communal hunts augmenting the staple food provided by the seeds.

Besides the edible seeds, pigweeds can be used as salad vegetables, and a European variety, *P. oleracea* var. *sativa* has been cultivated in southern Europe for this purpose.

### Other resources on the Internet, from Kathleen

In an article from Epicurious, purslane was considered a trendy vegetable in the US in 2015. Check out the article for some recommendations for dishes. Werner, recommends using purslane in soups, tacos, pesto and simply wilted in a pan with garlic, Olive oil and lemon.

For those who enjoy Greek food, purslane or is a traditional vegetable, there. Search for kopiatse and purslane to access a lovely recipe for tzatziki and a traditional Greek purslane salad.




### Reference

Liacopoulou, I. (2008) Purslane salad (glistrida), purslane tzatziki and carrot tzatziki. *Kopiaste-To Greek hospitality*. https://www.kopiaste.org/2008/07/purslane-salad-glystrida-purslane-tzatziki-and-carrot-tzatziki/

# WOODFORDIA INC

We had the opportunity to spend the last week of 2019 as presenters at the Woodford Folk Festival. Apart from our demos and talks at the Blue Lotus venue on Australian oils, distillation, medicinal mushrooms and herbal teas, we also sampled some good entertainment. But most of all, the experience of living in an alternative world for a week - a world that for some of us is a lot closer to reality than the one we came home to - is what the festival is about.

Scene from the festival, Dec 2019

Woodfordia is a living entity that continues to grow, inspire and educate throughout the year. Apart from the annual planting festival, unlikely to proceed this year, there are monthly gatherings of volunteers and citizen scientists under the Forest Woodfordia umbrella. Projects include butterflies, bamboo, biochar and composting. The projects that we engage in are the Treehuggers and The Mycology (Fungi) Research Project.

Treehuggers at work. All trees in the background have been planted by Woofordia volunteers over the last 30 years.

The fungi project is led by Dr. Sandra Tuszynska , the environmental projects officer at Woodfordia.


**The Mycelium Network Remains Strong & Connected!**

Mycology workshop—free for all comers

One of the key events to be cancelled this year:

Join Andrew for a Bush Medicine Walk and a discussion on Indigenous plants for health

Wednesday 22 April.

11:00 AM - 12:30 PM


Indigenous Plants for Health Association Inc.

# The burning summer of 2019-2020

## Reports from our Members

As we all know it has been a torrid summer, and one of the biggest fires of all, the Gospers Mouuntain fire, burned right across the southern and western edge of the Hunter Valley, razing the Wollemi and Yengo National Parks to the ground. Here are some personal accounts from members who live on the fringes of these wilderness areas.

**********

I live on a majority Aboriginal owned 160 acre bush block near Laguna. We call this place “Ngurrumpaa “. We run camps for Aboriginal youth, international uni students, academics, or anyone wishing to experience Aboriginal culture first-hand. We also hold workshops: amongst these have been sessions with the Ngungkari ( traditional Aboriginal healers ), weaving, woodworking, traditional dance, and several cultural burning weekends with Koori Country Firesticks.

One of the stock activities on our camps is a walk and talk about indigenous plants, and within 100 metres radius of our main camp can be found at least 35 species with culinary, medicinal or cultural uses—or at least there were, before the Gospers Mountain/Little L Complex fires merged and paid us a visit.

We had evacuated when the fires reached our property on December 5th, and we watched the Fires Near Me app as the grey shadow moved inexorably over our beloved place. Two days later I walked in, 2.5 km from the public road, with the fire still blazing in hollow logs, fallen trees everywhere, smoke-haze, and an eerie silence. I fully expected to find a scene of complete destruction, but was amazed to see that the fire had burnt right up to 4 of our buildings and had miraculously stopped. Some outbuildings and water tanks were destroyed, and one house annihilated, but it seemed a miracle had happened.

Then I realised ! The 4 buildings that survived had each had cultural burns of several acres around them. The one building that perished had not.

That evening received a call from the nephew of one of the partners in our property: an Aboriginal man who is a radio producer with ABC Newcastle. He was enquiring how we had fared in the fires. When I told him, especially the part about the effects of the cultural burning, he was very excited, and was soon out to interview myself as an owner, and Den Barber, founder of Koori Country Firesticks, who had conducted the cultural burns on “Ngurrumpaa “.

Thus commenced a steady stream of visits from media, both domestic and international, with an intense interest in the practice and philosophy of cultural burning ( which I don’t have space to discuss here ).

I have been keeping a diary to monitor the reappearance ( or not ) of our plants, birds and animals. It took exactly 4 weeks for *Commelina cyanea* ( scurvy weed ) to regrow from seed and to flower. Goannas have been very persistent, and are currently having eggs for breakfast . Our two brush turkeys, who were becoming pretty tame, have not shown up yet. Perhaps they’ve moved to a spot where there is unburnt leaf litter, for the male to make his mound, sing for the female to come and lay her eggs, that he can nurture new life.

Phil Sheppard

“Ngurrumpaa “

https://www.flickr.com/photos/bertknot/8226325512

Blue Mountains World Heritage and Bushfire

Blue Mountains Bushfire Damage JAN2020.jpg

Wikimedia Commons

https://npansw.org/2020/02/28/blue-mountains-world-heritage-and-bushfire/?ct=t%28Nature+NSW+Online+-+Winter+2017_COPY_01%29&mc_cid=6f85dc213b&mc_eid=%5BUNIQID%5D

# The burning summer (cont.)

As I put fingers to the keyboard, I hesitate to share our experience with the bushfires as we were among the lucky ones, we still have our home. Our extraordinary RFS members who were battling the fires day by day in the Lower Hunter contained the 70 km front of the Gospers Mountain, Little L and Three Mile fires which formed a C around our property… the fire front was kept from completing the circle and doing a corroboree at ours.

We experienced all of the emotions wondering daily what was going to come next, sometimes with the eerie silence of super hot days dripping with heat while sucking the water out of plant stems, trees, leaves, a mountain parrot panting breathless with thirst, mangy wombat wandering looking even more dazed, three chooks falling off the perch. We learned to pay attention to humidity, temperature and the direction of the wind, and to check it regularly. Crop yields were nearly completely down as tomato plants were brutally scorched, elder flower trees bare with no shade available to the hens, the ground too parched and water too scarce to stretch further. Even with 2 truckloads of water, our tanks were low; we had buckets at every sink to catch every drop. Showers? uh uh. if lucky, a sprinkle.

We also experienced the uncanny impact of when the rains came. Even 2 mm brought about a response…with a few stems of grass poking up from the ground like a few bits of hair on a mostly clean-shaven head. 5 mm brought more…covering bald spots leaving others. Flowers popping up from bulbs just waiting for a drink….Then the big soak, two, three, and the roots finally, finally had a drink.

Lessons from the land. Nature recovers. She finds a way. Life seeks life. Part of the landscape, we gratefully heal.

Brynnie Goodwill
Murray's Run

I live on the northern edge of Wollemi National Park and like many people living in NSW and other states we lived in fear of the fire coming onto our land. Our property boarders the Park on three sides and almost surrounds our top block. This block is accessible by a track that traverses 15 creek crossings and we watched as the fire came onto the ridges just above our top block. Luckily the fire moved slowly due to minimum under storey (past fire 6 years ago) but also the country is rugged and the wind doesn't get into the gullies so we were very lucky. We watched this fire (Kerry Ridge Fire) that started near Mount Nullo in November 2019 to grow into a very large fire that was always "Out of Control" as burning in inaccessible country. It eventually joined the massive Gospers Mountain fire and with other fires to create a Mega fire. It was an amazing adrenalin rush and Bryant and I have never worked so hard in stinking hot December/ January summer (up to 45 degrees C) to clean up our place. A mammoth effort as we had years of accumulation of old tyres, wire mesh, watering systems etc embedded in the garden. Up at daybreak and into it, only stopped when the sweat got into the eyes and you felt like dropping. Everything was tinder dry and we had already sold all the stock due to our dam going dry and running out of feed. I spent umpteen hours watering my fruit trees and other useful plants (practically gave up the vegie garden) The precious bore started to dry up and that became a worry on top of the constant warnings that a southerly would blow the fire onto our land. We watched satellite images and Fire Near Me sites to keep up to date as there was so much smoke. When a sudden heavy thunderstorm finally put out the fire about a month ago it felt like we'd missed the bullet and it was hard to come down from that adrenalin high.

All that time we'd filled baths and troughs to feed the natives. We had a large flock of Gang Gang cockatoos regularly drinking and so many other fauna such as birds, goannas, wild dogs, wallabies, wombats and possums to name a few. Now our land is green again and the creek is running it is like a different place (cont. on p. 10).

Kangaroo Island

—before and after

For more before and after photos of the big event check out the Bored Panda website:

https://www.boredpanda.com/australia-bushfires-before-after-photos/?utm_source=google&utm_medium=organic&utm_campaign=organic

## The burning summer (cont.)

to the scorched land we once owned. Many of our She Oaks, Wattles and Paperbarks died (anything that didn't have deep roots). So many trees fell and limbs came down in order to save the tree. When the creek came down with a flash flood it brought down all the ash, burnt wood and other debris and created a black sludge in the creek bed. In a way this area wasn't as badly affected as other areas as the fire had been slow and was more like a cold fire burning the undergrowth and sparing the trees. Sometimes the wind whipped up the fire and especially on top of the ridges the fire was more damaging. When you hike into this area you see the terrible loss of undergrowth that protected and fed the fauna but how many of our native plants have we lost. Not all plants will come back after the fires especially if the fire was intense. We had a bad fire six years ago and still the hills are stark where the fire burnt fiercely. Other areas have recovered well but Wollemi has a base of sandy soil up on the ridges and slopes and the ecosystem is very delicately balanced. Once the understorey is burnt then erosion occurs and only the hardiest of species survives – often being the weedy types.

Wollemi was not the only National Park affected by fire, the Parks were burning all over NSW and other states. The statistics as at January 2020 are 55 National Parks or reserves were affected by fire more than 90%; 70 NPs 75-99% and 29 NPs more than 50-95%. Overall 5.3 million ha were burnt in NSW (6.7% of the state) and 2.7 million ha of this amount were NPs. (more than 40% of the states NPs). If you look at pictures of how much was burnt of Wollemi NP you would see that the majority of this massive park has been impacted by fire.

Wollemi NP includes northern Blue Mountains and covers the lower hunter regions of NSW in east Australia. It is 501,703ha in size and the wilderness area is 361,113ha of this area. This is the largest such wilderness area in Australia. It was one of the eight protected areas that in 2020 were inscribed to form part of the UNESCO World Heritage-Greater Blue Mountains area.

Wonderful news that the 200 Wollemi Pines growing in the wild have survived the fire. Growing in secluded secret valleys, protected by giant cliffs they were also covered in fire retardant and the remote RFS teams even made up an irrigation system to protect them. We have lost so much including an estimated billion fauna and the flora is also badly impacted. More than 60 threatened fauna species have been affected by fire including 32 species for which more than 30% of recorded locations are in burnt sites. The statistics are still coming in but knowing that more than 80% of World Heritage listed Greater Blue Mountain area and 54% of the NSW components of the Gondwana Rainforests of Australian World Heritage property had been affected by fire is indeed a worry.

Pat Collins Martindale

## From Callicoma Hill, Mt. Royal

Martin Fallding is known to some of us, and on his website he reports on the effects of the fires and their aftermath. He discusses the challenges ahead from Callicoma Hill, located at the southwest corner of the Mt. Royal Range, with the Northern Tablelands beyond.

https://www.calli.com.au/callicoma-hill-news/the-challenges-of-summer-in-the-new-decade

## Citizen Science Bushfire Response - Project Audit

In response to the bushfire crisis, ACSA is seeking to support conversations and plans – both short and long term - that help further connect the citizen science community to contribute to the complex efforts required to learn from and understand the impact of the bushfires (see ACSA bushfire response).

The first step we are taking is an audit to gather as many research projects as we can that include fire – bushfire/forest/wildfire as their focus and citizen science as part of their methodologies. We have developed the ACSA Citizen Science Bushfire Response Project survey and we would be very grateful if you could circulate this widely through your networks to all those who might already be working in this area. We are seeking projects across a broad spectrum of subjects, from biodiversity to human health that use a wide range of methodologies, from projects which require on the ground work, to purely online projects where everyone can contribute.

This information will be used to create a publicly available list of active projects and ACSA will work with partners to identify a number of projects that have the potential to contribute on a national scale.

Contact: Libby Hepburn

libby@atlasoflife.org.au

+61 458 798 990

Nature Conservation Council
The voice for nature in NSW

## Bushfire Conference 2020

scheduled for the 19-20th May 2020 at the NSW Teachers Federation Conference Centre in Sydney until next May 2021 (date to be confirmed).

contact Evelyn or Lucy at BushfireConf2020@nature.org.au,

## More on cross-cultural burning

Michelle McKemey heads Melaleuca Enterprises, an environmental consultancy company based in the New England Region.

Michelle is undertaking her PhD at the University of New England (UNE) with support from the Firesticks Project and an Australia Postgraduate Award Scholarship.

She has a landmark paper on cross-cultural burning published recently, this can be downloaded from http://melaleucaenterprises.com.au/research/

For the record, publication details of the paper are listed below.

McKemey, MB. et al., (2019) Cross-cultural monitoring of a cultural keystone species informs revival of Indigenous burning of Country in south-eastern Australia *Human Ecology* 47, 893–904.
Also worth checking out:
http://www.firesticks.org.au/
Indigenous weather knowledge
http://www.bom.gov.au/iwk/calendars/banbai.shtml

## More on Bushfire Recovery

### Landcare – after the fires

https://hunterlandcare.org.au/after-the-fires/?utm_source=Newsletter+General&utm_campaign=11c50a70d6-EMAIL_CAMPAIGN_2019_05_30_04_52_COPY_01&utm_medium=email&utm_term=0_8a9d6ae1af-11c50a70d6-526963281

### Australian Plant Society

Bushfire recovery

https://aps.wildapricot.org/Stories-archive/8683894

### Australia's Strategy for Nature

https://naturehub.govcms.gov.au/sites/default/files/2019-11/Australia_s_Strategy_for_Nature_%20web.pdf

**Feral animal control**

The biggest feral animal control program in NSW history is officially underway, with around 800 pests that have already been culled.

It's a response to this year's unprecedented bushfires, which left our wildlife more vulnerable to predators and extinction than ever before.

**More than one billion animals killed in Australian bushfires**

https://sydney.edu.au/news-opinion/news/2020/01/08/australian-bushfires-more-than-one-billion-animals-impacted.html

National Parks Association - Regrow & Rewild our natural heritage

Regrow | Rewild
Healthy places for plants, animals & people

https://npansw.org/regrow-rewild/

### Other news

**Gondwana-era rainforest stand of nightcap oak devastated by unprecedented bushfire ABC North Coast**

Western Australia bushfires devastate the Stirling Ranges — one of the world's richest biodiversity hotspots ABC Great Southern Tyne Logan, John Dobson 7 Jan

'It's heart-wrenching': 80% of Blue Mountains and 50% of Gondwana rainforests burn in bushfires

### Bushfire recovery package for wildlife and their habitat

https://www.environment.gov.au/biodiversity/bushfire-recovery

### The Threatened Species Scientific Committee 10-point Bushfire Response Plan

https://www.environment.gov.au/biodiversity/threatened/publications/threatened-species-scientific-committee-bushfire-response-plan

### Nature Conservation Council

Last year, the New South Wales government created a dirty bill to make it easier for coal and gas projects to get the green light in NSW.

Thanks to hundreds rallying outside NSW Parliament and thousands making submissions, we put the brakes on the coal lobby's attempt to weaken our NSW environment laws.

Please share our video to celebrate the power of people coming together to protect the climate and communities!

https://www.facebook.com/156271657717715/videos/1110766655924400/

Seen on the National Parks Association site

https://npansw.org/2020/02/27/climate-change-anthem/?ct=t%28Nature+NSW+Online+-+Winter+2017_COPY_01%29&mc_cid=6f85dc213b&mc_eid=%5BUNIQID%5D

## CLIMATE CHANGE ANTHEM

**(To be sung to the tune of Advance Australia Fair)**

Australia's water must be saved
we need each precious drop
we've wasted water long enough
and now it's gotta stop.
Our land grows browner every day
the dams are dry, we're told
this generation has the means
for change, we must be bold.

So loud and strong now let us sing
for change, we must be bold

The climate change is caused by man
land management is poor
our rivers choke and wildlife dies
can't do it anymore.
A dry tsunami threatens us
not fiction, it's a fact
before the landscape chokes with salt
our government must act.

So loud and strong now let us sing
our government must act.

Don't leave it to the pollies
to Kyoto and the Yanks
we must act now to make things right
please join us in the ranks.
Sustain, conserve, de-salinate
give life back to our lands
c'mon now, all you Aussie mates
the future's in our hands.

So loud and strong now let us sing
the future's in our hands!



The renowned author and biologist Barbara Kingsolver composed a climate change anthemic poem of her own:

## 'Great Barrier'

BY BARBARA KINGSOLVER

TIME MAGAZINE, SEPTEMBER 12, 2019

The cathedral is burning. Absent flame or smoke, stained glass explodes in silence, fractal scales of angel damsel rainbow parrot. Charred beams of blackened coral lie in heaps on the sacred floor, white stones fallen from high places, spires collapsed crushing sainted turtle and gargoyle octopus.

Something there is in my kind that cannot love a reef, a tundra, a plain stone breast of desert, ever quite enough. A tree perhaps, once recomposed as splendid furniture. A forest after the whole of it is planed to posts and beams and raised to a heaven of earnest construction in the name of Our Lady.

All Paris stood on the bridges to watch her burning, believing a thing this old, this large and beautiful must be holy and cannot be lost. And coral temples older than Charlemagne suffocate unattended, bleach and bleed from the eye, the centered heart.

Lord of leaves and fishes, lead me across this great divide. Teach me how to love the sacred places, not as one devotes to One who made me in his image and is bound to love me back. I mean as a body loves its microbial skin, the worm its nape of loam, all secret otherness forgiven.

Sacred union labyrinth at the Woodford Folk Festival

# Australian Citizen Science Association

**March 2020 update**

Autumn is here, and with it we have seen welcome rain across much of the countryside severly impacted by the summer bushfires. While we still have a long road ahead, it is encouraging to see signs of regrowth and regeneration. Read on for more information on ACSA's bushfire reponse including the project audit results and ongoing activity in this space. Plenty more in this bumper edition including the opening of the Eureka entries, a City Nature Challenge update and an introduction to Maxine Newlands, new member of the ACSA management team.

## ACSA Bushfire Reponse - projects and promotion

We also realised that none of us knew what citizen science we could usefully do that would help scientists and natural resource managers with information about what was happening. We needed to be guided as to what to look for so we could begin to understand the destructive and regenerative processes we were observing around us.

ACSA established an informal working group to undertake an audit of post bushfire/wildfire projects which involve an element of citizen science in their data gathering. Our task was to collate what we could find and make it accessible to the whole citizen science community.

We now have both an Atlas of Living Australia Biocollect Bushfire Projects page and a Sci Starter microsite to which we can continue to add suitable projects and where you can find relevant platforms and methodologies to work with.

BioCollect
ADVANCED FIELD DATA COLLECTION

https://www.ala.org.au/biocollect/

## City Nature Challenge 2020


With less than 50 days until the 5th City Nature Challenge (CNC) the four Australian cities competing are busy training citizen scientists and getting the word out on social media. International founders and organisers, Lila Higgins (Natural History Museum of LA County) and Alison Young (California Academy of Sciences), anticipate more than 40,000 people worldwide will make & share over 1 million observations of nature in over 230 cities from the 24th to 27th of April inclusive. All Australian iNaturalist research-grade observations are added to the Atlas of Living Australia via the iNaturalist Australia node.

For more information on how our cities are preparing, please click here.

Download the iNaturalist app and head to Redland City (QLD), City of Sydney (NSW), City of Geelong (VIC) or Greater Adelaide area (SA) from the 24-27th of April to participate in the City Nature Challenge 2020

# Book Reviews

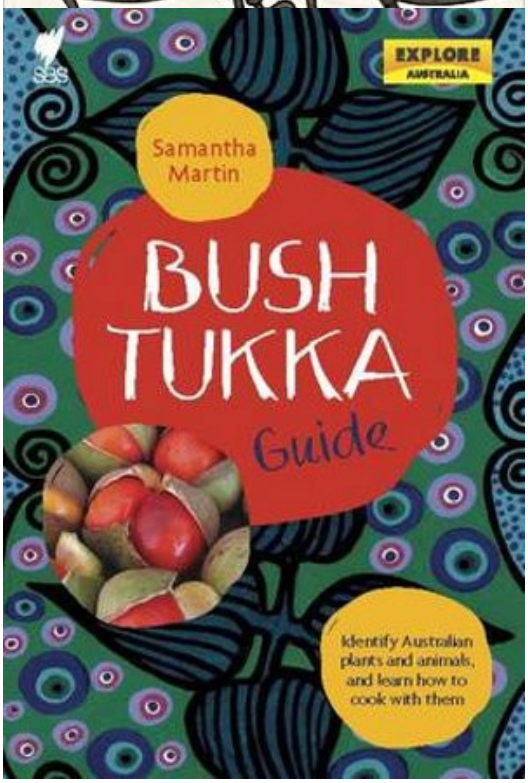
By Kathleen Bennett


Lewis-Stempel, J. (2016) *The running hare*. Black Swan Edition, Transworld Publishers, London, UK.

As part of a personal longing for the birds and hares he remembers from his youth and in part as a comparison to the actions of his neighbors, the author plants and tends a wheat field, the old-fashioned way. Not only does, Lewis-Stempel note the importance of wildflowers (weeds) for the health of the bugs, the birds and the land, but he includes excerpts form writers, poets and nature lovers who have recorded their thoughts over time.

While based on the life of a field in the English countryside, Lewis-Stempel provides much food for thought regarding the Australian paddock as well. There are many restoration projects, many people planting Australian natives in their gardens. We know that dense shrubs provide cover and increase the numbers of "little birds." But what fun to do as this author and chronicle all the wildlife, intermixed with snippets of *Cootamundra wattle*, *Dark emu* or *In Australian Wilds*.

*The Running Hare* is a book to open that opens your eyes and stimulates you to pay attention to the many little lives of the bush.



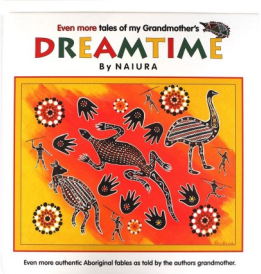

Brunteteau, J.-P. (1996) *Tukka: Real Australian Food.* Angus & Robertson animprint of Harper Collins Publishers, Sydney.

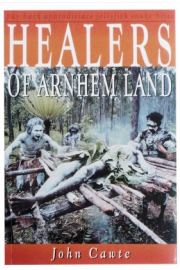
While the title may seem a bit presumptuous today, Tukka offers easy-to-cook recipes using native plants and animals accompanied by luscious photography (you may see kangaroos in a whole new light). This book offers more than just recipes. There are fascinating bits of botanical history, handy details on food collecting and important preparation information ( bunya nuts, Illawara plum, emu).

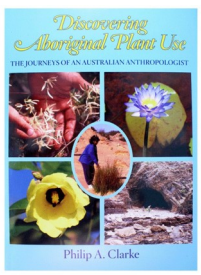
One chapter covers barks and fuels used for smoking and suggests using paperbark to wrap damper prior to baking. In another chapter, the author talks about the chameleon-like color changes of the clove-scented lillipilli or riberry ( Syzygium spp.) which turn from scarlet to mauve when frozen, losing almost all color when cooked with lemon juice, then miraculously turning rosy red upon cooling. This is an experiment worth testing – and tasting.

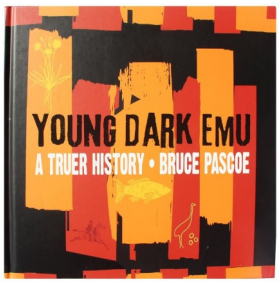
Overall, the book is a delight. Nice on the coffee table and handy in the kitchen.

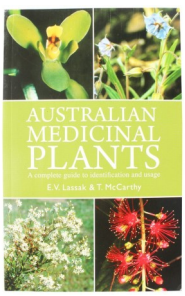
*Bush Tukka Guide* and *Deep Time Dreaming* can be purchased from Planet Corroboree . Here are some other titles that may interest our readers:



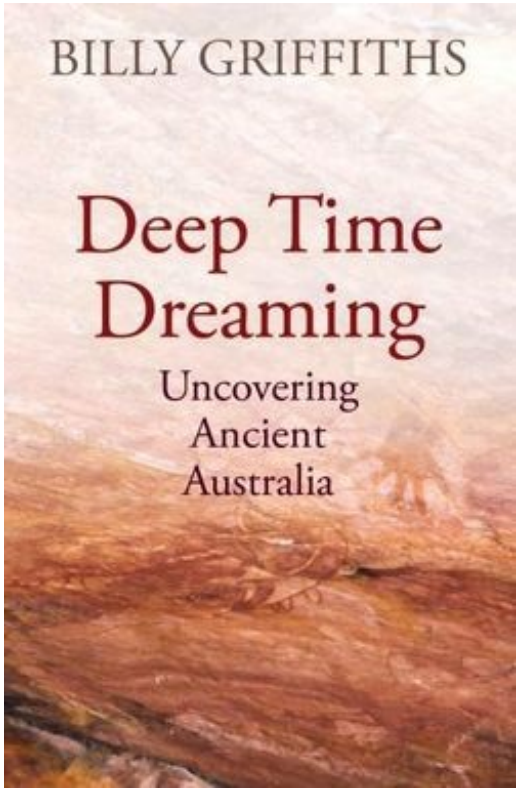




https://planetcorroboree.com.au/




Published by Angus and Robertson, 2018.

Reviewed by Andrew Pengelly

This book has little to do with plants, but it is essential reading for those of us with an interest in the history of archaeology in this country, and more specifically the tenuous relations between Indigenous and non-Indigenous Australians with their different perspectives on how the past should be interpreted and preserved.

I must confess an interest— having completed my major in Archaeology and Prehistory at the University of New England, and it is somewhat gratifying to recognize names of past professors and teachers in a narrative such as this. It does bring back memories of being the acolyte at my first excavation camp, given boxes of dirt to screen for stone artefacts in a hot caravan, to find out later the boxes were already screened (a standard initiation ritual apparently). There may well be an objective to the ritual—I was to learn that most archaeology field work involves sifting through dirt, and most of the time coming up empty.

Our author Bill Griffiths came into the field not from an academic background, but as a camp manager and cook at archaeological digs. In the end there is only so much managing and cooking to be done, and he soon got hooked on the idea of uncovering the past in an ancient land, a past that couldn't be measured in historical terms, but which required a shift to what he terms "deep time dreaming".

We are reminded of past controversies, such as "The Last Tasmanian" film made by the charismatic but well-meaning archaeologist Rhys Jones, who managed to deeply offend the descendants of Tasmanian Aborigines who had been relocated to Bass Straight Islands. Similar stories were played out over the next decades, following the discovery of even more ancient human remains at Lake Mungo, the Western Desert, and elsewhere.

In the publishers words "*Deep Time Dreaming* investigates a twin revolution: the reassertion of Aboriginal identity in the second half of the twentieth century, and the uncovering of the traces of ancient Australia**.** It explores what it means to live in a place of great antiquity, with its complex questions of ownership and belonging. It is about a slow shift in national consciousness: the deep time dreaming that has changed the way many of us relate to this continent and its enduring, dynamic human history.

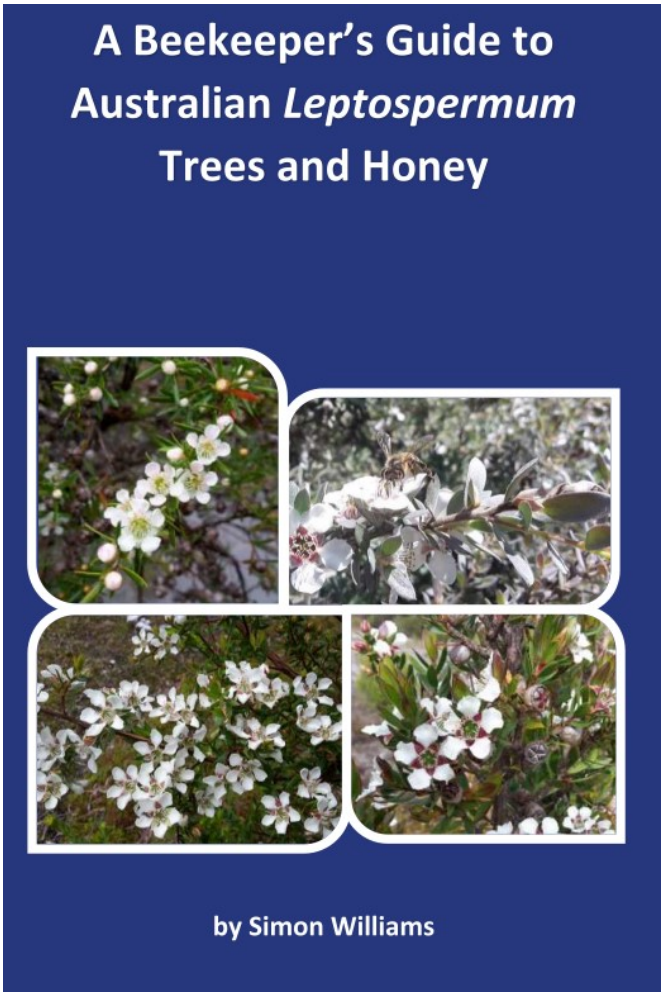
**********


The Honeyhunters stall at Brisbane's great Northey St. organic market, where I first saw this book displayed

In the author's own words, the design of this book is to assist in the identification of members of the *Leptospermum* genus. Leptospermum species are a diverse genus that grows throughout Australia. Some Leptospermum species are easy to distinguish; other species can be more difficult. Species such as *L. polygalifolium* occupy diverse ecosystems, with natural variation occurring throughout their range. This book aims to provide a general identification guide of the species that occur throughout Australia.

For Leptospermum fans such as me this book is a Godsend. Apart from the comprehensive profiles of hundreds of species, there are additional resources such as a table of flowering times, a botanical primer featuring identification features of leaves, flowers, fruit and insect galls, while for beekeeepers there are details of the amount of dihydroxyacetone in the nectar of different species. This an indicator as to the ability of a species to produce honey with high levels of methylgloxal (MGO), the compound that characterises "medicinal" grade honey.

This book is self-published in 2018, as a part of the author's PhD thesis at Sunshine Coast University. Look for it on the Internet, you might be surprised.



References Cont. from p. 4

Identic Pty Ltd. (2016) *Chamaesyce hirta*. *Weeds of Australia – Queensland Biosecurity Edition Fact Sheet, special edition*. https://keyserver.lucidcentral.org/weeds/data/media/Html/chamaesyce_hirta.pdf

Kumar, S., Malhotra, R. and Kumar, D. (2010) Euphorbia hirta: Its chemistry, traditional and medicinal uses, and pharmacological activities. *Pharmacognosy Review*, 4(7), 58-61.

Kumar, M., Sheikh, M. A., & Bussmann, R. W. (2011). Ethnomedicinal and ecological status of plants in Garhwal Himalaya, India. *Journal of ethnobiology and ethnomedicine*, *7*, 32.

Kunwar, R. M., Shrestha, K. P., & Bussmann, R. W. (2010). Traditional herbal medicine in far-west Nepal: a pharmacological appraisal. *Journal of ethnobiology and ethnomedicine*, *6*, 35.

Liu, Y., Murakami, N. Ji, H., Abreu, P. and Zhang, S. (2007) Antimalarial flavonol glycosides from Euphorbia hirta, *Pharmaceutical Biology*, 45(4), 278-281.

Maiden, JH. 1889. *Useful Native Plants of Australia (including Tasmania).* Technological Museum of NSW.

McVeigh K. (2018). Ubiquitous euphorbia is anything but euphoria for the eye: a reminder to get any area of contact with the toxic sap under the tap. *Eye (London, England)*, *32*(2), 243–247.

Moshi, M.J., Otieno, D.F., & Weisheit, A. (2012). Ethnomedicine of the Kagera Region, north western Tanzania. Part 3: plants used in traditional medicine in Kikuku village, Muleba District. *Journal of Ethnobiology and Ethnomedicine*, *8*, 14.

Ogbulie J.N., Ogueke C.C., Okoli I.C., Anyanwu B.N. (2007) Antibacterial activities and toxicological potantials of crude ethanolic extracts of *Euphorbia hirta*. *African Journal of Biotechnology,* 7(6), 1544–1548.

Perera, S. D., Jayawardena, U. A., & Jayasinghe, C. D. (2018) Potential Use of *Euphorbia hirta* for Dengue: A Systematic Review of Scientific Evidence. *Journal of tropical medicine*, *2018*, 2048530.

Perumal, S., & Mahmud, R. (2013). Chemical analysis, inhibition of biofilm formation and biofilm eradication potential of Euphorbia hirta L. against clinical isolates and standard strains. *BMC complementary and alternative medicine*, *13*, 346.

Perumal, S., Mahmud, R., & Mohamed, N. (2018). Combination of Epicatechin 3-Gallate from *Euphorbia hirta* and Cefepime Promotes Potential Synergistic Eradication Action against Resistant Clinical Isolate of *Pseudomonas aeruginosa*. *Evidence-based complementary and alternative medicine : eCAM*, *2018*, 5713703. https://doi.org/10.1155/2018/5713703

Ping, ID., Chen, Y. Sreeramanan, S. & Sasidharan, S. (2013). Acute and Subchronic Toxicity Study of Euphorbia hirta L. Methanol Extract in Rats. *BioMed Research International* Vol. 2013, Article ID 182064, 14 pages http://dx.doi.org/10.1155/2013/182064

Pingale, SS. (2013). Evaluation of Acute Toxicity Study for Euphorbia hirta. *International Journal of Bioassays* 2 (1), 329-332

Pretorius, E. (2008) African plants and herbs in asthma therapy. In: R.R. Watson and V. Preedy. *Botanical Medicine in Clinical Practice.* Cab International, Oxon, United Kingdom. pp. 20-30.

Rajeh, M. A., Zuraini, Z., Sasidharan, S., Latha, L. Y., & Amutha, S. (2010). Assessment of Euphorbia hirta L. leaf, flower, stem and root extracts for their antibacterial and antifungal activity and brine shrimp lethality. *Molecules (Basel, Switzerland)*, *15*(9), 6008–6018.

Shih, M. and Jong, C. (2012) Potential applications of Euphorbia hirta in Pharmacology. Doi: 10.5772/34644.

Singh, G., & Kumar, P. (2013). Phytochemical study and screening for antimicrobial activity of flavonoids of Euphorbia hirta. *International journal of applied & basic medical research*, *3*(2), 111–116. https://doi.org/10.4103/2229-516X.117082

Skenderi, G. (2003) *Herbal Vade Mecum.* Herbacy Press, Rutherford, New Jersey.

Steggerda, M. (1944) Some ethnological data concerning one hundred Yucatan plants. *Bureau of American Ethnology Bulletin*, 136(29), 189-226.

Sundari, S.K., Kumarappan, C.T., Jaswanth, A., and Valarmathy, R. (2004). Bronchodilator effect of alcoholic extract of *Euphorbia hirta* Linn. *Ancient science of life*, 23(3), 1–5.

Tavera, T.H. (1901) J.B. Thomas (trans.) *The Medicinal Plants of the Philippines*.(P. Blakiston's Son And Company, Philadelphia, Pennsylvania.

Tuhin, R., Begum, M.M., Rahman, S., karim, R., Begum, T., Ahmed, S.U., Mostofa, R., Hossain, A., Abdel-Daim, M. and Begum, R. (2017) Wound healing effect of Euphorbia hirta linn,( Euphorbiaceae) in alloxan induced diabetic rats. *BMC Complementary and Alternative Medicine*, 17, 423.

Upadhyay, A., Chattopadhyay, P., Goyary, D., Mazumder, P. M., & Veer, V. (2014). Euphorbia hirta accelerates fibroblast proliferation and Smad-mediated collagen production in rat excision wound. *Pharmacognosy magazine*, *10*(Suppl 3), S534–S542.

Vedavathy, S., Sudhakar, A., Mrdula, V. (1997) Tribal medicinal plants of Chittoor. *Ancient Science of Life,* 16(4), 307.

Wong, J.Y., Chen, Y.S., Chakravarthi, S., Judson, J.P., Raj L., S., & Er, H.M. (2013). The effects of Euphorbia hirta on the ultrastructure of the murine liver, kidney and aorta. Experimental and Therapeutic Medicine, 6, 1247-1250. https://doi.org/10.3892/etm.2013.1295

Wren, R.C. (1988) *Potter's New Cyclopedia of Botanical Drugs and Preparations* (revised). C.W. Daniel Company, LTD., Walden, Essex, United Kingdom

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# *Indigenous Plants for Health Association Inc.*

**MEMBERSHIP APPLICATION FORM**

Set out below are my membership application details for Indigenous Plants for Health Association Inc.

Enclosed/transferred is the sum of $20 annual membership fee. The amount has been paid by:

Cheque

Cash

Paid by Bank Transfer (Important flag your name with payment)

## Post Membership Form and cheque to:

IPHA Secretary, 54 Port St.,Middle Park Qld. 4074 OR if paying by transfer you may scan and email the completed and signed form to Kathleen Bennett (kat.herbalmedicine@gmail.com)

## Bank Details for Payments: BSB 637000 Account 722660722

Name: _____

Address: _____

_____Postcode_____

Tel: Home_____ Mobile_____

Email: _____

Please share skills and interests with regard to indigenous and health-promoting plants.

I agree to abide by the Constitution and any policies, rules or regulations established within the association. These are listed on the website www.indigenousplantsforhealth.com

Signed_____Date_____

## IPH Committee Members

President, Newsletter editor: Andrew Pengelly

Vice President: Patricia Collins

Treasurer: Julie Brown

Secretary: Kathleen Bennett

Research Director,: Richard Carney

Regulatory Affairs: Rob Santich

General members: Monica Francia; Natasha Kellett

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