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Editorial

Merle Thompson, NSW Region Council

Australian Native Plants Society Australia (ANPSA) provides Study Groups which afford opportunities for people from across Australia and overseas to share knowledge on those plant families or genera in which they are particularly interested.

A number of Groups, despite small numbers of members, undertake very significant work in identifying species in their areas of natural occurrence, in developing herbaria and living collections and in trialling the cultivation of species and development of cultivars.

This issue has been compiled by the Hibiscus and Related Genera Study Group. The articles reflect the enthusiasm and knowledge of its members and their desire to promote these species to other native plant enthusiasts.

Note: This issue is dated December 2008 to maintain sequence. It was, however, compiled in July 2009 and mentions occurrences between these dates.

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Front Cover: *Hibiscus forsteri* Photo: Geoff Harvey
Woodstock Road south of Townsville, Queensland April 2009

Back Cover: *Hibiscus heterophyllus* Photo: Dr Dion Harrison
Seedling in revegetation plot at Anstead, Queensland November 2008

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Malvaceae in Australia

— An Introduction

Geoff Harvey, Colleen Keena and Dr Dion Harrison

Within the family **Malvaceae**, **Hibiscus** is probably the best known genus with over 300 species. **Hibiscus rosa-sinensis** is the well-known ornamental species grown for their spectacular flowers which come in many shapes, forms and colours as a result of breeding and selection for over 200 years. It is the most popular ornamental plant grown in tropical and warm climates of the world, and is also a popular indoor pot plant in more temperate climates. The **H. rosa-sinensis** complex lies in the **Hibiscus section Lilibiscus**, and is thought to have originated from 12 or fewer compatible species distributed from the east coast of Africa (e.g. **H. schizopetalus**) to Hawaii (e.g. **H. arnottianus**). Though the true origin of some of these species is unknown, none are known to be endemic to Australia. **Hibiscus rosa-sinensis** is widely grown in this country.

Several other exotic *Hibiscus* species are grown for their bast fibres. Some examples include **H. cannabinus**, **H. sabdariffa**, and **H. surattensis**, but there are several others, particularly throughout Asia. The genus **Gossypium**, also in family **Malvaceae**, is best known for its textile fibre known as cotton. **G. hirsutum** (an exotic) is the most widely cultivated cotton species in Australia, but a small amount of **G. barbadense** (exotic) is also cultivated. Two other exotic species, **G. arboreum** and **G. herbaceum**, are cultivated in Asia, but are not grown commercially in Australia.

Various *Hibiscus* species have been grown as a source of food or medicines. The introduced species, **H. sabdariffa** (rosella), was grown extensively during the early settlement of Australia, mainly for jam making, with the leaves also being used as a vegetable in salads or as an addition to cooked foods. The Australian Aborigines used plant parts of various **Australian Hibiscus** species as a food source over thousands of years. The rural pioneers in northern Queensland used native *Hibiscus* as a food source mainly to produce drinks after boiling the flowers.

The ornamental merit of **Australian native Hibiscus** has long been recognised with **H. heterophyllus** grown by Empress Josephine in France in the early 1800's. **H. splendens** was grown in Edinburgh, Scotland, where it flowered in 1830. There are **over 70 recognised Australian native Hibiscus species**, existing as small trees, shrubs and herbs, with many more native species in related genera.

Hibiscus section Furcaria is Australia's largest, containing at least 30 (25%) of the world's 120 species in this section. The next biggest is **Hibiscus section Bombicella**, with over 70 species, 11 of which have been named in Australia. In addition, not including five sub-species of **H. sturtii**, there are at least three un-named species, plus the possible addition of three other species formerly placed in **Macrostelia**.



Lyn Craven, Project Leader, Malvaceae (Systematics and Evolution) CSIRO, Canberra is currently revising the taxonomy of *Hibiscus* section **Bombicella**. This could see Australia having 20% of the world's section **Bombicella** species. Other species of **Australian Hibiscus** fall within the sections **Azanzae**, **Plerocarpus**, **Solandra**, **Trichospermum** and **Trionum**.

The genus **Alyogyne**, which is entirely endemic to Australia, contains five or more recognised species and several varietal forms. Colleen Keena's article titled "**Alyogyne** – An Update" appeared in *Australian Plants* June, 2002 Vol 21 No. 171. **Alyogyne** is the most widely cultivated Australian **Malvaceae** overseas, especially in the USA, where they are grown as ornamentals for their prolific flowering. Several marvellous selections have been made, yet sadly their ornamental potential has been largely overlooked in this country. Current cultivars generally perform best in inland and southern parts (including coastal regions) of Australia. Further development of this outstanding ornamental genus could see them thriving closer to the coast in more northern and sub-tropical locations.

There are 17 species of **Australian Gossypium** (wild cotton) with three distinct groups recognised at the sectional level within the genus. **Sturt's Desert Rose**, **G. sturtianum**, is the Floral Emblem of the Northern Territory, appearing on their flag as well as government and private logos and symbols. It is widespread and morphologically variable. As a garden plant it will readily adapt to wet coastal conditions. The scope for **Australian Gossypium** species to be used for the improvement of commercial cotton cultivars has long been recognised, particularly as a source of disease resistance and also reduced gossypol accumulation in the seeds. There are a number of Australian **Abutilons** and **Abelmoschus** species with good garden potential.

In summing up, well known author and botanical illustrator, Rosemary Opala (deceased) made the following comment: "*It would seem that very few of our Native Hibiscus are being grown in a garden situation and probably this is because of the tremendous range, colour, size and form developed in exotic plants*". Our comment would be "*Wake up Australia!*". Given the extensive genetic diversity among our Australian *Hibiscus* species, there is scope for exceeding what has been achieved horticulturally with the exotic species. For example, many of our species are already far more floriferous, vigorous and faster establishing, drought hardy and cold tolerant compared to the extensively bred cultivars derived from the exotic species. Most are also easily propagated from cuttings. Testament to this is that, partly through the activities of **The Hibiscus and Related Genera Study Group**, some members of Australian-based Hibiscus groups/societies who have previously been exclusively devoted to exotic *Hibiscus rosa-sinensis*, are now seeking to grow, popularise and promote **Australian native Hibiscus**.

So whether you live in the arid inland, the tropics, southern temperate zones or wet coastal areas of Australia, there is a selection of **Malvaceae** species that you could and should grow. Our message is to bring them into cultivation, preserve them and enjoy their beauty.

The **Hibiscus and Related Genera Study Group** is happy to help and advise through its members, newsletters, and maintaining an extensive seedbank.

Images from States and Territories

Geoff Harvey, Colleen Keena and Dr Dion Harrison

NEW SOUTH WALES



Hibiscus splendens from Cooperabung near Port Macquarie



Hibiscus heterophyllus from Warrell Creek near Macksville
Both Photos: Geoff Keena



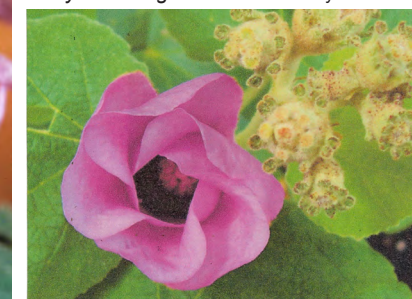
This image (G. Harvey) shows a *Hibiscus heterophyllus* bloom found near Port Stephens NSW by Study Group Member, Meg. Goulding. White and yellow forms are found near Taree and Port Macquarie.

VICTORIA



Malva preissiana [Syn *Lavatera plebeia*]
Photo: Geoff Keena

Radyera farragei Photo: G. Harvey



THE NORTHERN TERRITORY

Photos: D. Hockings



Gossypium australe



Gossypium sturtianum Floral Emblem of Northern Territory



H. pentaphyllus

QUEENSLAND



Hibiscus panduriformis Burm. F.



Abelmoschus moschatus tuberosus

The above prostrate *Abelmoschus* was found on the Atherton tablelands in full bloom as of April/ May 2009. The *Hibiscus panduriformis* was found in recently inundated grassland between Charters Towers and the Lynd Junction. The young plants 1.6 m high were still actively growing as of the end of April 2009. Photos: G. Harvey

THE A.C.T.



Howittia trilocularis F. Mueller



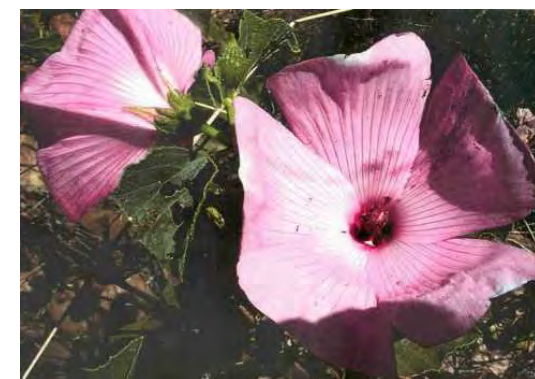
Alyogyne huegelii Photos: G. Keena

ANPS, Canberra Region Inc. in their June, 2009 Journal Vol. 15 N. 10 reported finding *Howittia trilocularis* on the boulder strewn Myanba Creek during a field trip taking in the Myanba Gorge. This is a cold climate species with flowers ranging in colour from lavender through to violet and deep mauve. A nice image appears on page 19. Alyogyne is probably the widest cultivated of the Australian Malvaceae and can be grown in the ACT as well as Tasmania, parts of Europe and the U.S.A.

WESTERN AUSTRALIA



Gossypium rotundifolium



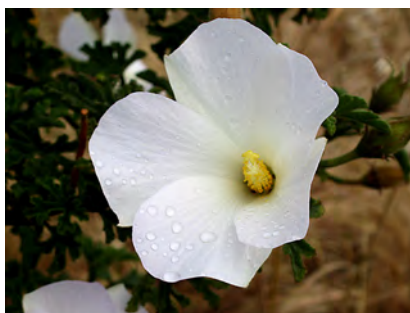
Hibiscus fryxelli var. *fryxelli* Photos: G. Harvey



The species pictured on the previous page were found when travelling along Gibb River Road of the Kimberley region in April 2002. The *H. fryxelli* came from a sandstone escarpment in the King Leopold Range and the *G. rotundifolium* from the entrance road to Drysdale Station, where it also grows as a prostrate plant on their grassed airstrip.

SOUTH AUSTRALIA

The genus *Alyogyne* is well represented in South Australia, the best known species being *Alyogyne huegelii* and *Alyogyne hakeifolia*. Study Group Member Dr Dion Harrison took the images below when visiting the Eyre Peninsula in South Australia in November 2007. In January 2003 an abundance of *Alyogyne pinoniana* were observed along the arid Lasseter Highway. This species also extends into South Australia. The *Alyogyne* group of plants, originating exclusively from Australia, have a high horticultural value and are enjoyed where suitable growing conditions exist around the world.



Lilac and white forms of *Alyogyne huegelii* growing beside the Lincoln Highway at North Shields, near Port Lincoln in South Australia.

Hibiscus insularis: Phillip Island Hibiscus

Colleen and Geoff Keena

Hibiscus insularis, commonly known as Phillip Island Hibiscus, is endemic to Phillip Island in the Norfolk Island Group. Phillip Island is a small island approximately 6 km south of Norfolk Island, over 1,000 km to the east of Australia. It occurs only as small isolated subpopulations.¹ The International Plant Name Index indicates it was recorded as long ago as 1833. This long recognition has been no guarantee of protection. While most references note the struggle against feral animals such as grazing pigs, goats and rabbits, these have not been the only threats. Discussing *H. insularis* in 1914, one visitor wrote "a few plants still remain on the island, but those we saw were in a most unhealthy condition, being covered with coccids, aphides, smuts, and other blights and pests. They were obviously maintaining an unequal struggle with an unfavourable environment".

The threats to the continuing survival of this species continue. The feral animals have been removed. Currently, the greatest threat is the invasion by African Olive (*Olea europaea* subsp. *africana*) which competes with Phillip Island Hibiscus for water and nutrients, and can grow as dense thickets which block the expansion of Hibiscus populations. As well, moth caterpillars (*Pectinophora scutigera* and *Asinoplaea cosmia*) have been found to inhabit the seed capsules and consume the seed. While this does not threaten current individuals, it reduces the ability of the species to produce viable seed to enable recovery and growth of the population. Soil erosion is yet another threat as it reduces the ability of native vegetation to recolonise areas. Further risk factors include cyclones that can be experienced in the early months of the year and the lack of vegetation which makes the island more vulnerable to erosion during periods of heavy run-off.

Finally, a study of the biology of Phillip Island Hibiscus found that there was no evidence that the adult population consisted of more than one genetic individual. If this is so, then the species is also at risk from extremely low levels of genetic diversity.

H. insularis is now protected by Australian Government legislation. As the number of mature individuals is extremely low, with the total population recorded during recent surveys numbering less than 50, this species is currently listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. With all the introduced animals now removed from Phillip Island, seedlings are now growing near the original bushes. Control and eradication of weeds is being undertaken and the Park management will undertake aerial layering to induce vegetative reproduction and promote recovery of the species.

Information on *Hibiscus insularis*

The following information is taken from the Department of the Environment, Water, Heritage and the Arts (2008) website.¹ This site provides detailed information, including references for the following.



Description: Large shrub or small tree to 2.5 m. Flowers are solitary and cream to light green coloured when they first open, with a dark magenta centre, but turn reddish or purple as they age. The lobed leaves have a shiny upper surface, and are 3–5 cm long and 2–4 cm wide.

Population Information: Propagated populations of the species are located at the Botanic Gardens on Norfolk Island and in Booderee Botanic Gardens (formerly the Jervis Bay annexe of the Australian National Botanic Gardens). In 2003, there were fewer than 50 mature plants of Phillip Island Hibiscus growing on Phillip Island. In 1988, there were two small patches with diameters of 10 and 50 metres. By 2001 a third patch (10 by 50 m) had become established. The natural population has increased from previously recorded population levels (13 plants in 1939, and only eight plants in 1963).

Habitat: The preferred habitat is difficult to determine given the impact of feral browsing animals on the Island. The Norfolk Island group has a subtropical climate. The volcanic soils are nutrient rich, friable and porous and do not hold moisture well.

Life Cycle: Phillip Island Hibiscus seedlings have very small leaves, which develop into a deeply lobed juvenile form. This stage may persist for up to 20 years before the adult leaf form is produced. Since flowers are only seen once the adult foliage is present, the species has a long generation time.

“There is a marked difference between the juvenile and adult foliage shapes, with tiny round leaves gradually changing over ten years or more to the large leaf commonly recognised as a hibiscus”. The flowers of Phillip Island Hibiscus grow in an upwards fashion at the ends of branches, with rarely more than one flower at the same stage on the same branch. Large amounts of nectar are produced. The flowers are female when they first open and one day later they enter the male phase (at which point they are capable of self-pollination). Over the next few days the flowers turn pink and close up, then wither. Separation of the male and female stages by one day increases the opportunity for outcrossing. This species is believed to be bird-pollinated, but it is possible that the original pollinating species has become extinct. It is capable of producing seeds by self-pollination, and is also capable of vegetative reproduction through stem-layering.

Propagation: Some references indicate that propagation can be from seed, however given the time for the life cycle, cuttings seem preferable. These can be firm wood cuttings taken in late spring.

Cultivation: While *H. insularis* has not fared well in its original habitat, cultivation has ensured its place in horticulture.

It is growing in the temperate house at Kew Gardens: “*H. insularis*, with its many little gentle flowers, appearing somehow generous in an ‘arms outstretched’ sort of way” and is described on French and Canadian sites.

Desirable Features: There are a number of features that make this plant desirable in horticulture: the dense bushy form; the tiny, neat leaves; evergreen;

disease-free; tolerant of wind; tolerant of full sunshine or partial shade; blooms are produced freely; changing colour of the blooms, with both coloured blooms at the one time; bright crimson stigma pads are very pronounced for a small flower; light pruning only is required to keep the plant in a nicely rounded shape; suitable for hedges; bird attracting because of the amount of nectar the flowers produce; easily grown; lack of prickles.

Variations In Flowering & Water Requirements According to Location: Jerry Coleby-Williams notes Sydney’s warm-temperate, sub-coastal humid climate is ideal for *H. insularis* because it is very similar to that of Phillip Island. He writes that the Royal Botanic Gardens, Sydney (RBGS) sent seed and cuttings from about nine adult plants growing in their collections to Phillip Island.² In Sydney, *H. insularis* plants at the RBGS were grown from 15 cm cuttings taken in late summer. Eighteen months later, after the plants had been in the ground for a year, they were 1.2 m high.³ We have seen *H. insularis* thriving and blooming freely in Port Macquarie, NSW. It performs well still further north in sub-tropical locations such as Brisbane and the Brisbane Valley. As well, it is recommended for planting in Mareeba in North Queensland. While it performs well across a range of locations, the actual location seems to mean differences in flowering and in water requirements.

Flowering: In ‘The ultimate Hibiscus?’, Jerry Coleby-Williams notes that in Sydney this species flowers for up to nine months of the year and while it flowers for an extended period, it doesn’t flower in one huge burst of blooms. However, in his garden in Brisbane, he notes the plants set loads of flower buds in readiness for show time in late winter to early spring.⁴ This is the same in the gardens where we have grown it, both in the western suburbs of Brisbane and in the Brisbane Valley. When plants start flowering, and this has been at least ten years in both gardens, then there is a stunning display at the end of winter and in early spring. No flowers are seen at other times.

Water requirements: It has been noted that *H. insularis* performs in all but poorly drained soils and that it needs to be regularly watered.

We suspect that there may be a difference between the water requirement of seed-grown and cutting-grown plants; possibly due to differences in the root architecture. We have found seed-grown plants perform quite well with no supplementary watering other than in extreme conditions. Our plants were watered only once even at the height of the recent drought yet the following flowering was stunning. Here cutting-grown plants droop in dry conditions.

Extreme Conditions: It has been noted that plants are damaged by frost. We have found they can survive light frosts but at around –5°C, the buds on exposed parts of the bushes are damaged and fall off although buds protected by overhanging foliage can reach maturity. As the plants can take both full sun and partial shade, providing protection from summer heat and the cold of winter may mean the plant will be less affected by extreme conditions.

Fertilising: Our plants are grown as part of an informal garden, with paths meandering among the plants. The plants are such a feature when in flower

that one path leads straight to one of the bushes. The plants are mulched with sugar-cane mulch but don't receive any fertiliser. However, if the plants were to be grown in a more formal manner, the fertilising regime documented by Jerry Coleby-Williams should be noted. He feeds his plants once a year with a pelletised, blended, organic fertiliser in autumn and once every month the plants get a foliar feed with liquid seaweed.⁴

Differences in cultivation and in the wild: As with other Australian hibiscus, cultivation means that the plant may perform quite differently from plants in the natural environment. In the wild this plant makes a largish, spreading shrub with beautifully layered branches and neatly serrated rows of tooth-edged, little leaves. Pruned as a shrub they reach 3 or so metres high and 4-5 metres wide. Allowed to grow as a tree they're often multi-trunked, with a broad arching canopy, reaching to 4 or so metres high and 4-5 metres wide. Storms can break tree branches when in flower.

New Uses: *H. insularis* is listed by Ergon Energy as a 'Plant Smart' tree suitable for Mareeba Shire. Les Beers and Jim Howie.⁵ have noted that the plant is ideal for growing in **coastal areas** as it is reasonably salt resistant. They also note that it makes a fine **hedge plant** and **windbreak**. Its use as a hedge plant to create a semi-formal, flowering hedge has been explored by Jerry Coleby-Williams. He has planted a hedge of *H. insularis* for some shade and shelter at the front of his garden and says that when the hedge is in full flower it stops traffic. He writes that there are many more side branches on this than on most other hibiscus species and that this is important when selecting a plant to create a hedge. His hedge has one annual cut after flowering that allows it to be shaped semi-formally and this cutting back means flower buds are initiated for the next season.⁴ The tips of the bushes need to be pinched out to encourage bushiness.³

Illustrations and Art: A specimen of *H. insularis* was sent from Norfolk Island to be identified at the Commonwealth Forestry Bureau in 1933. Its image appears online. The beauty of *H. insularis* has been depicted on stamps: a 1d stamp in 1960, 1c stamp in 1966, 35c stamp in 1984 and 45c stamp in 2002. Artists such as Ida McComish (1885-1978) and Halina Steele have painted *H. insularis*. McComish's 1937 painting is held in the National Library.

Summary: *H. insularis* is not just a beautiful plant for those of us who like to grow or illustrate native hibiscus. Its continued existence is due to 'cultivation, conservation and education', as valued by members of native plant societies.

References

- 1 Dept of the Environment, Water, Heritage & the Arts (2008) www.environment.gov.au/cgi-bin/sprat/public
 - 2 www.rbgsyd.nsw.gov.au/welcome_to_bgt/annan/the_garden/blooming_calendar/annan
 - 3 www.abc.net.au/gardening/stories/s204712.htm
 - 4 <http://jerry-coleby-williams.blogspot.com/2006/08/ultimate-hibiscus.html>
 - 5 Beers, L. & Howie, J. *Growing Hibiscus*. Kangaroo Press, N.S.W., 1985.
- A detailed list of references is available upon request from colleenkeena@pobox.com



Day 1 blooms



Day 2 blooms



Buds, Day 1, Day 2 blooms



Hibiscus insularis in a garden



Buds about to open



Seed capsules forming



Day 1 bloom



Trunks of plant at top

Hibiscus Cultivars

David Hockings

Any serious attempt at developing garden varieties from native *Hibiscus* by hybridization should be based on thorough knowledge of the characteristics of all the native species so that the most desirable features may be combined. That will necessarily require knowledge of the different sections of the genus, because hybridization is very difficult or impossible between species in different sections.

At present a number of species are poorly known and it can be expected that there are still species to be discovered. Furthermore, even within species there are more desirable forms, such as less prickly forms or more compact forms. To illustrate this point, *Hibiscus species* 'Barambah Creek' was discovered as recently as 1996 and besides its strong pink coloration, the form in cultivation lacks prickles, making it a logical breeding parent.

Besides colourful flowers, desirable characteristics include frequency and profusion of flowers, but also absence or minimum of spines as well as size or compactness of the plant itself.

To date, it appears that section *Furcaria* is the only section to have received much attention. This section includes both perennial shrubby species such as *Hibiscus heterophyllus* and *Hibiscus splendens* and annual or weak perennial species such as *Hibiscus meraukensis* and *Hibiscus radiatus* as well as rosella – *Hibiscus sabdariffa*.

One of the first hybrids to appear many years ago was between *Hibiscus splendens* and a yellow form of *Hibiscus heterophyllus*. It occurred spontaneously in three or four locations simply as a result of growing both species in close proximity. Indeed, the ease with which species cross pollinate is shown in the Queensland Herbarium records of natural hybrids between *Hibiscus divaricatus* and *H. heterophyllus*, *H. heterophyllus* and *H. meraukensis*, *H. heterophyllus* and *H. splendens*, and *H. meraukensis* and *H. splendens*. A nursery for some years sold a *H. splendens* x *H. heterophyllus* white form, from a roadside collection as *H. splendens*.

Hibiscus species 'Glen Geddes' (near Marlborough) is, I believe, a hybrid. Some 30 or 40 years ago when I was making regular trips to North Queensland, the place where it grew was a regular stopping point and it was usual at that stage to find pink, yellow and white seedlings in the one clump. This population has now more or less stabilised into a medium sized shrub with pink flowers. On a recent trip with Geoff Harvey we discovered a site (along the old Sarina Rd.) where the hibiscus population consisted of a similar mix of pink, yellow and white to what the 'Glen Geddes' population was 30–40 years ago.

Several people have dabbled in hybridization of native *Hibiscus* and produced some interesting and colourful varieties. Illustrated are some of my hybrids – see captions, all of which are growing on my property.



You will note that *sp.* 'Glen Geddes' x *H. divaricatus* may be prone to flea beetle attack, but it flowers profusely over a long period. The yellow *H. heterophyllus* from Camilla (south of Mackay) has fewer prickles hence its use as a parent. I have flowered several seedlings of *H. sp.* 'Barambah Creek' x *H. heterophyllus* from Camilla and they have all been yellow.



Hibiscus species 'Glen Geddes' x
Hibiscus heterophyllus yellow (Camilla)



Hibiscus species 'Glen Geddes' x
Hibiscus divaricatus



H. meraukensis hybrid possibly
H. radiatus or *H. acetosella*



H. species 'Barambah Creek' x
H. heterophyllus yellow (Camilla)

Our Favourite Hibiscus

Colleen and Geoff Keena

Introduction

It is now well over fifty years since we were captivated by our favourite native hibiscus, *Hibiscus heterophyllus*. Our interest has continued, particularly as we have watched locally occurring plants flowering profusely for prolonged periods, in spite of recent extended drought conditions in Brisbane.

We have given plants to friends in Melbourne and Cairns and the plants perform well in both these locations. *Hibiscus heterophyllus* was recorded in the Brisbane area in 1824 by Allan Cunningham, in 1828 by Charles Fraser and again in 1844 by Ludwig Leichhardt. Describing the vegetation along the Brisbane River, Cunningham noted that *Hibiscus heterophyllus* was very frequent on the immediate bank, "clothed with a profusion" of flowers. This tough, showy, rainforest plant is a member of *Hibiscus* section *Furcaria*. *Hibiscus* section *Furcaria* is perhaps best known for *Hibiscus sabdariffa*, Rosella, an introduced hibiscus. Other overseas members of this section include *Hibiscus acetosella*, and *Hibiscus radiatus*. Hopefully, the Australian members of this section will increasingly be recognised for their hardiness and usefulness.



Figure 1: Forms of *Hibiscus heterophyllus*: white, gold, pink

Early Experiences of Hibiscus Crosses

We still recall our first glimpses of the large white flowers of *Hibiscus heterophyllus* that lit up the edges of the rainforest as we negotiated precarious tracks on steep hillsides on the south coast of New South Wales. Having loved *Hibiscus heterophyllus* for so long, this was one of the very first plants we tried to acquire when establishing a garden in Brisbane in 1975.

However, before we were able to obtain a plant of *Hibiscus heterophyllus*, a friend with a nursery begged us to take a plant labelled *Hibiscus divaricatus* x *H. splendens* because it was outgrowing its pot. Initially it was the only native hibiscus in our garden and looked just like *Hibiscus divaricatus*, with the green foliage, gold blooms and growth of this species (See Fig. 2).





Hibiscus divaricatus* x *Hibiscus splendens

In the late 1970s, a seedling appeared underneath this hibiscus. The seedling had grey foliage and pale apricot blooms which were larger than the blooms of the parent. We realized that the label on the parent plant was accurate. It really was a cross as the seedlings had characteristics of the pollen parent, *Hibiscus splendens*. The attached photos show blooms similar to our first seedling. This was our first experience of hibiscus hybrids.



Figure 2: *Hibiscus divaricatus* (left), *Hibiscus splendens* (right) and F1 hybrid seedling (centre) showing features of *Hibiscus splendens*

Our second experience of hibiscus hybridisation took place when we moved to a larger garden in 1981. Our bush block was near an endemic stand of *Hibiscus heterophyllus*. By then, we had managed to acquire a plant of the gold-flowering form of *Hibiscus divaricatus*. To our horror, the patch of nearby white *H. heterophyllus* began to include bushes with lemon blooms. The plants were almost 200 metres away but this was not too far for whatever had pollinated these plants with pollen from our *Hibiscus divaricatus*. Fortunately the lemon “*H. heterophyllus*” were cleared for housing so they did not contaminate other locally occurring stands of native hibiscus.

These experiences taught us some of our early lessons with crosses in section *Furcaria*.

1. Seedlings may have characteristics that are quite different and possibly, although not necessarily, superior to characteristics of the parents.
2. Native hibiscus cross readily and crosses near stands of bush with endemic species may have unforeseen consequences.

Just how readily species in this section of hibiscus cross hybridise was highlighted when seed of a one metre annual form of *Hibiscus meraukensis* resulted in a 3 metre perennial with lemon blooms. The pollen donor was *Hibiscus divaricatus* and the seedling was named Hibiscus ‘Ian’s Lemon’ in memory of Ian Waldron.



Figure 3: Female parent *Hibiscus meraukensis* (left), male parent *Hibiscus divaricatus* (right) and F1 hybrid seedling, *H. 'Ian's Lemon'* (centre)

Records of Hibiscus Crosses

Prior to our accidental experience of crosses, Lyn Craven had recorded information on *Hibiscus* ‘Wirruna’ in *Australian Plants*, June 1971.¹ By crossing a pink *Hibiscus splendens* and a yellow-flowering form of *Hibiscus heterophyllus*, he had a beautiful long-flowering plant with salmon blooms.

Another cross has been recorded by Jan Sked in ‘Planting a Native Garden’.² *Hibiscus* ‘Pink Ice’, is a hybrid between *H. splendens* and white *H. heterophyllus*. This plant is one I would include in any collection of hibiscus.

Both *Hibiscus* ‘Wirruna’ and *Hibiscus* ‘Pink Ice’ demonstrate one possible feature of crosses, namely seedlings can flower longer than the parents. I have found that this flowering period can be extended further when plants of seedlings are grown from cuttings.

Development of Hibiscus Crosses

Efforts at hybridisation have now become intentional:

Small growing plants



Hibiscus ‘Apricot Mist’



Hibiscus ‘Citrus Mist’ bloom



Different colours or forms of blooms



Hibiscus 'Desert Haze'



Hibiscus 'Pete's Blush'

Plants with long-flowering for cordial, syrup, jam from blooms³



Hibiscus 'Montburg Pink'



Hibiscus 'Ian's Cream'

Plants harder than parents but with desired features, e.g. colour



Hibiscus 'Gold Mist' gold of *H. heterophyllum*



Hibiscus 'Cha's Mist' pink of 'Glen Geddes'

Conclusion

Within *Hibiscus* section *Furcaria*, we have found great variation in plants such as variation in flower size, flower shape and the amount of colour on the margins of the flower and in the colour of the stems and branches, as well as variation in flowering times, resistance to pests, diseases and predators and hardiness in the garden (i.e. tolerance to severe drought, water logging and frost).

We believe that we should be choosing from superior forms and propagating or hybridising from these. Not only will an unattractive plant occupy the same amount of space as one selected for superior characteristics, but poor specimens will hinder acceptance of the wonderful Australian species of plants within this section of *Hibiscus*. It is important to note that a seedling cannot be judged accurately until the plant has been grown from a cutting and trialed in the garden as a cutting-grown plant.



Hibiscus heterophyllum form flowering in March;
other local forms do not bloom after January

Hibiscus from section *Furcaria* are so noticeable that both *Hibiscus heterophyllum* and *Hibiscus splendens*⁴ were featured in early written records. Selected forms or crosses can provide a food source for people and fauna and have the ability to survive in the toughest of conditions. It is hoped that increasing interest will not only make these beautiful, useful and tough plants more readily available but that the landscaping potential of this long ignored family of plants will gain greater recognition in Australian horticulture.

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2. J. M. Sked, L. S. Smith, E. Prescott, *Planting a Native Garden in the Subtropics*, Pine Rivers Branch, Society for Growing Australian Plants, Queensland Region Inc., 6th Edition, 1998. 1st edition 1976.
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Why I Joined the Hibiscus and Related Genera Study Group

Fred Westerman

I will attempt to answer why a successful *Hibiscus rosa-sinensis* breeder is turning to Native Hibiscus. Today most serious *H. rosa-sinensis* breeding is done in America, Tahiti, Brazil and other parts of the world and our strict quarantine procedures mean that it is difficult to obtain the break-through hybrids necessary to the world leaders. However, if we concentrate on the native Hibiscus, quarantine works for us rather than against us

Secondly water-wise plants are becoming increasingly important with water restrictions and El Nino/La Nina events coupled with global warming. Surely we should be using plants that have evolved over millions of years to be adapted to our climate without the necessity for watering. Fertiliser costs have doubled with the current global economic downturn so why not use plants that have survived the worst drought in 100 years without the need for watering or fertilising?

If you go to www.internationalhibiscussociety.org/hivln19-1.htm there is an article Volume 4 no. 2, "From the Archives" by Alonzo Gartney

"There is no doubt that Hibiscus follow very closely, the laws of heredity as laid down and developed by the Mendelian theory, and it is this fact which makes the Hibiscus a valuable plant for the scientific worker".

However, today, *H. rosa-sinensis* does not appear to follow strict Mendelian rules. Could this possibly be because Gregor Mendel used pure breeding varieties and Alonzo Gartney was dealing with species or near species?

Now pure breeding varieties are most easily made by self crossing for a number of generations. Last time I checked there were only six registered self crosses out of more than nine thousand registered cultivars.

Native Hibiscus self cross easily so within a few generations we could see breakthroughs particularly in the F2 generation.

I intend to test these assumptions and move from pollen daubing with *H. rosa-sinensis* to actively directed breeding with native Hibiscus.

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Field Trip to Record and Collect Seed of Hibiscus and Related Genera

Geoff Harvey

The writer and David Hockings conducted a Field Trip to central and northern Queensland during March/ April 2009.

Geoff Simmons, a long time stalwart of Society for Growing Australian Plants, Queensland Region Inc. (SGAP) bequeathed a substantial amount of money to the Society "for the purpose of encouraging or providing for the collection and distribution of seeds from plants native to Queensland".

When the Society decided to apply these funds by offering grants for research projects that meet the conditions of the bequest, the leader of the Hibiscus and Related Genera Study Group, applied and was the first applicant to obtain a grant.

Notification of the Grant Approval was received on 19/1/09 and planning for the trip was immediately commenced. As the emphasis was to be on seed collecting, the March/April time frame was selected as it was considered plants would be mature following the monsoonal wet season.

All the known localities for Hibiscus were obtained from State Herbarium Records and pin-pointed on a gridded map for each species. Having done this, it was then possible to draw up an itinerary to bring us into contact with the most likely sites.

Apart from seed collecting, it was decided that a photographic record of the species in bloom was important, as in some instances no images could be found in publications or on the internet.

Paper collection envelopes were obtained from the Regional SGAP along with a GPS and a form designed to record all relevant information at each collection or observation site.

It was with great anticipation and some excitement that we headed along the Bruce Highway to Maryborough on 22/3/09. Upon reaching the bridge over the Mary River at Maryborough, we expected to find *Hibiscus diversifolius* at the waters edge. The river was very high, probably from a combination of flooding and high tide, with only the much taller growing *Hibiscus tiliaceus* observed partly submerged amongst the mangroves.

The main destination for day one was Childers, where a Malvaceae 'hot spot' had been identified along the Booyal Road leading towards Biggenden. None of the *Hibiscus divaricatus*, *Hibiscus normani* or *Hibiscus meraukensis* from this potential site could be located. Grasses, after excessive summer rainfall, provided a massive cover, perhaps concealing Hibiscus or preventing them from growing. The effect from hot grass fires during recent seasons could be another reason.



On the second day, whilst proceeding to Moura via Eidsviold and Theodore, very little was found, apart from *Hibiscus sturtii* and plenty of weedy *Malvastrums*. We admired extensive paddocks of the cultivated cotton at Theodore nearly ready for harvest.

Things looked up on Tuesday 24/3/09 when we spotted a healthy specimen of *Gossypium sturtianum* var. *nandewareense* (Derera) Fryxell, growing by the roadside as we approached the Expedition Range, whilst driving to Springsure. Lyn Craven was later to tell us that the name was now invalid as genetic analysis does not support the recognition of any infraspecific taxa for *Gossypium sturtianum*. We are retaining the name for the present as it still appears in the Australian Plant Name Index.

Whilst at Springsure, we met up with a knowledgeable plant person, Beverley O'Keeffe, who had produced an informative booklet titled "Some Shrubs and Trees of Springsure District Central Queensland". She had young plants of *Gossypium sturtianum* var. *nandewareense* growing in her garden of native plants.

A drive to the Springsure Lookout on the Mt. Zamia Range presented us with *Gossypium australe* and *Hibiscus meraukensis* growing right to the edge of the elevated lookout. At 24-03S, this would be the most southerly locality I have seen *H. meraukensis*. Whilst at Springsure, we failed to locate *Hibiscus brachsiphonius* due to thick growth of long grass, nor did we find *Hibiscus heterophyllus* reported from a site at the foot of the range.

Continuing northwards via the Aecturus and Comet roads, the highlight was finding the botanically unnamed *Hibiscus species* (Emerald S.L. Everist 2124). It is a handsome Hibiscus to one metre tall, with white flowers of a good size (see image) and appears to be an annual belonging to the *Bombicella* section. As it has been found over quite a large area from Charleville to near the coast the prospects of growing it under cultivation look very promising.

Our itinerary was interrupted considerably from being unable to secure accommodation in the mining towns of Middlesmount and Dysart. This forced us to miss the Hibiscus 'hot spot' of Glenden, but we did find *Hibiscus trionum* var. *vesicarius*, *Hibiscus krichauffianus* and one unknown Hibiscus still with Lyn Craven awaiting identification.

We appreciated being well looked after at Bowen by Study Group members, Walter and Judy Willcox. We were able to see various sites where an interesting species of Hibiscus, we are referring to as *Hibiscus species* 'Euri Creek', is found. It has large white blooms with a very dark petal spot and at Bowen reputedly flowers all year round (see image).

Northwards from Bowen we located *Hibiscus vitellus* beside the steep road to Inkerman Lookout, south of Home Hill.

Turning inland we reached Charters Towers and Pentland, seeing plenty of *Hibiscus meraukensis* and *Gossypium australe*, as well as *Hibiscus trionum* var. *vesicarius* and *Abelmoschus ficulneus*.

Attempting to travel northwards from Hughenden along the Porcupine Gorge Road was not a success as the road disappeared under a sea of flood water. All was not lost as we found a nice plant of *Hibiscus pentaphyllus* and a large bloomed *Abutilon leucopetalum* or is it *A. calliphyllum*?

We had to back-track all the way to Pentland and Charters Towers before heading north again. This paid off handsomely as we found nice specimens of *Hibiscus panduriformis* and some superior forms of predominately pink *Hibiscus meraukensis*.

Upon reaching the Atherton Tablelands we met up with Garry and Nada Sankowsky, as well as Peter and Ann Radke of Yaruga Native Plant Nursery. These helpful people are walking encyclopaedias when it comes to plants of their area and Cape York Peninsula. We came away with loads of seed including *Abelmoschus moschatus tuberosus*, *Hibiscus forsteri*, the purple *Hibiscus diversifolius* from the Atherton Crater Lakes and a rare *Hibiscus divaricatus* from Rocky River near Coen.

After reaching the Palmer River not far from Cooktown, we turned for home as the Cape would not be open to traffic until July. Also the Gulf was 'no go' and had to be put on hold for another occasion, possibly May/June 2010.

At Innisfail we met up with Bernard Crowe (Study Group Member) and had an interesting discussion about his 'neck of the woods'.

Our next stop was at Taylors Beach, where our hosts Peter and Sue Hermann had a productive garden comprising two varieties of *Abelmoschus manihot*, two varieties of *Hibiscus sabdariffa* and *Hibiscus acetosella*, all used as salad greens or for cooking.

After driving through Townsville we located *Hibiscus forsteri* in Woodstock Road and later heard of *Hibiscus normani* growing in the mountains beyond. Too much of a climb for us travellers in our 70's and 80's!

Back at Bowen with the Willcox family we met the President of the Whitsunday-Burdekin Branch of the Australian Hibiscus Society, Neil Smith, who has since joined our Study Group. He operates a crane and in the course of his travels spotted a new species of Hibiscus with large orbicular leaves along a road turning off from near Collinsville to the Burdekin Dam. Next day with great anticipation we drove about 70 km to the spot indicated and found a population of *Grewia* sp. in a floodway that did indeed look like a Hibiscus from a distance.

After being warned about a plague of King Brown Snakes following all the rain we moved south again to Camilla, where the lure of large yellow bloomed *Hibiscus heterophyllus* outweighed the fear of snakes as we waded through chest high grass and undergrowth.

Further down the track we looked at many interesting hybrids of *Furcaria* section *Hibiscus* in the vicinity of Marlborough. David Hockings has written about them in his article.

We found handsome orange bloomed *Hibiscus divaricatus* on our way from



Rockhampton to Mount Morgan and impressive tall growing specimens of the same species after leaving Biloela heading towards the coast.

Subsequently more seed of *Hibiscus splendens* and *Hibiscus tiliaceus* was collected at Hervey Bay and *Hibiscus normani* from David Hocking's garden at Maleny.

This trip is considered to have been very successful as we found the seed of most species and have since distributed seed to nine members of our Study Group in Queensland, New South Wales and the ACT.

Next May/June it is hoped to continue this study/seed collection in western Queensland and the Gulf that was inaccessible this year due to a very active wet season.



Hibiscus sp. (Emerald S. L. Everist 2124)
Photo: D. Hockings



Hibiscus species 'Euri Creek'
Photo taken at Bowen, Queensland, April 2009
by Geoff Harvey



Hibiscus tiliaceus Image: Geoff Harvey

Found along the tropical coastline and islands to Port Macquarie in N.S.W. Tree and bloom photographed at Maroochydore, Queensland mid-June 2009.



Malvaceae from the Garden to the Table

Colleem and Geoff Keena, Queensland

1. OUR EXPERIENCES

We both grew up with family who used every available space to grow food. At that time, food plants were mostly confined to the garden in the backyard.

Our Early Gardening Experiences

We were influenced both by our family background and also by time spent overseas in a tropical climate. When we were first married, the food mainly came on an irregular boat service. Food was canned or frozen so, if we wanted to eat fresh food, we had to grow it. Two Malvaceae plants were readily available. These were *Abelmoschus manihot* and *Hibiscus sabdariffa*. We learnt different ways of preparing these as we shared plants and cooking methods with friends. Our initial experience of *Abelmoschus manihot* was as a green vegetable cooked in fresh coconut cream. The first way we learnt of preparing *Hibiscus sabdariffa* was as a substitute for sauerkraut. Only later did we make a syrup that could be used over fresh fruit or diluted as a cordial.

Malvaceae in a Sub-Tropical Climate

When we returned to Australia, we still wanted to grow as much food as was possible. However, obtaining plants we had grown, such as *Abelmoschus manihot*, proved difficult. We obtained a form with a beautiful bloom but the leaves were scarcely edible. Eventually we tracked down good edible forms. We started to look for other ways to use the leaves, especially as we were aware of how nutritious they were. We now use the leaves in a rice pie which can be eaten hot or cold. Although *Hibiscus sabdariffa* is not native to Australia, we have continued to use it to make cordial and syrup.

We became interested in bush foods, particularly plants that grew in our local area. We saw references which indicated that native hibiscus had edible shoots, flower buds and roots. We didn't want to dig up our plants to try roots and as we already had *Abelmoschus manihot* for shoots, we decided to explore what could be done with the flower petals.

We had a recipe for microwave berry jam that just used the fruit, lemon juice and sugar. We adapted this recipe to make jam from the petals of *Hibiscus heterophyllus* and we enjoyed it. Not surprisingly, the flavour was reminiscent of jam made from calyces of *Hibiscus sabdariffa*. Given our long experience with syrup made from *H. sabdariffa*, we adapted our jam recipe slightly and then had *Hibiscus heterophyllus* syrup. As we don't eat much jam, we kept modifying our basic recipe and now mostly make a cold drink from *Hibiscus heterophyllus* petals. These recipes for native hibiscus jam, syrup and drink can be found at <http://www.hibiscus.org/culinaryexisting.php>

As people tried the hibiscus recipes, we were asked more frequently to prepare 'bush food'. This was easy in spring when *Hibiscus heterophyllus* is in full flower





in our area but we didn't know what to do when asked to prepare food for 100 people in May.

This led to tasting *Hibiscus* crosses then in flower. We soon found that crosses with pale blooms were tastier than those with brightly coloured petals and new crosses in paler colours are now always checked to see how they taste, particularly those with long flowering periods.

When we moved to this area (Brisbane Valley, Queensland) almost ten years ago, we decided to grow only plants that gave the best return for the space they occupied. The new garden was not large enough to grow plants not high on our list of taste treats or to include plants that cropped for a short time unless they could be used to make syrup, preserves etc. Where possible, we wanted plants with more than one function, e.g. a plant for screening that is also edible. We also wanted plants that are hardy as our plants receive no supplementary watering. They need to cope with temperatures from -6°C to 46°C . As it only takes as much space to grow a superior form as an inferior plant, we now grow only the best forms of *Abelmoschus* and of *Hibiscus* species and crosses.

Conclusion



Hibiscus heterophyllus bloom

We believe that the ideal is for our garden to look after us rather than for us to look after it. By choosing the best forms of edible species suited to our local conditions, we derive double enjoyment from our garden. We enjoy the blooms, birds and insects. We also enjoy the results when the plants reach the table. *Abelmoschus manihot* and *Hibiscus heterophyllus* and native *Hibiscus* seedlings with tasty blooms are at the top of our must-have plants. We no longer relegate edible plants like these to the garden in the backyard.

DISCLAIMER: Be sure plants are accurately identified. Exercise caution with unfamiliar foods. Although the above foods are usually considered safe, adverse reactions in particular individuals cannot be ruled out.

2. OUR EXPERIENCES Dion and Joyce Harrison, Queensland

As a child, Dion grew up in South Australia and his elderly next-door neighbours had an abundance of fruit trees. He spent many school holidays helping out with picking the fruit and making preserved fruit or jam (including plum, apricot, nectarine, and his favourite – fig). As a child, Joyce was raised in Taiwan and there was always an enormous diversity of fresh and often 'native' produce that she could purchase daily from the local markets.

Now we have a young family of our own and live on a 1066 m² block in the far western Brisbane suburb of Karana Downs. Our house is two storey leaving us with a good size yard for our two young boys Nathan (age 5) and Alexander (age 3) to run around and play among the large established shade trees.

We really love hibiscus and they dominate the sub-tropical landscaping which includes a mix of exotic and native species. There is also a dedicated rose bed to supply fresh cut-flowers for Joyce, and we have a 4 x 4 metre raised-bed vegetable garden which is very productive all year round.

We were first introduced to the culinary value of Hibiscus by Colleen and Geoff Keena's refreshing hibiscus cordial made from *Hibiscus heterophyllus* flowers. The kids particularly enjoy helping out in the vegetable garden, and they love to help pick Rosella (exotic species, *Hibiscus sabdariffa*) and load it into the back of their toy dump-truck and wheel-barrow, ready for making jam. We also make our own jam from the native *Hibiscus heterophyllus* flowers. Having both species gives some variety in the jam you can make, and towards the end of the season, we mix Rosella calyxes with flowers of *Hibiscus heterophyllus* to get more jam.

The particularly fruity flavour of the *Hibiscus heterophyllus* flowers reminds us of apricot jam although it is still different, and would be suitable for mixing with other fruits for jam making - this is something we will experiment with in the future. We also make syrup from *Hibiscus heterophyllus* as the flower numbers decline, and become insufficient to make jam. At first we were amazed at how much jam you can make from relatively small ornamental plants, as opposed to the typical fruit tree.

Our favourite uses of the jam and syrups are varied. Dion likes to mix the jam or syrup with vanilla yoghurt for an exquisite treat, or simply have jam with cream on a slice of home baked bread. The kids enjoy the Hibiscus syrup on pancakes for breakfast, or with custard and fruit, or as topping on vanilla ice cream. The best part for us is that you can grow these plants as a stunning ornamental feature in a normal garden setting with minimal fuss and still enjoy the fruits of your labour (literally). Who said you can't have your cake and eat it too!



Jam from *Hibiscus heterophyllus* petals



Malvaceae in Melbourne

1. Keith and Ros Riley

We obtained a number of Malvaceae in the winter of 2006. These were a *Hibiscus heterophyllus* x *Hibiscus divaricatus* cross called 'Montburg Pink' and three forms of *Alyogyne huegelii*: a cross called 'Carole's Choice', a pink form with a tulip-shaped bloom and *Alyogyne* 'West Coast Gem'. The plants remained in pots until spring of 2007. Three plants were planted into heavy clay soil which becomes water-logged after rain. They occasionally received soil conditioner in their first summer. During the Melbourne summer of 2007/2008, there was insufficient rain to keep them alive. The only water for the hibiscus and two of the *Alyogyne huegelii* plants was washing machine greywater. The Hibiscus plant grew rapidly to 1.5 m by 1 m. For several months, it had a couple of new flowers most days. These opened later in the day than the *Alyogyne* blooms and remained open till dusk. During 2008, the only fertiliser was possum droppings, which were frequent in the area of the hibiscus. The water from the washing machine now contained a eucalyptus product labelled suitable for plants. Despite the heat of summer, the hibiscus had an amazing number of blooms. It is still growing well, even in mid-winter.

Two of the *Alyogyne huegelii* had the same conditions and treatment as the hibiscus. None were sprayed. Both *Alyogynes* received morning sun. There was some variation in growth and flowering, with the plant that received more sun growing more strongly to 2.1 m and flowering more profusely. It is currently, in July 2009, starting to flower. The *Alyogyne* that was shaded from above is less dense and is 1.5 m. It blooms in spring. The third *Alyogyne*, *Alyogyne* 'West Coast Gem', was planted into builder's sand. It quickly reached 1 metre and had large blue flowers which were so heavy they weighed the branches down. In January 2008, the plant 'died' but was not removed. Recently the plant had many new shoots and is currently, in mid-winter 2009, in bloom. It is still 1 m high but is very bushy with many buds. It was watered with rain caught in buckets. When this was not available, the plant was watered with bath water which contained 'normal' soap. The flowers of the three *Alyogynes* last more than one day, in contrast to the hibiscus blooms which only last for one day. Despite the harsh conditions, these Malvaceae provide colour in our garden over a long period.



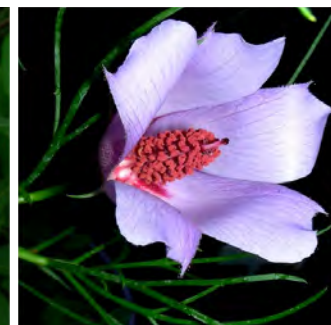
Alyogyne 'Carole's Choice'



Hibiscus 'Montburg Pink'



Hibiscus heterophyllus



Alyogyne hakeifolia
Photos R. Riley

2. Stephen and Wei Qi Riley

Some years ago, we started growing a native hibiscus, *Hibiscus heterophyllus*, yellow form, which is available in local nurseries. This plant is in the front garden against the brick wall of the east-facing garage. It grew so well that we added *Hibiscus* 'Wirruna', also available locally, close to the first hibiscus but on the side fence. Both plants are growing in inhospitable conditions. The plant against the garage receives radiated heat from the brick wall behind it and *Hibiscus* 'Wirruna' is planted near a spruce tree which dries out the soil around it. In spite of these tough conditions, both plants are doing well. They both start flowering in spring and continue flowering until early winter, thus providing a long period of colour.

We then added five *Alyogynes* to our garden, both *Alyogyne huegelii* and *Alyogyne hakeifolia*. Three have purple blooms and two have white flowers. There is no difference in performance between *A. huegelii* and *A. hakeifolia*. All five *Alyogynes* were planted in heavily shaded areas of the garden, either along the back fence or along the other side fence. Nothing else had been able to survive along that side fence. The *Alyogynes* were planted as replacements for Camellias that had died. The *Alyogynes* have not just survived where Camellias had died but all are doing well, coping with soil that is dry in summer and in positions that have limited access to sun, especially in winter. However, we have found that these plants flower less than *Alyogynes* growing in full sun in nearby gardens.

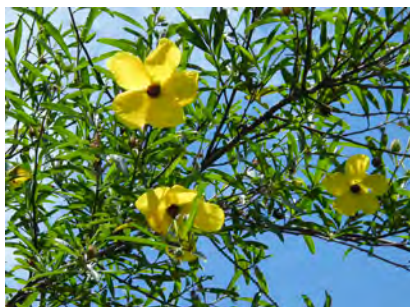
All garden beds are lightly mulched with bark chips and leaf mulch. None of the plants has had any fertiliser and each plant has only received a small quantity of tank water two or three times during summer. The *Alyogynes* bloom when there are no blooms on the Hibiscus so growing both adds colour to the garden for much of the year. Even more important to us, though, is that both the native hibiscus and the *Alyogynes* cope in conditions where it is either difficult to get plants to grow or even where we could not get anything else to grow.

Understanding the *Hibiscus Furcaria* Section in Australia

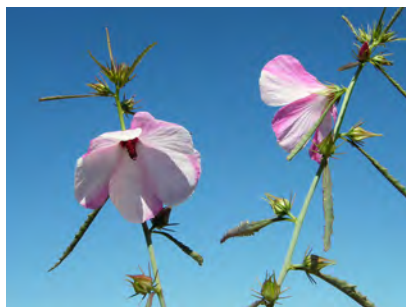
Geoff Harvey, Leader of the Hibiscus & Related Genera Study Group

This brief write-up is to help Hibiscus enthusiasts, who may wish to grow, and perhaps breed, the different species and forms of *Hibiscus* L., section *Furcaria* D. C. This interesting group differs from other Hibiscus in that each calyx lobe has a prominent thickened midrib and two thickened marginal ribs (Hochreutiner 1900)

In Australia there are 28 named indigenous species of *Hibiscus* section *Furcaria*, whilst there are more than 100 distributed around the world in many tropical and subtropical localities. The *Hibiscus* section *Furcaria* growing in the Australian eastern localities seawards of the Great Divide, exhibit all the desirable characteristics, which if combined could result in spectacular small plants for modern gardens. Please note that all endemic Australian species that have been studied are $n = 54$ (allohexaploid), including *H. meraukensis* Hochr.



Hibiscus divaricatus from Marlborough Central Queensland



Hibiscus meraukensis from near Charters Towers Photos: Geoff Harvey

(1) Endemic *Hibiscus* section *Furcaria* species that occur in the states of Queensland and New South Wales.

H. heterophyllus Vent. Chromosome number $n = 54$ (hexaploid)

H. splendens Fras. ex Grah. Chromosome number $n = 54$ (hexaploid)

H. divaricatus R. Grah. *H. saponarius* Craven *H. forsteri* F. D. Wilson *H. species* ('Barambah Creek' P. Grimshaw + 2484) *H. species* (Emerald S. L. Everist 2124) To be botanically described and named.

(2) *Hibiscus* section *Furcaria* species that occur in Queensland as well as other Australian States and/or Countries.

H. meraukensis Hochr. (indigenous) Chromosome count $n = 54$ (hexaploid)

Occurs in tropical Queensland to as far south as sub-tropical Childers and Springsure, WA, NT, Torres Strait Islands including Thursday Island, the south coast of Papua New Guinea and Irian Jaya as well as Malesia Floristic Region. Merauke, the place that this species is named after, is located on the south coast of Irian Jaya about 70 km west of the border with PNG.

H. zonatus F. Muell. Occurs mainly in the Northern Territory, rarely in Western Australia and Queensland's western gulf region.

H. diversifolius Jacq. (indigenous) Chromosome number $n = 72$ (octaploid) A pantropical species that grows in wet locations along the east coast of Australia. It differs genetically from our endemic species and is of extra-African distribution.

H. radiatus Cav. Chromosome number $n = 36$ (tetraploid) also $n = 72$ ref: <http://www.malvaceae.info/Biology/Chromosomes.html> Occasionally seen in Queensland gardens and disturbed land where it grows as an annual or bi-annual. It is apparently of Indian origin, occurring in Burma, Vietnam, Malaya and Indonesia.

H. acetosella Welw. Chromosome number $n = 36$ (tetraploid). Probably of African origin, it is widely distributed in tropical and sub-tropical climates of the world.

H. sabdaffa L. Typical chromosome number $n = 36$ (tetraploid) with forms having $n = 18$ (diploid) and $n = 72$ (octaploid) also reported – ref : Dr. Dion Harrison, Univ. Qld. pers. comm.. Often grown in gardens for 'rosella' jam making and the leaves in Asian type cooking. It may emerge on disturbed land and is naturalized in far northern tropical Queensland.

H. cannabinus L. Kenaf. Experimental crop in the Burdekin area of Queensland.

(3) Endemic *Hibiscus* section *Furcaria* species that occur in WA and NT.

H. stewartii, *H. reflexus*, *H. squarulosus*, *H. minutibracteolus*, *H. fryzellii* var. *fryzellii*, *H. fryzellii* var. *mollis*, *H. superbus*, *H. aphelus*, *H. zonatus*, *H. kenneallyi*, *H. brynessii*, *H. marenitensis*, *H. inimicus*

H. aneutha, *H. symonii*, *H. riceae*, *H. petherickii*, *H. fallax*, *H. bacalusius*, *H. arnhemensis*, *H. thegaleus*, *H. menzeliae*

Please note that *H. mustiae* is a form of *H. zonatus* and that *H. australensis* is not an Australian species, being confined to the Austral Islands in the Pacific.

(4) *Hibiscus* section *Furcaria* species that occur in Western Australia and/or N. T. as well as other Australian States and/or Countries.

H. meraukensis Hochr. Chromosome number $n=54$ (hexaploid) (indigenous)

H. zonatus F. Muell. Recorded also in the western part of the Burke Pastoral District of Queensland including islands of the Gulf.



H. sabdariffa L. (naturalized). Typical chromosome number $n=36$ (tetraploid)

H. cannabinus L. Kenaf. Experimental crop. Chromosome number $n=18$ (diploid). A number of edible uses recorded as well as for fibre.

(5) Hibiscus Furcaria species from tropical north Queensland.

(a) Both *H. heterophyllus* and *H. splendens* reputedly extend into the tropics as far as the Lockhart River about 13 degrees south of the equator. Future research could determine that they are varieties of *H. forsteri*.

(b) The most northerly collected *H. heterophyllus* that I have grown came from Etty Bay south of Innisfail.

(c) The most northerly collected *H. splendens* that I have grown came from Glen Geddes about 22.5 degrees south of the equator. It was initially collected by David Hockings and myself during April 2008. It has many elongated epicalyx segments in a double row and a red peduncle.

(d) During a recent field trip, fine specimens of *H. divaricatus* originating from Rocky River near Coen were seen under cultivation at Tolga on the Atherton Tablelands. Previously this species had been identified as *H. heterophyllus*.

(e) From Euri Creek at Bowen, a locally well known form that resembles *H. heterophyllus* in some respects is now growing well in south east Queensland.



Hibiscus divaricatus from Rocky River near Coen, Cape York Peninsula.
Photo taken at Tolga: Geoff Harvey

(f) *H. meraukensis* is common in the tropics and has evolved into several distinct forms. It is found on off-shore islands of Queensland and the Gulf as well as the arid inland.

(g) *Hibiscus saponarius* Craven. Plants were grown from seed collected by David Hockings on a trip to Cape York in 2003. Though they grew and bloomed quite well in south east Queensland, no seed was obtained and sadly the plants succumbed to winter conditions. This species is known from only two populations along the road from Musgrave to Edward River on Cape York Peninsula. The Queensland Herbarium list a specimen from the N. T. It is regarded as being most closely related to *H. meraukensis* Hochr.

(h) *H. forsteri* F. D. Wilson. Plants were raised from seed obtained from David Hockings on his trip to Cape York Peninsula in 2003. The attractive white flowers fully open with a good texture and have a pink flush on the outer margin of the petal. Blooms can reach 12 cm or more in diameter.

(i) *H. zonatus* F. Muell. The Queensland Herbarium hold five specimens collected from the western part of the Burke Pastoral District. A good image of *H. zonatus* on the 'Australian Plant Name Index', Australian National Herbarium is the only image I can find. It is noted that a Darwin Nursery in the NT sells plants and seed of this species.

(j) *Hibiscus radiatus* Cav. This species is believed to be of Indian origin and is widely distributed in the tropics. It was collected in the 1950's by Keith Williams and illustrated in his book 'Native Plants of Queensland Vol. 1' page 155. He states that the parent plants were growing on the sides of rough, rocky gullies between Mary Kathleen and Mount Isa in Queensland. It turns up occasionally in land fill, cultivation and disturbed soil. As a garden plant, it blooms autumn/winter and seeds profusely.

(k) *Hibiscus diversifolius* Jacq. The purple form was recorded by Keith Williams and illustrated on page 155 of his book 'Native Plants Queensland Vol. 1' under the name of 'Euramoo Mallow'. Apart from the Atherton Tablelands crater lakes, other localities of this form are not known to the Study Group. Another form of *H. diversifolius* originated from seed supplied by Doug Phillips, the former Study Group Leader. It has been grown by Colleen Keena since about 1980, who gave it the name 'Colour Magic' as it is now known in the nursery trade. This form appears to be virtually sterile, even when hand pollinated. In winter the bloom colour becomes pale yellow/off white whilst in spring it returns to pink and finally purple.

The common yellow form is recorded from tropical Queensland, but is much more common south of about Fraser Island. It is in full bloom during winter/spring.

(l) *H. acetosella* Welw. This species is commonly seen in plant sales and is frequently grown for the red foliage contrast and as an addition to Asian style cooking. It is considered to be of African origin and is widely distributed in warm climates of the world.





(6) *Hibiscus* section *Furcaria* from sub-tropical and temperate climates of Queensland and New South Wales.

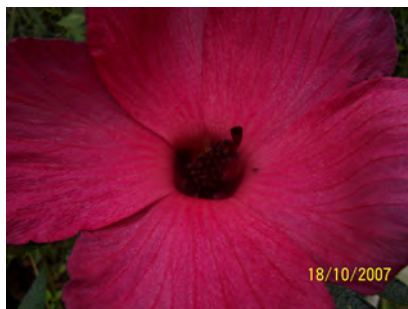
(a) *Hibiscus heterophyllus* Grows as far south as Kiama and is common east of the Great Divide. There are so many forms of this species that observing, collecting and breeding them could keep a Hibiscus enthusiast occupied indefinitely. Near the coast along tidal streams and in gullies etc., the typical form is a bushy wide leafed plant. In the hinterland foothills of mountain ranges, tall specimens with narrow leaves reach 6 to 7 metres growing in competition with larger trees on the edge of rain forest and amongst dry eucalypt forest. It is often seen along forestry tracks that have been opened up for logging as well as roadsides. A book titled 'Wollongong's Native Trees' by Leon Fuller has several references to *Hibiscus heterophyllus*.

The most commonly encountered bloom colour is white with a band of deep rose pink to crimson along one side of the petals. The eye-zone or petal spot can be rich red or purple and is never edged with the narrow red line as seen in *H. splendens* and *H. divaricatus*. The flowers present in an upright position at the tips of the branches and fully open. Occasional populations of yellow bloomed specimens occur in Queensland and New South Wales as well as pink forms, such as the very dark pink called 'Rosie' from Queensland's central coast. Another pink with darker stripes of pink to red on the petals was collected by Colleen and Geoff Keena near Warrell, New South Wales and has been sold in the nursery trade as 'Pink Haze'. Another similar even more spectacular form comes from Mt. Crosby Cliffs in the Brisbane area. Both of these pink forms were found growing amongst plants of the normal white bloom.

At Kenilworth in the Sunshine Coast Hinterland a yellow form grows along the roadside with the normal white further along the road. In between these two populations can be found cream flowered plants – an obvious natural cross between the two populations. On the northern end of the Sunshine Coast, natural hybrids between *H. heterophyllus* and *H. splendens* can be seen between Eumundi and Tewantin as well as near Cooroy.



H. heterophyllus 'yellow' form from Kenilworth Sunshine Coast.



H. heterophyllus 'Rosie' pink/red from Capricorn locality Photos G. Harvey

(b) *Hibiscus splendens* Not nearly as common as *H. heterophyllus*. It occurs in widely scattered populations, sometimes on alluvial terraces as well as rocky slopes and volcanic summits such as Mt. Tinbeerwah near Noosa. It is distributed to as far south as Kiama. I have grown nice specimens that came from Cooperabung about 64 km from Taree. In forest situations the plant may reach 6 metres, but in more open habitats it is usually a bushy shrub of about 2.5 to 3 metres. The large flowers come in various shades of pink, the plant being covered with prickles and stellate hairs.

(c) *Hibiscus* species 'Barambah Creek' Comes from the inland near Kingaroy in Queensland where the locality frosts quite heavily. The plants are low growing, spreading bushes completely without prickles. The flower is similar to *H. splendens* and was a good seller in nurseries during the spring of 2008.

(d) *Hibiscus divaricatus*. This hardy, yellow bloomed species occurs in the Capricornia region of Queensland and as far south as the Kragga National Park bordering on the Darling Downs Pastoral District. As well as Magnetic Island off Townsville, it has been found on Cape York Peninsula – (see above). We regard *H. divaricatus* as the hardest of the *Furcaria* species with its long flowering period and resistance to pests such as mealy bug and scale.

(e) *Hibiscus diversifolius*. This common (indigenous) species grows from Fraser Island to as far as the NSW south coast. The flowers are yellow with a purplish/black basal spot. It grows at the edge of swamps, streams, irrigation ditches and storm water drains. I have seen it sold in nurseries as an aquatic plant completely submersed in water.

(f) *Hibiscus acetosella*. This plant is quite commonly seen in nurseries and at plant sales. It is best grown as an annual with its red foliage and burgundy blooms in winter/spring. The leaves are used in cooking. It seeds prolifically and an abundance of seedlings may have to be weeded when they germinate with the onset of warmer weather.

(g) *Hibiscus radiatus*. Another introduced, possibly naturalized species in some areas, that grows and seeds prolifically. It has most attractive burgundy/rayed blooms but could be a potentially dangerous plant to grow as it may become 'feral' under some situations.

Conclusion: As can be seen the *Hibiscus Furcaria* section is well represented in Australia with a wealth of variation amongst the species. Selections of the east coast *H. heterophyllus*, *H. splendens* and *H. divaricatus* will grow and reward gardeners in Sydney and Adelaide as well as protected sites in Melbourne. As indicated at the beginning of the article, this introduction to an under appreciated group of plants is intended, where publication to date has been very incomplete and often inaccurate. It should be noted that the 22 or so species from WA and the NT still await testing as to their suitability for horticulture.



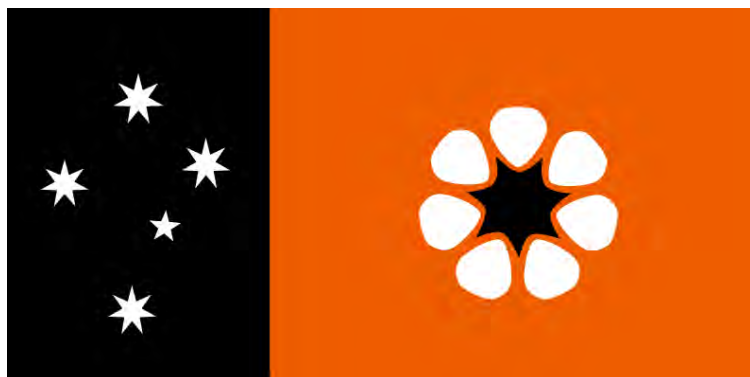


Some Malvaceae Species Worth Cultivating

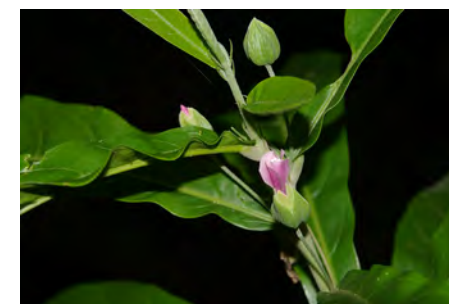
Geoff Harvey

If you live in the arid centre of Australia or near the high rainfall coastal localities, here is a species worth growing. It is ***Gossypium sturtianum*** known as Sturt's Desert Rose, the Floral Emblem of the Northern Territory. It is fairly common near Alice Springs, but not in the northern parts of the Territory. In heavy frost areas it will die down to ground level and emerge again in the spring or after rain has fallen.

It has often been used on Australian postage stamps, Geoff and Colleen Keena having supplied the most recent image to be chosen as one of a set of four wildflower stamps (see below). Also depicted – Sturt's Desert Rose in stylised form on the Northern Territory Flag.



Do we have Hibiscus species from the tropical evergreen vine forests and rain forests of far north Queensland? Yes we do, and you would need to look twice to recognise these species as being of the *Hibiscus* genus. Until 2004 they were Australia's representatives of ***Macrostelia***, which were transferred to ***Hibiscus*** due to strong molecular support.¹



Hibiscus propulsator Photo: David Hockings

Hibiscus macilwraithensis Photo: Geoff Keena

Two species were renamed as follows :

Hibiscus macilwraithensis (Fryxell) Craven and B.E. Pfeil. **Comb. et stat. nov.** – (see image below)

Hibiscus propulsator Craven and B.E. Pfeil. **sp. nov.**
and a new species named

Hibiscus tozerensis Craven and B.E. Pfeil. **nom. nov.** This species has deep rose pink to red flowers.

It is surprising that these truly tropical plants do very well in south east Queensland in a shaded, protected position. The handsome, elongated leaves are dark green and the bush well branched. Blooming seems to be more or less continual, though no seed has been known to set thus far.

The so called 'Bush Hibiscus', ***Radyera farragei***, is represented in Australia by one species in the genus *Radyera*. One other species occurs in the Cape Province of South Africa. Our Australian species extends from the semi-arid central Australia southwards into WA, SA and Vic. as well as NSW. It forms a

handsome bush with large floppy leaves and is a long lived perennial that makes an excellent garden plant. The flowers form in a terminal cluster and are a large trumpet-shaped deep lilac with a dark purple basal spot. From my experience they adapt admirably to south east Queensland conditions of high humidity and rainfall, flowering over a long period.



Geoff Harvey locates a specimen plant west of Alice Springs





It is very widespread in the southern part of Western Australia growing often on red sandy or loamy soils.² In Central Australia it grows along watercourses, roadsides and other places that are intermittently wet.



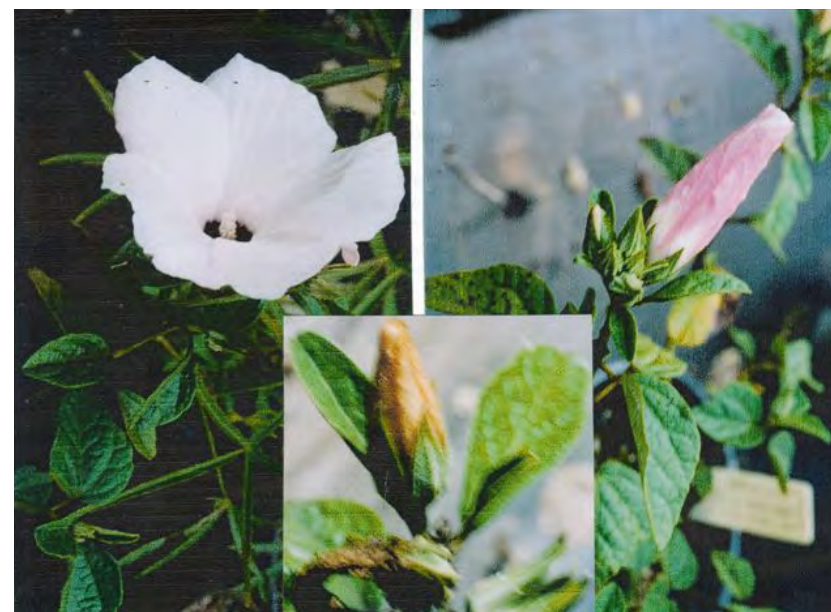
Opening bloom of
Radyera farragei
Sunshine coast Qld.
Photo: G. Harvey

I have great admiration for the botanically unnamed *Hibiscus* species (Emerald S.L. Everist 2124), seed of which has been collected for cultivation assessment. The white flowers are of a good size with a red basal spot somewhat similar in appearance to *Hibiscus normani*. The blooms present in an upright position on a plant reaching on average, about 1 metre high. It belongs to the *Bombicella* section and is most likely an annual. As it occurs over quite a large area of varying conditions, it is likely to adapt well to growing in south east Queensland. I can't wait to plant the seed as soon as the warmer spring weather arrives.

Another botanically un-named Hibiscus discovered in 1996 has a bloom very similar to *H. splendens*. It is known as 'Barambah Creek' (see image below) and was found growing amongst rock outcrops not far from Kingaroy in Queensland. Coming from a heavy frost prone habitat it should be adaptable for growing in our cooler climates in full sun and perhaps sandy soils that are very well drained. The form that is being successfully marketed through general nurseries has no prickles and is a low bushy plant with velvety grey foliage.



Hibiscus species (Barambah Creek P. Grimshaw + PG 2484)



Decaschistia peninsularis Craven and Fryxell. Photos: G. Harvey

My final selection is *Decaschistia peninsularis* Craven and Fryxell.

"You could be excused for thinking that this fine looking plant is a Hibiscus, the main difference being the schizocarpic fruit, whereas Hibiscus has a capsular fruit". This Queensland species from near the Moreton Telegraph Station on Cape York Peninsula is also found near Weipa and Lawn Hill.

David Hockings collected seed and we both grew it in containers very successfully as a prostrate plant with buds that start off yellow, changing to pink thence a white bloom with a maroon petal spot

Two new species of *Decaschistia* Wight & Arn., *D. peninsularis* Craven & Fryx. and *D. occidentalis* A.S. Mitchell ex Craven & Fryx., were described and illustrated in Aust. Syst. Bot., 1989, 2, 461-8.

The above selection is just a few of our many gems native to Australia. I am sure that they will be valued more and more as time goes by.

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Mallows (Malvaceae)

Indigenous to Tasmania

Phil Watson

Most of Australia's mallow species prosper in tropical and sub-tropical communities although climate change is gradually extending their range southwards. Prominent examples include the coastal and salt water estuarine **Hibiscus tiliaceus** with its distinctive large leaves, bold yellow flowers and spreading shady canopy, along with the garden charms **Alyogyne huegelii** and **A. hakeifolia**, and the cherished Northern Territory's floral emblem, Sturt's desert rose, **Gossypium sturtianum**.

Within the sub-tropical to temperate regions well known family members include the attractive small tree Norfolk Island Hibiscus, **Lagunaria patersonia**, and the lavender, mauve to violet, endemic, blue howittia, **Howittia trilocularis**.

Further south in Tasmania the mallow diversity is radically lower. In addition to the arid and saline-tolerant naturalised thorny saltmallow, **Lawrencia squamata**, there are only four indigenous species. These include **Astertrichion discolour**, the Tasmanian Currajong, a moisture and shade-loving tall shrub; **Gynatrix pulchella**, the fragrant hempbush, with its distinctive soft, hairy, heart-shaped leaves; **Lawrencia spicata**, the rare salt marsh resident candle saltmallow; and **Malva australiana** syn. **Lavatera plebeia**, the white or pink to purple free-flowering Australian Hollyhock. It should be noted that in 1995 research revealed that **Lavatera** and **Malva** were botanically equivalent, necessitating a merger under the original name known as **Lavatera** and now **Malva**. Hence, for example, tree mallow **L. arborea** has now become **M. dendromorpha**.



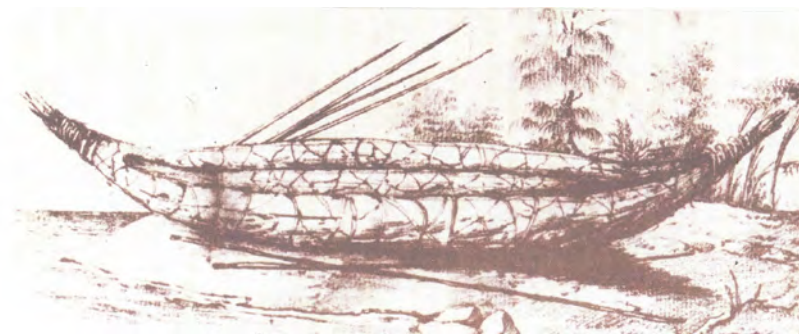
Gynatrix pulchella



Lawrencia spicata

Tasmanian Currajong: (*A. discolour*) was first collected by the naturalist Robert Brown on 28th May 1804 along Humphrey's Rivulet (flows off the foothills of Mt. Wellington and into the Derwent), whilst doggedly bush bashing his way west in his successful attempt to locate the source of the Huon River. His prolific field notes also recorded many other new species. The plant's name, **Astertrichion**, derives from *aster* star + *tricho* hair referring to the star-like hairs on the young branches, undersides of leaves and flower-heads. Its tough fibrous stems and bark provided a valuable source of fibre for various cords, rope and string for the Tasmanian Aborigines.

Besides their use as draw-strings and handles of baskets and kelp water carriers, these cords were prized for the construction of the curious Tasmanian Aboriginal canoe-craft. The cords were used to hold together the large bundles of bark and rushes. Each of the canoe's three buoyant bundles were shaped to be broader and bulkier in the middle and tapered to the sharp upward pointing ends, which were tightly bound together to form their unique style of boat.



Tasmanian aboriginal canoe⁷

References :

Tasmanian aboriginal canoe – http://www.ibiblio.org/pfaf/D_search.html

1. W. Rodger Elliot and David L. Jones, 2002 – *Encyclopaedia of Australian Plants Volume 4 Eu-Go, Vol 5 Gr-J Vol 6 K-M and Vol 8 pr-So*
2. Ben-Erik van Wyk and Nigel Gericke 2003 *People's Plants – A guide to Useful Plants of South Africa* Briza Publications, PO Box 56569, Arcadia, Pretoria, South Africa

The Grevillea Book, volumes 1, 2 and 3 by Peter Olde and Neil Marriott, is a complete reference to all species of Grevillea. The Australian Plants Society NSW ensured that they were published to a very high standard. Volumes 2 & 3 are still available from the Australian Plants Society NSW, PO Box 5026, Old Toongabbie, NSW 2146, at \$44 per volume plus postage and handling of \$10.60 for one or two volumes.



Prospects for Developing Improved Native Hibiscus Cultivars

Geoff Harvey, Dr Dion Harrison. Colleen Keena

What has been achieved so far?

World wide, a tremendous amount has been achieved in 'improving' plants through breeding and selection in order to better suit human needs. These days, as a matter of necessity and economics, most professional attention is devoted to the development of plants with high commercial value such as the food and fibre crops, and the major ornamental crops. The development of 'new' species for ornamental use is largely driven, at least in the first instance, by the passion of enthusiasts and amateur / hobbyist breeders.

Whilst directed breeding of the *Lilibiscus* section of *Hibiscus* is documented to have commenced 200 years ago in Mauritius, the great advances were made in Hawaii from 1900 onwards. It was the merger with species indigenous to the Hawaiian Islands with those from Fiji, Mauritius, Asia and the African east coast that brought about this success. *Hibiscus* section *Lilibiscus* breeding today has now resulted in over 9,000 registered cultivars, mainly bred for the show table and the enthusiasts who impatiently want something new and different. By and large, the modern highly bred, so called *H. rosa-sinensis* or 'Hawaiian Hibiscus' could not be regarded as an all purpose garden plant for the everyday gardener or a landscaping plant for public uses. Most of them need to be grafted, which is an expensive production exercise suitable for the passionate collector. Whilst all this has been happening, we are still finding and describing Hibiscus species in Australia.

With native Hibiscus in this country, we are only beginning to scratch the surface to find out what crosses will work to our advantage. On the other hand, some very good work has been done with our native *Alyogyne* species, mainly in the U.S.A. The professional breeders have done a lot with *Gossypium* concerning cotton production needs, with little attention being paid to the ornamental aspects.

With native hibiscus, many natural crosses exist in the vicinity of Marlborough and Glen Geddes in the Capricorn Region north of Rockhampton. Some of them show good promise for addition to a breeding programme and should be monitored in the wild where they are developing naturally into a multitude of colours and forms.

Crosses between *H. heterophyllus* and *H. splendens* occur readily. Hybrids include *Hibiscus* 'Pink Ice' which is a cross between *H. heterophyllus* and *H. splendens* with large pink flowers over a long period. *Hibiscus* 'Wirruna' is another cross between these two species, this time between a yellow form of *H. heterophyllus* and *H. splendens*. It has salmon blooms and a long-flowering period.

The co-authors of this article would like to acknowledge that Colleen Keena has been to the fore-front of breeding and selection for many years and her web site www.hibiscus.org is an enlightenment.

Where do we go from here?

The *Hibiscus* section *Furcaria* is the largest with 30 or so species indigenous to Australia which probably all have the same chromosome number of $2n = 6x = 108$ (hexaploid). The opportunity for breeding with this huge genetic resource is immense. What makes it particularly attractive are the many forms existing within these species, the wide geographical distribution and at least one smallish annual (*H. meraukensis*) that could be utilised to great advantage.

The second largest section is *Bombicella* with probably more than 11 or so endemic species. Given that most of these species grow in monsoonal or semi-arid environments, there may be limits to their scope for cultivation in Australian gardens. Having said that, there are probably very few species that have actually been grown in cultivation over a range of typical garden environments. If *Hibiscus* species such as *H. sp* 'Emerald', *H. insularis*, *H. burtonii*, *H. leptocladus* and *H. macilwraithensis* could be cross-bred, perhaps welcome and useful surprises could result. There has been very limited research published on the chromosome numbers of these species, making it difficult to comment on whether they will readily interbreed.

The objectives for breeding and development of new cultivars will vary depending on the target market segment i.e. potted plants, small gardens v's acreages, and broader landscape use (e.g. streetscapes, parks and gardens). For example, the size of the fully grown plant or the presence of prickles on the stems is not as great a consideration for people on acreage as for those on suburban blocks; members who like to prepare 'bush food' from their Hibiscus may have a focus on edible plants; members who live in inland sites where drought and frosts are more pronounced may concentrate on hardy plants with specific characteristics such as colour of blooms or duration of blooms.

Suburban gardens have contracted in size to the extent that container growing may be the only option. In Europe, huge numbers of small, compact, floriferous Hibiscus are produced for summer growing after which they are expendable. In the long run this may be achievable with the *Bombicella* section or the concentrated use of *H. meraukensis* in the *Furcaria* section.

You too can play a part!

At least five members within our Study Group are actively breeding and selecting new cultivars, each no doubt with specific aims and objectives in mind. We work in together by sharing plants, seeds and experiences.

If the idea of making crosses, planting out seed and waiting for the results is not your cup of tea, you can still play a pivotal part in the process by becoming an enthusiast and getting involved in growing the various species, forms and cultivars in different garden situations across Australia, and sharing your experiences through the Study Group newsletters.



Others of you may prefer to help with discovering, collecting and describing new species and forms in the wild, and enabling others to study and evaluate their horticultural merits.

Summary

We hope this edition of '*Australian Plants*' has opened up a whole new world to native plant enthusiasts.

Our Study Group is growing steadily with plenty of communication and sharing of experiences. At the present time more than 40 Newsletter copies are being produced three times per year, covering a multitude of interesting topics.

As a Study Group we value those people who garden with native plants and are passionate about Hibiscus. The Malvaceae family of plants has been subjected to languor for too long and we look forward to a bright and deserving future.

The two final images depict *H. normanii* which grows over a wide area of Queensland, and an un-named *Bombicella* section Hibiscus that was found near Mt. Isa.



Hibiscus normanii Photo: Geoff Keena



Hibiscus species section *Bombicella* from Mount Isa, Queensland Photo: Alison Fraser

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