

Rhododendron lochiae,
Australia's only known native rhododendron species, its discovery,
cultivation and hybridisation.

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Introduction.

The late Ben Menelaus, in his article on *R.lochiae* in the Rhododendron and Camellia Year Book of The Royal Horticultural Society in 1966, page 132, wrote that *R.lochiae* was not overwell documented. There have been many references to *R.lochiae* in the literature, but no complete article has been published, and in this address I will endeavour to bring together all the published information, information I have personally obtained, and my own observations regarding this very interesting species, the only Rhododendron species native to Australia.

The inaugural Baron von Mueller Memorial Lecture was delivered by the late Michael Black¹ on Friday, 12th July, 1968. He chose as his subject "A Historical Survey of Rhododendron Collecting" printed in "The Rhododendron" 7-2-5.

In his opening address the President of The Australian Rhododendron Society at that time, Arnold Teese² welcomed all present and stated that "This was to be the first of a series of lectures being sponsored by The Australian Rhododendron Society, to be known as "The Baron von Mueller Memorial Lectures". The Society hoped to hold these lectures annually, but their frequency would depend upon the Society's ability to obtain distinguished speakers to deliver them".

The second Baron von Mueller Memorial Lecture "Beauty and Knowledge" was delivered by Dr. John L. Rouse³ and published in "The Rhododendron" 20-1-2.

The third Baron von Mueller Memorial Lecture "Rhododendrons: An Intimate Glimpse into the Flower" was delivered by Barbara Palser⁴ and published in "The Rhododendron" 24-4-52.

The fourth Baron von Mueller Memorial Lecture "Tropical Rhododendrons", was delivered by Dr. Peter Valder⁵ and published in "The Rhododendron" 27-2-30.

Arnold Teese continued his opening address at the inaugural lecture: "You have all heard of Baron von Mueller, a great botanist and a great plant explorer, whose memory we are commemorating tonight, but I would like to tell you something of his life and work.

Mrs. Margaret Willis⁶, writing his biography in her book "By their Fruits" published in 1949, describes him as a very great man who was a true citizen of the world.



Ferdinand von Mueller

Ferdinand von Mueller was born in Rostock, Germany, in 1825. His father died of tuberculosis when he was 10, and his mother dies also from tuberculosis, when he was 15, at which time he was apprenticed to a chemist. He was an only son, but had one older and two younger sisters.

At this early age of 15, whilst studying to be a chemist, he developed an interest in botany, spending every moment he could scouring the country for plants, which he would describe and add to his growing botanical collection. He decided at this stage that he would be a good chemist, but only as a means to an end, for botany was his choice. He would be a botanist. He would travel and explore. He would discover and describe things and places not yet dreamt of by men.

At the back of the chemist shop he developed an herbarium, which was the envy of the Professor of Botany at the Kiel University, and he also developed an ever-enlarging botanical library.

No sooner had he received his pharmacy degree, than he submitted to the University of Kiel his thesis on *Capsella (bursapastoris)*, or the common Shepherd's Purse, and at the age of 21, by his own determined effort, he became a Doctor of Philosophy.

Dr. Mueller migrated to Australia in 1847, arriving in Adelaide, where he continued to work as an assistant in a chemist's shop. All his spare time was spent in collecting and describing botanical material.

Impelled by the desire to explore more widely, he moved to Victoria in 1852, and in 1853, Governor Latrobe appointed him Victoria's first Government Botanist on the recommendation of Hooker from England. The appointment enabled him to explore widely throughout Victoria, and was a position he held until his death of a stroke in 1896, at the age of 71 years.

The Melbourne Botanic Gardens had been established in 1846, and although

in 1853 the Gardens had a curator, Mueller decided they were really his gardens now, and he would see that before long they were scientifically the best gardens in the world. He made numerous plant exploring expeditions, but of special interest to our Society is the fact that in July 1855 he accompanied A. C. Gregory's North Australian exploring expedition in search of Leichhardt, the well-known explorer.

When he saw the rugged outline of Mt. Bellenden-Ker inland from Cairns in North Queensland, he speculated whether species of *Rhododendron* would be found thereon. Subsequently Messrs. Sayer and Davidson, who in 1887 first ascended the mountain, found a rhododendron. In the "Victorian Naturalist" for March, 1887, Baron von Mueller described this rhododendron, which he named *Rhododendron lochae*, after Lady Loch, wife of the then Governor, in recognition of her patronage of Victorian Horticulture and of Rhododendrons in particular.

In 1856, in addition to being Government Botanist, he was appointed Director of the Botanic Gardens, a position he held until 1873. He was replaced by William R. Guilfoyle as Director of the Gardens, but retained the position of Government Botanist. He was too much of a systemist to be a good landscape gardener, and it is William Guilfoyle who must take credit for laying out the Gardens as they are today. Von Mueller never again set foot in the gardens.

During his career he was a prodigious writer of papers, pamphlets and books relating to Australian plants. Mrs. Willis lists 15 of his major works. He investigated, named and described some 2000 botanical species. A complete list of these is at the Melbourne National Herbarium, and it is only right that the Herbarium should be the venue for the first Memorial Lecture.

During his lifetime he received numerous honours; to mention the more important, Doctor of Philosophy, Kiel, 1846; Honorary Doctor of Medicine, Rostock University, 1857; Elected Fellow of the Royal Society, 1861; created

a Baron by the King of Wurttemberg, 1869; Knighted by Queen Victoria, 1879; Awarded Royal Medal of the Royal Society, 1888; Awarded French Order of Merit, 1888.

His only doubtful honour was his introduction to Australia of the Blackberry. Baron von Mueller remained a bachelor throughout his life.

Typical of the obituary notices which appeared following his death is the following:

"The death of Baron Sir Ferdinand von Mueller has bereft Victoria of its most illustrious citizen, Australia of its most distinguished geographer and the scientific world of one of the most erudite, industrious open-handed, pure hearted and lovable phytologists that the present century has produced." Such is the man whom we remember tonight."

At the time of his death, one of the best friends of Baron von Mueller and a pall-bearer at his funeral, was Heinrich Best, and my first interest in the Baron was when Heinrich Best became my patient, and we had long discussions together about his old friend. It is of interest that Heinrich Best lived to the age of 100 years, dying on the eve of his 100th birthday.

The discovery of *R.lochiae* on Mt. Bellenden-Ker.

An account of the first ascent of Mt. Bellenden-Ker by Messrs. Sayer and Davidson appears in the Victorian Naturalist 4 (1888) 37. It was read at a meeting of the Field Naturalists' Club of Victoria on 4th April, 1887. W. A. Sayer⁷ wrote that "the top of the Bellenden-Ker range is razor-backed, and on travelling along the range beyond the spur by which we ascended, I could not see the sides, they being if anything hanging over. We tumbled rocks over, but could not hear them fall. It was here that I observed the *Rhododendron lochae* growing, and asked the Kanaka to get it, but he remarked "S'pose I fall, I no see daylight any more, I go bung altogether", so I had to get it myself."

J. Hutchinson^s of the Royal Botanic Gardens, Kew, wrote in the Gardeners' Chronicle of 3rd June, 1939 that Meston in his "Report of the Government Scientific Expedition to Bellenden-Ker Range (Brisbane, 1889)" tried to prove that Sayer and Davidson did not reach the top of Mt. Bellenden-Ker, but the top of an eastward mountain, Mt. Toressa, situated between Mt. Bellenden-Ker and the Russell River, forming no part of the Bellenden-Ker Range. Who is correct is immaterial as the fact remains that Messrs. Sayer and Davidson were the first to find *R.lochiae*.

Hutchinson, in the same article writes "that the nearest related species to *R.lochiaie* is the well known *R.javanicum*, Benn., which is found in Java, Sumatra and New Guinea. Compared with that species the leaves are less pointed, although similarly punctate and the flowers appear similar (red and fleshy) with the same softly pubescent, long ovary. Another slightly more distant relative is *R.vidalii*, Rolfe, from the Philippines. The flora of this portion of Queensland seems therefore to show the same affinities as the animals, for it is stated in the zoological account of Meston's expedition that the region in which Mt. Bellenden-Ker is situated, is found a concentration of forms of animal life elsewhere (in Australia) unknown. It has peculiar mammals, peculiar birds, peculiar reptiles, molluscs, insects, and in many cases these strangers to the rest of the area are derivatives, not from the surrounding Australian stock, but from the Indo-Malayan fauna on the one hand and the Papuan on the other."

It would appear from the above evidence that *R.lochiaie* migrated south along the mountain ranges many long years ago, when Australia and Papua New Guinea were joined in one land mass.

Baron von Mueller's description of *R.lochiae*^s as it appeared in The Victorian Naturalist Vol. III, No. 11 (March 1887) page 157.

Rhododendron lochae. Arborescent, somewhat scandent; leaves persistent, mostly whorled, some scattered, conspicuously stalked, flat, nearly ovate,

rather blunt, glabrous, well veined, minutely scaly-dotted beneath; flowers rather large in terminal umbelliform fascicles on very conspicuous stalklets; bracts cuneate or spatular-ovate, glabrescent; calyx rudimentary, oblique patellar or sometimes variously short-lobed; corolla bright-red, glabrous but scaly-dotted outside, slightly hairy inside, the lower portion broadly cylindrical, the upper portion bluntly five-lobed and conspicuously veined; stamens ten, slightly emerging from the corolla-tube; filaments short-hairy towards the base; anthers very small, ellipsoid-cylindrical; style nearly as long as the filaments, short-hairy to about the middle; indusium truncate; stigma slightly lobed, five celled; seeds conspicuously appendiculated.

On the summit of Mt. Bellenden-Ker, at an elevation of about 1540m, W. Sayer and A. Davidson.

This beautiful and singularly local plant, which attains a height of 6m, is cognate to *R.javanicum*, from which it differs in longer petioles, blunter leaves, smooth pedicels, somewhat smaller flowers as well as more hairy style and fruit.

In some respects this Australian species approaches also *R.griffithianum*, but the disposition and colour of the flowers are quite different. From *R.celebicum* it is easily distinguished by broader not acute leaves with not concealed veins, by not scaly pedicels, by mostly not narrow bracts, by larger lobes of the corolla, and not scaly ovary. From *R.arfakianum*, it is separated already by glabrous pedicels, by the lobes of the corolla being shorter than the tube, and by shorter stamens.

The Holotype specimen of *R.lochae* collected by W. Sayer under the No. 135, and described by Baron von Mueller is in the National Herbarium at the Royal Botanic Gardens, Melbourne.

Lady Loch.

The dedication of the only Australian Rhododendron to Lady Loch¹⁰ by Baron von Mueller, is in special recognition of the patronage given by her ladyship to

Victorian Horticulture, and in particular to that very group of plants, the occurrence of which in the Australian vegetation is now only rendered known, more than 80 years after the discovery of Mt. Bellenden-Ker.

Lady Loch, niece of the fourth Earl of Clarendon was the wife of the Governor of Victoria, Baron Loch of Drylaw. Carl Kahler, a famous Austrian artist painted Lady Loch at Macedon. He left Victoria in 1889, went to San Francisco and was killed in the earthquake of 1907. Many years later, the picture was discovered at the Canada Hotel in Melbourne, and a copy appeared in the Melbourne Sun newspaper on 21st August, 1967, at which time it was valued at more than A\$1000.

It is of interest that in the Oak Lawn in the Melbourne Botanic Gardens one of the largest oak trees is *Quercus canariensis*, the Algerian Oak which was planted by Lady Loch on 15th November, 1889.

Further descriptions of *R.lochiaie*.

R.lochiaie is described by J. Hutchinson¹¹ in the "Botanical Magazine" tab.9651. The article has a photograph of a plant grown in the Temperate House Pits at Kew Botanic Gardens where it flowered in September 1939. This description describes the leaves as being obovate in shape, not ovate as in the description of Baron von Mueller.

In The Rhododendron Handbook 1980 "Rhododendron Species in Cultivation", published by the Royal Horticultural Society¹², England, the original name *R.lochae* given to this rhododendron by Baron von Mueller is changed in spelling to *R.lochiaie* to conform with correct Botanical Latin in the International Code of Botanical Nomenclature.

It is published as *R.lochiaie* (after Lady Loch, patron of Australian Horticulture) sect. *Vireya*, subsect. *Euvireya*, s.*Javanica*.

It is described as normally requiring greenhouse protection in the British Isles.

A shrub or small tree up to c.2m. Leaves up to 9cm long 4cm wide, broadly obovate, dark glossy green and glabrous above, sparsely scaly below. Flowers in trusses of 2-7, 4-5cm long, tubular-funnel-shaped, scarlet or bright geranium lake, N.E. Queensland, 1077-1230m. Botanical Magazine Tab.9651. A.M. (1957) (Crown Estate Commissioners, Windsor). Flowers Geranium Lake (H.C.C.20).

One should remember that when *R.lochiaie* was described and named by Baron von Mueller in 1887 the amount of material of other rhododendron species available for comparison, was very limited, so that in descriptions of *R.lochiaie* by modern taxonomists, one would expect changes resulting from a much wider range of material used for comparison at the present time. Also specimens of *R.lochiaie* have now been collected from a number of mountain tops in North Queensland, also allowing for much more accurate taxonomic descriptions.



R.lochiaie (Thornton Peak)

Modern Taxonomy.

I am indebted to Lyn Craven for a modern description of *R.lochiaie*. *R.lochiaie* belongs to subsect. *Euvireya* by virtue of the following features: the sessile, lobed to incised scales with relatively small central zones; and the campanulate corolla tube with the lobes relatively large. Within the subsection it conforms to series *Javanica* as it has more than five stamens and relatively large leaves; it fits well in this series. The likely closest relatives to *R.lochiaie*

in series *Javanica* are *R.comparabile* and *R.luraluense*. Following through the key to series *Javanica* in Sleumer's "Flora Malesiana" treatment it can be seen that these features bring *R.lochiaie* out quite clearly to the region of the two mentioned species: the corolla lacks hairs on its outer surface, the ovary is both hairy and lepidote, the style is hairy for the basal 3/4, the leaves lack hairs on the lower surface and are elliptic to obovate and shortly acuminate at the apex, the corolla is c. 4.5-5.5cm long and moderately lepidote outside and lobed for c. 1/3 of its length with the tube c. 3cm long, and has distinctly hairy filaments. The corolla tube is straight in *R.lochiaie*, *R.comparabile* and *R.luraluense*. While *R.lochiaie* may be closer to these two species, its wider relatives are less easy to suggest. *R.culminicolum* is one possibility and perhaps even species such as *R.christianae* may be involved.

In this paper the modern spelling of *R.lochiaie* used by the R.H.S. has been adopted.

Herbarium specimens of *R.lochiaie* collected by Messrs. Sayer and Davidson are in the Herbarium at the Royal Botanic Gardens, Kew, recorded as being from Mt. Bellenden-Ker at 1530m. An herbarium specimen of *R.lochiaie* collected by Christie Palmerston on Mt. Bartle Frere in 1888, and one collected by Stephen Johnson on Mt. Bartle Frere in November 1891, are in the National Herbarium at the Royal Botanic Gardens, Melbourne. Kajewski collected *R.lochiaie* on Mt. Bartle Frere in 1929 under the number 1278 at 1450m. Dr. Leonard Brass collected it on Thornton Peak in 1932 under the number 2284 at 1080-1380m. Specimens from these collections are in the Herbarium at the Royal Botanic Gardens, Kew. It was later collected by Dr. Brass in 1948 on Mt. Finnigan, and was also collected on Mt. Spurgeon on both occasions as Herbarium specimens.

***R.lochiaie* in its native habitat.**

W. A. Sayer wrote that "the top of the Bellenden-Ker range is razor-backed and on travelling along the rocky spur, *R.lochiaie* was found as a terrestrial plant hanging over the side."

Ben Menelaus wrote that he found about 20 plants on Mt. Bartle Frere rooted in deep cracks in or between rocky boulders with roots always cool and protected from the sun, wind and collectors.

Donald Teese and Ray Weeks report in "The Rhododendron" 22-3-3 that "on the Rhododendron Society expedition to Thornton Peak and Devil's Thumb, *R. lochia* appeared to be quite widespread and common on mountains in North Queensland where suitable habitat occurs in rocky areas above 1050m. It was never seen growing as an epiphyte. Mostly it grew on accumulated litter on or between rocks. Sometimes the plants grew in deep cracks in the rocks and would straggle up to the light making quite long plants. Many others grew in exposed places on rocks, and were very wooded and stunted. The "best" plants grew in the forest but were invariably associated with rocks. Fewer plants grew out amongst the scrub away from the rocks. Variation in leaf colour, size and shape seemed to be considerable. Flower colour varied from pale red to deep scarlet".

Donald Teese's finding of *R. lochia* on Mt. Finnigan in May 1978 is described in "The Rhododendron" 18-2-11. At the top of a large mound of rocks *R. lochia* was found growing around the base of a rock along with the sprawling *Agapetes*.

Although mainly growing as a terrestrial plant, *R. lochia* has also been described as an epiphytic plant on some mountains, and special associations have been reported with other plants.

It has been mentioned that on Mt. Finnigan it is found in association with *Agapetes* species.

The late C. A. White, Government Botanist of Queensland reported that *R. lochia* was found on Mt. Spurgeon in association with a *Vaccinium*, and mostly grows as an epiphyte on the tops of large *Eugenia* trees.

The fact that *R.lochiae* grows in association with species from other genera does not necessarily mean that the species from the different genera have special affinities, but rather that they grow best in a similar microclimate. The plants growing in association with *R.lochiae* are referred to in the "Botanical Magazine" 9651 and in "The Gardeners' Chronicle" 3rd June 1939, page 348.

In all the areas where *R.lochiae* has been found growing in the wild, it has been found growing above or almost above the tree line, in full sun, with a level of ultraviolet light and also a high humidity.

The Bureau of Meteorology has been able to supply only limited details of rainfall records, temperature records and humidity records for the North Queensland mountains on which *R.lochiae* grows. Apart from Mt. Bellenden-Ker, no weather stations exist on any of these mountains.

No temperature or humidity records are available for any of the mountains but have been supplied for Herberton P.O., the highest location on the Atherton Tablelands. Mt. Bellenden-Ker is extremely well exposed to the East compared to Herberton which is surrounded by ranges and valleys in most directions. In general, temperatures on Mt. Bellenden-Ker are at least three degrees lower than at Herberton with higher humidities. Winds are mainly South-east to East occasionally North-east with showers and / or rain.

At Herberton P.O., temperatures are highest between October and March with a mean maximum of 29°C for November to a mean maximum of 21.3°C for July. The mean for the year is 25.5°C. The mean minimum temperature ranges from a maximum of 18.4°C in February and a mean minimum of 9.7°C in July. The mean minimum for the year is 14.6°C. The humidity measured at 3pm ranges from a maximum mean level of 67 in February to a minimum mean level of 47 in September. The mean yearly humidity at 3pm is 58. The rainfall at Herberton is maximum during the months of December until March

with the highest mean reading of 238mm in December and the lowest mean reading of 17mm in September. The mean yearly reading is 1147mm.

At Mt. Bellenden-Ker top station 031141 the mean rainfall ranges from 1272mm in February to 251mm in October. The mean yearly total is 8024mm. The rainfall is highest from January until April and lowest from July until November.

At Babinda weather station 031144, which is the location nearest to Mt. Bartle Frere the mean rainfall ranges from 768mm in February to 104mm in October. The mean yearly total is 4540mm. The rainfall is highest from January until April and lowest from June until November.

***R.lochiaie* in cultivation.**

The first report of *R.lochiaie* being grown in cultivation was that in "The Gardeners' Chronicle" 3rd June 1939, page 348, where it is recorded that it was growing at The Royal Botanic Gardens, Kew. In "The Botanical Magazine" Tab.9651 it is recorded that it flowered in the Temperate House at Kew in September 1939. The plants at Kew had grown from seed sent to The Royal Botanic Gardens, Kew in 1936, by Herbert Solomon of Sydney. Unfortunately I have no information on where the seed was collected or whether Herbert Solomon was the actual collector.

In 1941 I joined the Field Naturalists' Club of Victoria and recall seeing a truss of *R.lochiaie* which the late Ivo Hammet brought along to a meeting. In "Your Garden" magazine of May 1951¹³, Ivo Hammet wrote an article describing his experiences with this species. He wrote that his plant was growing well in ordinary loamy soil, surrounded on all sides by rocks and overshadowed by trees.

Dr. Peter Valder commenced to grow *R.lochiaie* in 1948-50 when he was given seed by Tom Raine of Raine Ridge, Kurrajong. Tom Raine had

collected the seed in North Queensland, but I have no information on which mountain it was collected.

R. lochia first appeared in a Nursery Catalogue in 1953 at the Nursery of Basil Hodgins¹⁴ in Essendon, Victoria. It had been displayed in flower at Garden Week in 1952 and was given an Award of Merit by the Nurserymen and Seedsmen's Association. I have spoken to Bob Hodgins, son of Basil Hodgins, and he recalls seeing a large plant of *R. lochia* in the garden at the family home in Essendon as a schoolboy in the 1930's, but has no idea of the origin of this plant. This clone has been widely grown, especially in Victoria, by those enthusiastic gardeners interested in rhododendrons. It was reported to have oval glossy foliage, and waxy vermilion red flowers in semipendulous bunches flowering in the autumn.

There is an herbarium specimen of the Hodgins Nursery form in the National Herbarium at the Royal Botanic Gardens, Melbourne dated 23rd December, 1943, and recording that this form is from Mt. Bellenden-Ker.

In England a selected form of *R. lochia* was named *R. lochia* 'Down Under' by the Crown Estate Windsor, and received an Award of Merit in 1957. The late Ben Menelaus¹⁵ collected seed of *R. lochia* on Mt. Bartle Frere in the middle 1960's at an altitude of 1300m. In his article on *R. lochia* in "The Rhododendron and Camellia Year Book 1966" published by the Royal Horticultural Society, he wrote that he found one flower on Mt. Bartle Frere, the colour being similar to the A.M. form and established garden forms originating from Hodgins Nurseries. Seedlings raised from self-pollinated garden plants of the Mt. Bartle Frere form were identical.

As shown in the painting by Vera Scarth-Johnson¹⁶, painted from life on the top of Mt. Bartle Frere, the leaves of this form are prominently veined.

Donald Teese¹⁷ collected seed on Mt. Finnigan in 1978 at an altitude of 985m. The seed was distributed to members and is now widely grown. The seedlings

of the Mt. Finnigan form grew into smaller spreading plants with 6-8 florets to the truss. The colour is similar to the form from Thornton Peak, and the obovate shaped leaves are smaller than those of most other forms and slightly paler in colour.

In February 1979, I received cuttings of two forms of *R.lochiae* from Geoff Stocker of Malanda in North Queensland. One form was collected on Thornton Peak and proved to be very similar to material collected later in the year on Thornton Peak by members of The Australian Rhododendron Society. The other form was from Mt. Spurgeon and had flowers smaller than other forms, and leaves smaller and more oval than other forms.

Members of The Australian Rhododendron Society¹⁸ visited Thornton Peak and Devil's Thumb in 1979 and collected cuttings. Those collected on Thornton Peak were collected from plants at a number of different altitudes.

Harold Shepherd has reported that he collected *R.lochiae* on Thornton Peak where it grew up to 2m in height in rocky soil covered with humus and moss. At the summit of Thornton Peak, the leaves, obovate in shape are smaller than those of the Devil's Thumb form, and there are 6-7 florets to the truss. The colour is midway between that of the Hodgins Nursery form and the Devil's Thumb form.

Harold Shepherd also reported that he collected material of *R.lochiae* in 1979 at Devil's Thumb, south of the Daintree River in North Queensland at an elevation of 925m on a rocky outcrop. The plants were "leggy" plants, 1m in height at a maximum, with large leaves, but smaller than he had observed on the lower levels of Thornton Peak. In cultivation there is an average of 6 flowers to the truss, dark red in colour, and more waxy than most forms of *R.lochiae*.

Harold Shepherd points out that seedlings originally obtained from Bert Chandler and Sons Como Nursery at The Basin, grown from the Hodgins

Nurseries form, have flowers with more crinkled edges to the corolla lobe than most forms of *R.lochiae*. The florets are slightly smaller than those of the Devil's Thumb form, very dark in colour, and there are up to ten florets to a truss.

A form of *R.lochiae* was introduced into cultivation, after being collected on Mt. Lewis several years ago by Dr. Geoff Atherton of Brisbane. It has possibly the largest leaves of all forms, but I have no reports of its flowering in cultivation to date.

R.lochiae has also been collected on Mt. Alexandra and on Mt. Windsor, but I have no details of the collections.

In cultivation in Melbourne, the main flowering period is during February and March, but I once saw a plant grown by the late Michael Spry, second President of our Society, which had at least one flower in bloom during each month of the year. The long flowering time is important, as although *R.lochiae* has a main flowering period during February and March, it does not flower only during a peak period like so many other rhododendron species.

Horticultural requirements.

R.lochiae and *R.lochiae* hybrids are grown by rhododendron enthusiasts in Victoria, Wollongong, Sydney, Northern Tasmania and Brisbane, and to a lesser extent in other areas throughout Australia. They are also grown in New Zealand, the United States, Japan, England and other overseas countries. Although these plants grow well in the ground in rich, well drained soils containing plenty of leaf mould, the plants grow better in containers such as hollowed out sections of tree-fern trunks containing rotted tree-fern fibre, peat moss and leaf mould.

The plants are not difficult to grow providing four basic requirements are understood. They require a good supply of moisture, good light, protection from extremes of temperature, and most important of all, good drainage. Dr.

John Rouse has demonstrated that although they prefer acid conditions, they in fact have a high requirement for calcium, and this can be added to compost as calcium phosphate which does not raise the pH too much. It has been stated that they do not like extremes of temperature. The plants need protection from frost as they are frost tender, and they need semishade during the hot summer months. However, they do like warmth and high humidity. The foliage of plants subjected to temperatures below 5°C loses its gloss and becomes blotched with dull red patches.

Horticulturally, plants of *R.lochiae* and its hybrids have great versatility, being ideal garden plants, plants for the patio, bushhouse or hanging baskets. As a cut flower, they are long lasting, and in the garden they are also long lasting. The largest plant of *R.lochiae* I have seen in cultivation was c.1.5m in height and 1m in width. I have grown *R.lochiae* successfully in leaf mould in the fork of a Blackwood Tree (*Acacia melanoxylon*) at Olinda in the Dandenong Ranges in Victoria.

In the nature strip at the home of Dr. John Rouse there is a plant of the *R.lochiae* hybrid, R.'Liberty Bar' which is c.2m in height and 1.5m in width. This plant is in flower every month of the year, and is a magnificent sight. None of the forms of *R.lochiae* are scented, although some hybrids have had scent transmitted to them from their other parent.



R.'Liberty Bar'

Pollination in the wild.

Peter Stevens¹⁹ in his lecture at the Second International Rhododendron Conference in Edinburgh in May 1982, discussed pollination of Vireya Rhododendrons in the wild in Papua New Guinea. He pointed out that there is an association of particular flower types with particular pollinators. Colour of the florets is important in deciding which pollinators visit the flowers, and it is noticeable that colour in Vireya species is related to altitude.

He stated that common red tubular flower types are probably pollinated by birds. Butterflies have been observed to visit a few species with large orange-yellow flowers, but also some species such as *R.christii* which have yellow tubes and red corolla lobes.

The long tubular white flower is probably pollinated by sphingids, and the funneliform white flower type is probably pollinated by bats (Kores).

In Papua New Guinea it is noticeable that Vireya Rhododendron species that occur above the tree line on exposed mountain tops are invariably red in colour. No work has been done on which pollinators are responsible for the pollination of *R.lochiae*, but as this species occurs mostly on rocky outcrops at the top of mountains in North Queensland, and it is red in colour, one might suggest that birds are responsible for its pollination.

Occurring as it does at high altitudes above the tree-line, it is probable that wind also plays a part in pollination.

it is also possible, but to a lesser extent, that insects may also play some part in pollination, e.g. moths or butterflies.

Dr. John Rouse²⁰ in his paper written in conjunction with Norman Dowsett entitled "Butterfly feeders at the Melbourne Zoo" discusses an investigation into butterfly vision.

They point out that man's vision is limited to the wavelength range of 400 to 700 nano-metres (a nano-metre is one billionth of a metre). Shorter wave lengths are referred to as ultraviolet (UV) and longer ones referred to as infra-red (IR). The UV region is divided into UV-A (320-400nm) and UV-B (280-320nm). The wave length for the colour red of *R.lochiaie* is in the region of 625-700nm.

Insects with their compound eyes, tend to be red blind, but can see into the UV-A (300-600nm). Within the insects, most is known about the vision of the honey-bee which has been investigated in considerable detail.

Being red blind, butterflies cannot distinguish the red colour of *R.lochiaie* corolla lobes from the green background of the leaves. However, as a result of their investigations, Dr. Rouse and Norman Dowsett suggest the mechanism by which butterflies are attracted to appropriate flowers from a considerable distance. With eyes capable of high resolution and sensitive to the UV-A, corolla lobes reflecting in the UV-A stand out brightly against the dark vegetation in the background. Bright red flowers which are probably pollinated by birds can have corollas which reflect UV-A and hence butterflies are additional visitors. An example is *R.lochiaie* which has brilliant deep red flowers whose corolla lobes reflect UV-A. The centre of the flower absorbs the UV-A, and acts as a UV nectar guide.

The butterflies are attracted to the flowers from a distance by the bright reflection of the UV-A light on the corolla lobes. As the butterflies approach the flowers, the centre of the flower which is strongly UV-A absorbing, appears dark and acts as a nectar guide. This dark absorbing centre is variously referred to as a UV "bee-guide", "insect guide" or "nectar guide", and provides information to the butterfly that it is on course for a feed.



R.'Australia II'

Hybridisation.

R. lochia will hybridise readily with species in its own Subsection and other Subsections of the Section *Vireya*¹ of the Genus *Rhododendron* but in all the resulting hybrids the red colour of *R. lochia* is dominant.

Hybrids have been made by crossing *R. lochia* with:

Subsection *Pseudovireya* - *retusum* F2

Subsection *Phaeovireya* - *konori* & *phaeopeplum*

Subsection *Solenovireya* - *jasminiflorum* & *loranthiflorum*

Subsection *Euvireya*:

series *Linnaeoidea* - *gracilentum*

series *Buxifolia* - *pauciflorum*, *pseudonitens* & *wrightianum*

series *Javanica* - *javanicum*, *leucogigas*, *macgregoriae*, *christianae*, *laetum*, *aurigeranum* & *zoelleri*



(*R. lochia* x *R. macgregoriae*) x (*R. laetum* x *R. aurigeranum*)

Registered *R.lochiae* hybrids and their parentage.

Alisa Nicole	<i>lochiae x gracilentum</i> F2
Arthur's Choice	<i>christianae x lochiae</i> F2
Athanasius	<i>(laetum x (lochiae x macgregoriae)) x javanicum</i>
Australia II	<i>((phaeopeplum x lochiae) x zoelleri) x leucogigas 'Hunstein's Secret'</i>
Belisar	<i>konori x lochiae</i>
Bellenden Coral	<i>konori x lochiae</i>
Bob's Crowning Glory	<i>lochiae x leucogigas 'Hunstein's Secret'</i>
Brightly	Tropic Glow <i>x (lochiae x macgregoriae)</i>
Celebration	<i>lochiae x macgregoriae</i>
Charming Valentine	Saint Valentine <i>x Saint Valentine</i>
Cheeky Mandarin	<i>(lochiae x macgregoriae) x macgregoriae</i>
Cherry Pie	<i>lochiae</i> hybrid <i>x konori</i>
Christmas Past	<i>lochiae x pseudonitens</i>
Christmas Present	<i>lochiae x javanicum var.brookeanum gracile</i>
Clarion Firm	<i>(aurigeranum x lochiae) x retusum</i>
Coral Flare	<i>lochiae x laetum</i>
Donald Stanton	<i>lochiae x laetum</i>
Felinda	<i>(phaeopeplum x lochiae) x leucogigas</i>
Ferdinand von Mueller	<i>lochiae x macgregoriae</i>
Fire Plum	<i>(phaeopeplum x lochiae) x zoelleri</i>
Fuschia Lady	<i>((phaeopeplum x lochiae) x zoelleri) x leucogigas 'Hunstein's Secret'</i>
Great Scent-sation	<i>konori x lochiae</i>
Hot Gossip	<i>lochiae</i> hybrid <i>x konori</i>
Irian Jaya	<i>lochiae x Pink Delight</i>
Kisses	Tropic Glow <i>x (lochiae x macgregoriae)</i>
Kurt Herbert Adler	<i>phaeopeplum x lochiae</i>
Lady Clare	<i>(phaeopeplum x lochiae) x leucogigas</i>
Liberty Bar	<i>lochiae x aurigeranum</i>
Little Pinkie	<i>(lochiae x macgregoriae) x loranthiflorum</i>
Littlest Angel	<i>lochiae x pauciflorum</i>
Lochmin	<i>lochiae x jasminiflorum</i>
Lovey	<i>konori x</i>

	<i>((phaeopeplum x lochia) x zoelleri)</i>
Mrs.Elizabeth Miller	<i>((phaeopeplum x lochia) x leucogigas)</i> <i>x laetum</i>
Overflow	<i>christianae x lochia</i> F2
Pacific Shower	<i>(lochiae x macgregoriae) x christianae</i>
Pendragon	<i>(lochiae x laetum) x macgregoriae</i>
Penrose	<i>lochiae x aurigeranum</i>
Red Rooster	<i>zoelleri x (lochiae a javanicum)</i>
Robert Bates	<i>(zoelleri x lochia) x konori</i>
Rob's Favourite	<i>lochiae x macgregoriae</i>
Saint Valentine	<i>lochiae x gracilentum</i>
Shantung Rose	<i>(phaeopeplum x lochia) x</i> <i>(leucogigas x laetum)</i>
Tetramum	<i>lochiae hybrid x macgregoriae</i>
Thomas Becket	<i>((zoelleri x lochia) x zoelleri)</i> <i>x (aurigeranum x zoelleri)</i>
Tropic Fanfare	<i>javanicum x lochia</i>
Veronica Clancy	<i>(christianae x lochia) x zoelleri</i>
Wentworth	<i>konori x lochia</i>
Weston Glow	<i>(javanicum x lochia) x laetum</i>



R.'Lochmin'

Crosses between different forms of *R.lochia*.

In recent years there have been many crosses made between different forms of *R.lochia*, i.e. *R.lochia* coming from different mountain tops in North Queensland, but there have been no reports of worthwhile improvements on the parents.

There have also been many instances of plants from different mountain tops being selfed, but again there have been no reports of any improvement on the parent or differences from the parent among the seedlings.

Recently I saw a plant in flower of a cross made by Dr. John Rouse between forms of *R. lochiae* from two different mountain tops. The leaves were obovate in shape suggesting the parents were either the Thornton Peak form or Mount Finnigan form. The flowers however were possibly the best flowers of *R. lochiae* I have seen. They were larger than usual and a deep rich red colour.

Hybridisation between *R. lochiae* and non-Vireya rhododendron species.

There have been no reports of hybrids being made by crossing *R. lochiae* and species in another genus apart from Rhododendron.

In the Journal of the American Rhododendron Society (1991) 45(1): 6-12 Dr. John Rouse²² and Os Blumhardt describe the hybrid R.'Little Pioneer' grown from seed sown by Os Blumhardt by crossing *R. lochiae* with *R. virgatum* from the section *Rhododendron*.

Dr. John Rouse later repeated the same cross.

In the Journal of the American Rhododendron Society (1991) 45(4) 218, Dr. John Rouse²³, Dr. Elizabeth Williams and Professor B. Knox describe a cross made by Dr. Rouse between R.'Arthur's Choice' and *R. ovatum*. In the article there are colour photographs illustrating both parents, and the resultant hybrid. This is a cross between a Vireya, R.'Arthur's Choice' which is a *R. lochiae* hybrid and *R. ovatum*, an evergreen azalea. The hybrid had an attractive pink flower but unfortunately has since died. This was the only cross that has ever flowered between a Vireya and an evergreen azalea. It is unfortunate that the hybrid has not survived.

It is worth reporting a number of other crosses made between *R.lochiaie* and a non-Vireya Rhododendron species, but unfortunately all seedlings have probably died.

The crosses were all made by Dr. John Rouse.

R.lochiaie x *R.championae*

12th February 1983

26 seedlings, hybridity confirmed

October 1983 only five were left

November 1983, all were dead

R.lochiaie x *R.simsii*

12th February 1983

Four seedlings

December 1983, weak chlorotic seedlings were all dead

R.lochiaie x *R.tashiroi*

17 seedlings, all died

R.lochiaie x *R.prunifolium*

Massive germination

Hybridity confirmed

All died



R.'Arthur's Choice'

Commercial possibilities

To date large numbers of *R.lochiae* hybrids have not been available for sale commercially, but there has been a steady demand for those plants which are available, and sales depend on this supply.

Varieties available vary in different localities but probably the most common are Coral Flare, Fire Plum, Tropic Fanfare, Liberty Bar, Littlest Angel and Saint Valentine.

There is one problem that has arisen commercially, and this is that similar hybrids with the same parentage raised in different places, have been given different names in different countries and also in different localities within the same country. This is a problem that is virtually impossible to control.

Conclusion.

Donald Teese and Ray Weeks conclude their article "The Search for a White *Rhododendron lochiae*" in "The Rhododendron" 22-3-2 by saying that "variation in leaf colour, size and shape seems to be considerable. Flower colour varies from pale red to deep scarlet, as yet no flowers of any other colour have been seen in the wild. Plants that have flowered in Melbourne since their return have all been red. Reports of rhododendrons growing on Hinchinbrook Island, Mount Spec (near Townsville) growing on native figs, and many other sites are frequently encountered. However until plantsmen able to identify rhododendrons actually collect material in the wilderness, these elusive new forms or species must remain as tantalising rumours".

Although *R.lochiae* is the only rhododendron species to have been discovered in Australia, it is not impossible that other species of rhododendron, as yet undiscovered, exist in the mountains of North Queensland. Reports from unqualified observers, at first of a plant with yellow flowers, and later of one with white flowers, but in other respects similar to *R.lochiae* have come to Melbourne in past years. As to whether these plants are in fact rhododendrons we are uncertain, but certainly further botanical exploratory

work needs to be done in the North Queensland mountains where *R.lochiae* has its home.

The late Dr. L. J. Brass, a famous plant collector who led Archbold expeditions to Papua New Guinea, shared my view. In a letter to me in August 1967 he wrote that he thought "it entirely possible that rhododendrons other than *R.lochiae* remained to be discovered on the mountain tops of far north-east Queensland. No doubt all of these peaks have been climbed, but some still have to be ascended by botanists or people interested in looking for rhododendrons. The reports of rhododendron like shrubs with white and yellow flowers would be well worth investigation".

We already have a *R.brassii*, a species of rhododendron from Papua New Guinea, but how wonderful it would be to find a new rhododendron species in North Queensland. I have already selected a provisional name, *R.fleckeri*²⁴ named after North Queensland's most famous Naturalist, Dr. Hugo Flecker, a Radiologist who commenced his specialty at Prince Henry's Hospital in Melbourne, but later moved to Cairns to continue his medical work, and also follow his interest in Natural History. I worked at Cairns Hospital during 1947-48 and it was my pleasure to know him.



R.lochiae Hodgins Nursery

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