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BOTANICAL NOTES ON QUEENSLAND.

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No. V.—The Forests or Scrubs.

The general impression about Australia is that its interior is of a desert character and generally more or less denuded of trees. Whether this is true of any desert region may be questioned. The most arid regions of the world have trees or shrubs of some kind. Even the shifting sands of the Nefood of Arabia or the African Sahara have their stunted vegetation, and these regions are continually interrupted with finely timbered plains. The stony deserts of Central Australia are rare and exceptional. On these nothing is to be seen but a solitary clump of *Polygonum junceum* or of Mulga (*Acacia aneura*). The vast plains of the interior are however covered with trees, and when these grow in thickets they go by the colonial name of "scrubs." The term is of very varied application. Just as the trees in different localities are of different kinds and different heights, so are the scrubs. There is the greatest possible diversity between what is called a "scrub" in New South Wales, in Victoria, and in Queensland. The trees are different and the whole aspect is different. To describe the distinctive features of each would be a kind of descriptive botany for each colony. A scrub is usually a dense thicket of the trees which happen to be most common in the locality. The term forest would best suit some of these masses

of vegetation, and the term thicket others. In reality the word scrub is an incumbrance because it confuses by classing under one term the most diversified features. Still as it is employed everywhere in the colonies I suppose we must put up with it and try to render its ambiguity less misleading by descriptive explanations. This is the object of the present paper, and it proposes to deal with the scrubs of Queensland.

In a former work* I have described at some length what is meant by one kind of scrub in South Australia. This is what is known as Mallee. It covers many thousand square miles of flat country on the low lands between the south bank of the River Murray and the sea. Through all this vast extent the land is thickly and almost exclusively clothed with a dense shrubby growth of *Eucalyptus*. I do not pretend to determine the species since there are three or four and there may be more, *E. oleosa*, F.v.M., is one of the species and *E. dumosa*, A. Cunn. is another, with occasionally trees of *E. gracilis*, F.v.M. But which of the two first predominates I cannot say. They are not trees: instead of a trunk or stem, there rises from each root a cluster of slender stalks scarcely an inch in diameter, which ends at from eight to fourteen feet in height in a cluster of pale olive leaves. All round the stem, small dry withered branches stand out. These represent successive bush fires which sweep over the plains, at intervals of about three years or more, for it takes three years growth to place the bushes in a state of thickness sufficient to feed a fire again. The soil is hard and level, almost indurated, of yellow or brown colour and with abundance of brown polished or glazed rounded pebbles of iron oxides. There is more sand than clay in the ground, but this varies. In many places it is soft and boggy, or again covered with sand and even crystals of selenite of large size. Besides the Mallee as the *Eucalyptus* hicket is called, there is but little in the way of shrubs or trees.

* Geological Observations in South Australia, London, 1863.

On the rising ground one may find clumps of Pine (*Callitris robusta*) and in the clay flats open forests of Box (*E. hemiphloia*) but otherwise the Mallee is a dense thicket of Eucalypts, bushes of the whiptick pattern I have described. The view over one of these areas of Mallee is very peculiar. From the top of any moderate elevation, one looks over an immense undulating sea of yellowish-brown bushes. In the far distance one may observe a blue outline of some solitary hill or granite peak, otherwise the monotonous dun outline of the horizon is unbroken, silent, and motionless except where the scrub hen (*Leipoa ocellata*) raises its mournful note, or the wind stirs the stiff branches near.

Such thickets as these are absolutely impenetrable. The bushes oppose an effectual obstacle to both man and horse. But there is nothing for which they need be penetrated. They are waterless regions and there is no grass. A few of what are called scrub cattle have tracks on the outskirts, where they live and breed much to the annoyance of the settlers near. Horsemen sometimes follow them but any attempt to go off the track is sure to result in the clothes being torn to pieces. As an instance of what a barrier these scrubs are, I may mention that in 1859 I had to ride a distance of 25 miles to skirt a scrub between two stations in the Tatiara country (Victoria and South Australia) that were only six miles apart. This was the usual road between Yarrak and Lowloit the stations in question. In 1860 the blacks were induced by threats and promises to cut a road through the Mallee which is now generally used and has become a good beaten track.

Such scrubs as these are not known in Queensland, but there are others quite as impenetrable. But in order to institute a better comparison, I will describe some other thickets. In South Australia, on the borders between that colony and Victoria it is not uncommon to meet with almost impenetrable thickets of *Banksia marginata* (Honeysuckle) in marshy places. The trees

are poor and stunted, but grow with a very straggling virgate habit out of a thick tenacious yellow clay. One remarkable feature in these scrubs is that they are infested with the venomous *Hoplocephalus curtus* to an extraordinary extent when the water has dried and the grass is long.

In Tasmania there are thickets or scrubs of various kinds. On the north side of the Island the dense growth of the Pine *Arthrotaxis cupressioides*, Dom., makes some of the mountains quite inaccessible. On the south-east side the spurs of Mount Adanson and the Hartz Mountains between Port Esperance and Recherche Bay are clothed with a scrub of *Pomaderris elliptica*, or as they term it pear-tree. It grows in close masses of saplings some 15 or 20 feet in height and scarcely any one would make a way through such a thicket unless with an axe. The same kind of scrub is seen on the spurs of the Dandenong Ranges near Melbourne as well as on the south-east coasts of New South Wales. At Cape Otway and in some portions of the above Dandenong Mountains there is a scrub of beech (*Fagus cunninghami*) a lofty tree with most graceful myrtle-like foliage of every variety of colour. Then there are fern tree scrubs in the Western Port, Gipps Land, and other districts where the fern tree is principally *Alsophila excelsa*. There are also fern tree scrubs in Tasmania, but these are principally constituted by the shady *Dicksonia antarctica*.

With a knowledge of this diversity in the composition of what is called a scrub, it will not surprise us to learn that the masses of vegetation which go by that name in Queensland are of a quite peculiar character. I have already in the course of these notes dealt with the river scrubs on the eastern side of the watershed. These are properly speaking forests, tropical forests with the character of the Indian jungles. They comprise very large trees with an undergrowth of ferns, and in the tropics abundance of *Calamus australis* a climbing palm with long thorny tendrils. Without a scrub-knife, an instrument which is a combination of

a thin sword-blade and a bill-hook, such forests are absolutely impenetrable, and even then the Lawyers as the *Calamus* is called, form a most irritating and effectual obstacle. To this drawback may be added the Stinging Tree (*Laportea moroides*) the sting of which is fatal to horses. The soil of such scrubs is of the richest description. I think it would be better if the term "scrub" was not applied to these forests. They are so utterly different from what is included under that name in other parts of the colony that jungle would be a far better expression. We find in them a very large proportion of genera and species which are characteristic of the Indian Archipelago and China, while the characteristic Australian genera such as *Eucalyptus*, *Acacia*, and *Banksia* form a comparatively small portion of the vegetation. There is one peculiarity about them to which attention has not been drawn as a mark of distinction. In the true Australian scrub usually one or two species predominate, in fact almost exclude every other. The jungle forests are of a much more mixed character. No one genus or even species gives its character to the forest. If there be any apparent exception to this, it is that in the tropics the climbing palm (*Calamus*) is very abundant and nearly every tree has its stem variegated by the pretty climbing Aroid, *Pothos loureiri*. Another very common Aroid climber is *Rhipidophora quinata*, Schott, called in most places the climbing fern. It clasps the stems of the tallest trees in succulent snake-like smooth vines about two inches in diameter, sending forth at every few inches enormous pinnate leaves a couple of feet in length. In New South Wales, such forests are called "Brushes."

But the characteristic scrub of Northern Queensland is that called Brigalow which covers so much of the tablelands of the colony. Every one who is familiar with the works of the early explorers must remember how frequent are the reference to "Brigalow." In Leichhardt's "Overland Journey to Port Essington," it occurs at almost every page. Before I visited

Queensland I found a great difficulty in finding out what Brigalow signified. The only attempt at an explanation is in the excellent Treasury of Botany, but there the account is given by one who had evidently never seen the scrub referred to, and took his description from others. Yet it is not very difficult to characterize it and it is very uniform in its features wherever it is met with. Brigalow is an *Acacia* forest where the trees are of good height and size, seldom rising more than about 100 feet above the ground. The species in most places is *A. harpophylla*, F. v. Muell. The name is derived from the sickle-shape of the leaves which moreover are of a peculiar bluish grey colour. This gives the scrub a silky or hoary appearance never to be mistaken, and thus one can tell a clump of Brigalow at some considerable distance. The bark is dark brown, very rough and furrowed and the general habit of the tree is sordid and straggling. In poor soils this is especially so, but in the rich black volcanic soils, it does not so readily become a tree, but rises up in a luxuriant dome of foliage from the ground. The sap-wood is yellow and somewhat soft, but the duramen or heart-wood is of a rich purple-brown colour, emitting a fragrant odour of rosewood when fresh cut. This is a character which it shares with many *Acacia* trees.

This tree *Acacia harpophylla* is the only one which is recognised as Brigalow. There are two or three other species of *Acacia* always found near it, but they are never called Brigalow, and this species moreover is so very marked in its characters that it cannot be mistaken for any other. The bluish-grey appearance, the long sickle-shaped rigid leaves and the rough furrowed bark when once seen will always be readily recognised. Near the scrubs of the Expedition Range I remember seeing a large quantity of Brigalow where the leaves from some cause were pale yellowish-brown. This I should say was a variety; but even then there was no mistaking the Brigalow from its other characters. The scrubs formed of these trees are very dense as they grow only close together. Generally speaking there is a tangled under-

growth and over a very large extent of country I observed that this was mainly composed of a thorny bush of the Apocynææ, named *Carissa ovata*. The leaves are small and bright green and the flowers are white, but quite inconspicuous. Unlike most of the dogbanes, this little bush produces a very pleasant fruit which is both agreeable and wholesome. It is like a Sloe, egg-shaped and about half an inch long. It exudes a viscid milky juice and contains a few woody seeds. Some persons are afraid to indulge in these berries, no doubt owing to the bad character of the order, which contains some of the most poisonous plants known. I can however testify that the fruit of *Carissa ovata* is both agreeable and wholesome, and I never knew an instance of any evil consequences, even when they were partaken of most abundantly. The fruit ripens in April, May, and June. It may serve to allay the fears of some who are suspicious, to remind them that the Cow-tree whose milky juice is so freely partaken of by the natives of British Guiana is one of the Dogbanes (*Tabernaemontana*).*

Side by side with Brigalow we meet with two other species of *Acacia*, but they are not so abundant and never form more than a minor ingredient of the scrubs. One is *A. excelsa* which in the Treasury of Botany is the name given to Brigalow. Its habit is quite different. Its leaves are green, somewhat pendulous and the bark is black, but not furrowed in the manner of true Brigalow. It may be easily confounded with the other *Acacia* which is found in these scrubs, namely *A. salicina*. This is a tree with long pendulous branches along which the rather small ovate-lanceolate leaves hang down somewhat like the weeping willow. The flowers are in little yellow globular heads, and the bark though rough is less so than either of the other two species. It is a pretty tree and forms by its drooping habit an agreeable

* We have three species of this genus in North Queensland, one very common and yielding an abundance of milky juice.

contrast to the Brigalow, but though common it never grows in the form of scrubs.

Both these *Acacia* trees were described very early in the botanical history of this continent. Neither of them is so common as the Brigalow, and yet strange to say the latter which is found scattered over an enormous extent of country remained undescribed until it was found by Baron von Mueller in his overland journey from the Victoria River with Augustus Gregory in 1854. This is the more remarkable when we remember that Sir Thomas Mitchell was a zealous botanist, and on his journey to the Barcoo made extensive collections which Lindley described for him in the published account of his journey.* He passed through extensive forests of this very tree, but I suppose he must have regarded it as already described as it was so common, or confused it with some species that he had seen elsewhere. This was probably the case with Leichhardt who was the first to introduce the native (?) name of "Brigalow" to the public. There can be no doubt however that the species was never sent to Europe by any of the earlier botanists.

It is somewhat singular that this species of scrub is not confined to the poor light soils and stony ground. In the rich black soils of what are called the downs, dense Brigalow thickets are met with. These soils are derived from volcanic rock, and boulders of vesicular dolerite rock with glazed ironstone pebbles are always scattered amidst the black earth. In such localities there is usually an abundant and luxuriant growth of fodder grasses such as *Andropogon sericeus*, *Anthisteria australis*, *Perotis rara*, *Sporobolus lindleyi*, *Leptochloa subdigitata*, *Stipa micrantha*, *Aristida calycina*, *A. ramosa*, *A. vagans*, *A. arenaria*, and occasionally *Triodia mitchelli* or porcupine. But while such grasses appear in abundance in some parts of the volcanic soils and downs, they quite disappear in places where the Brigalow is

* "Tropical Australia," by Sir Thomas Mitchell, 1 vol., London, 1846.

abundant and the dry, black cracked earth looks singularly arid and desolate. But the Brigalow (I am speaking now only of the species *A. harpophylla*) is here a rich looking and luxuriant tree, and as I have already remarked, rising in a mass of foliage from the very earth. It is said that of late years the Brigalow has considerably increased and that the pastoral qualities of many portions of the downs have much deteriorated in consequence. From the amount of young trees on these downs I have no doubt that Brigalow has spread rapidly, and is spreading. Mr. O'Shaunnessy the well-known botanist of the Emerald District informs me that he has discovered the cause of this. He finds that the root suckers of the tree which spread a long way from the stem, always send up shoots when they are exposed and bruised. This happens frequently now from the abundance of cattle which keep down the grass. As far as I am aware the pods or seeds are not much eaten so that the explanation above given seems the only feasible one. If some means cannot be found to check the growth of the shoots, the value of the sheep and cattle runs will be reduced in an alarming way.

The black soil downs are also covered by a very beautiful crimson flower which deserves cultivation in our gardens as much as any member of the Australian indigenous flora. It is like a Waratah on a small scale with this difference, that it belongs to a different order (*Thymelææ*) and is very much more abundant; I refer to the *Pimelea hæmatostachya*. When first I saw the plant on the black soil of the Westwood Railway Station, about 30 miles west of Rockhampton, I thought it must be an escape from some garden. The beautiful head of scarlet flowers, variegated with the bright yellow anthers made it a most conspicuous addition to the flora of the plains. But as I travelled west I found the plains to be perfectly crimson from the abundance of these plants. I am told that it has increased very much of late years, and as it appears not to be eaten by stock while the grasses all round are devoured, there is every probability that it will

go on increasing. This and the African Marigold (*Tagetes glandulosus*) bid fair to overrun all the open country. They form a thick growth already, the latter sending up stems which are eight and ten feet high.

I may here remark in passing, that the black soil becomes almost impassable in wet weather. It forms a thick and stiff tenacious clay, through which the roots and stems of the grasses interlace, making it as tough almost as gutta percha. It clogs round the feet of cattle and horses so that they stagger about with these enormous clay boots on their feet. Those who have had the misfortune to be overtaken by rain when driving through such soil, will like myself, probably never forget their experiences. Travelling soon becomes an impossibility. The wheels become large, clumsy disks of black clay and grass requiring long and severe work with a hatchet or spade to set them free. When this process has to be repeated every mile or so, and the rate of travelling is about a mile an hour, one can guess what sort of progress is made and what tedious labour entailed.

In the rich soils the vegetation of the Brigalow is more uniform and there are but few other trees noticed besides Brigalow. In the poor soils the scrub is more dense. Interspersed in all such thickets we find four or five trees of small size which are widely distributed throughout Australia, *Eremophila mitchelli* is one of them. This also goes by the name of Sandal Wood from the pleasant odour given off by the wood not only when freshly cut, but also for a long time afterwards. It is said that this wood will keep away that domestic pest of Queensland households the *Blatta* or cockroach. I cannot confirm this statement. I had a good sized billet cut and planed, and the odour from it was so strong as to perfume one of my trunks in which it was placed, but the cockroaches treated it with the utmost disdain. They ran over it and laid their eggs under it just as if it had been put there for their accommodation. This tree has been found throughout the whole extent of Australia. I have seen it on the

edge of the salt-lake region north of Adelaide, and all explorers and collectors have recorded it from central Australia. Forrest in his last exploration traced it to the desert regions of North-west Australia not far from Nichol Bay. Thus we see it is a desert tree found all through the arid regions of tropical and sub-tropical Australia. It well deserves its name of *Eremophila* (lover of the desert) as it is found in no other regions. In many places it goes by the name of Dogwood. It has small dark grey-green linear leaves, and has a bushy appearance by no means inelegant. There are two other species generally associated with it, but not so common. One is a bush with very large brownish-red campanulate flowers. This is *E. longifolia*. The other is a small tree with larger leaves.

Occasionally through all the Brigalow one meets with trees of *Alphitonia excelsa* a member of an order (*Rhamnaceæ*) not at all well represented in this part of Australia. It may be easily known at a distance by its dappled aspect, for the oval leaves are a bright shining green on one side and white underneath, and thus it always has a speckled appearance. Like the sandal wood it is very wide spread, and is as common in the dense tropical jungle as in the desert. This feature is quite exceptional, for there is little else common to the two floras.

In all the Brigalow scrubs in the neighbourhood of the Dawson, Nogoia, Comet and Belyando Rivers one meets with occasional patches of the Bottle Tree, or *Sterculia rupestris* and *S. trichosiphon*. The two species may be at once distinguished by their foliage. In other respects they are very similar. The stem is somewhat like an elongated soda-water bottle, and has a green, succulent, faintly wrinkled or smooth bark. They always grow in patches, not clusters, and generally in very thick scrub. It is said that the soft juicy tissue of the stem can be eaten and that many a wanderer in the bush has staved off hunger by its means. The young shoots and roots of young trees are agreeable and refreshing. The nuts are also eaten.

Atalaya hemiglauca, a member of the *Sapindaceæ* is another widely spread inhabitant of the desert regions and a constant accompaniment of the Brigalow scrubs. I believe it was found abundantly in Central Australia and is included in Baron von Mueller's list of the plants brought by Forrest from North-western Australia. It is an abnormal member of the Sapindaceous tribe, with emaciated looking pinnate leaves, but the pinnæ are long and so far apart as scarcely to be recognised as such. I have already remarked in a former part of these papers how beautifully fragrant are the graceful clusters of its small white flowers, and how in the desert it is a tree which may be easily known by the multitude of insects it attracts in flowering time. Afterwards it is equally conspicuous from the abundance of small yellow, winged seeds. These are like the sycamore except that they are not in pairs. The wood is very hard but the trees are always too small to be of much use. With it, scattered here and there in the more open plains is another abnormal member of an order which cannot count Australia for its stronghold. This is *Heterodendron oleifolium* which belongs to the *Boraginææ*. It is a good deal like *Atalaya* at a distance, but a nearer inspection of course shews a vast difference in the foliage &c. It is not at all rough in the leaf. *Ehretia saligna*, R. Br., is another member of the same family found in the Brigalow. It is essentially a small desert tree. Mr. Alexander Forrest found it on Sturt's Creek on the edge of the Central Desert and I have little doubt that it extends through the whole interior. This is also true of a pretty little blue flower of the same order, which is found on all the more open Brigalow downs. This is *Trichodesma zeilanicum* R. Br., easily known by its grey silky leaves and blue flowers. I first noticed it on the granite slopes of Mount Cudtheringa at the back of Townsville, but afterwards found it was a common plant on all grassy plains throughout tropical Queensland. Forrest gathered it in North-west Australia, and in Gregory's Expedition Baron von Mueller brought it from Sturt's Creek.

Three or four species of *Capparis* are very common in all the Brigalow scrubs. *C. lasiantha*, R. Br. is the one most frequently met, and this is dispersed throughout Australia as a true desert plant. In Western Australia it is found as far south as the Gascoyne River, and on the Eastern side of the continent it extends far within the borders of New South Wales, always following the Brigalow. The other species are *C. nobilis* with large globular fruits, *C. hemistriatus* a small but rather pretty shrub seldom more than two feet high, *C. canescens* a small tree reaching 30 feet high; *C. mitchelli*, another shrub about half the height, and finally *C. ornans* a climber which spreads its large white showy flowers over many of the bushes and trees. In the scrubs near the coast one occasionally meets with *Randia densiflora* which I mention here for the sake of calling attention to its great beauty as an ornamental shrub. It is certainly a wonder that it has not been introduced into some of our gardens, where its thick clusters of crimson blossoms ought to make it a general favourite. Two species of Leguminous plants may be mentioned in this place. One is rather rare, *Barklya syringifolia*, with splendid racemes of rich yellow flowers possessing a fragrance far more delicate and rich than the well-known *Acacia farnesiana*. It is a very abnormal member of the Leguminosæ and is quite peculiar to Australia. The other tree is *Cassia brewsteri*, equally conspicuous from its flowers or fruits. The former are in long yellow racemes very like the *Laburnum* of Europe. The pods very long, black and ornamental, the well-marked dissepiments between the seeds adding much to the peculiar appearance. Messrs. Bailey and Scortechini are of opinion that there are two distinct species confounded under this name. I should add that the plant just referred to, *Acacia farnesiana* is not uncommon amid the Brigalow. It is scarcely necessary to remind readers that this species is widely distributed over the earth's surface, being found in Africa as well as India and the Indian Archipelago. It differs from most Australian species in the almost orange hue

of the flowers, and the clusters of black swollen pods like bunches of black fingers. *Acacia oswaldi* is a common bush in the scrubs, with small phyllodia not very unlike the Mulga (*A. aneura*) of the central deserts. *Albizza basaltica* is as its name implies common on the rich basaltic downs amongst the Brigalow. This has been already referred to as being so useful for stock-whip handles. It goes by the absurd name of "Dead Finish." The wood is extremely tough and it is of good colour, like pale cedar and takes a beautiful polish. The tree is usually very small, not exceeding 15 feet.

A common tree amongst the more open portions of the scrub where the Brigalow begins to get less abundant, is *Alstonia constricta*, one of the *Apocynæ*. Like the Indian *Alstonia* it contains a bitter principle which is of great value as a drug. Dr. Bancroft of Brisbane has exported a small quantity of the wood, every portion of which contains an extraordinary quantity of the bitter principle. From experiments at the Brisbane Hospital I have been given to understand that it was found as efficient as quinine. It goes by the name of "Bitter Bark," which is also a common epithet for *Petalostigma quadriloculare* which also occurs in the scrubs. I have noticed both these trees from South Queensland to the Carpentarian waters. The wood of both is used to form drinking cups, which for a long time converts into a bitter infusion the water which is placed in them.

There is an absence of grasses in the poorer soils of the Brigalow, and instead one notices principally a thick growth of *Sida cordifolia*, *Polymeria calycina*, *Evolvulus alsinoides* and *Vittadinia scabra* and *V. australis*, which carpet the ground with an almost constant bloom of yellow, pink, white, and blue flowers. Occasionally we find scattered on the plains amongst Brigalow, bushy clumps of *Apophyllum anomalum*, which looks exactly like the wiry bushes of *Polygonum junceum* such as we find in the interior. We see also a few trees here and there of *Owenia acidula* with its very acid fruits and pendulous branches of bright

green broadly pinnate leaves. It is a graceful addition to the scrub. *Grevillea striata* is found at times in all inland scrubs as far as Cape York. It presents a most peculiar appearance with its pendulous ribbon-like leaves a foot or so in length, and half an inch wide. Much of the same habit is *Hakea lorea*, only its long leaves are cylindrical and about an eighth of an inch in diameter. *Canthium buxifolium*, *C. vacciniifolium*, and *Ventilago viminalis* may complete the mention of stragglers amid the Brigalow. To mention all would be a long list.

As a rule, as I have already stated, where Brigalow is thick it almost excludes every other kind of vegetation, except of Salt Bush (*Rhagodia spinescens*) and a few other inconspicuous plants. Brigalow may therefore be understood to mean an almost exclusive scrub of *Acacia harpophylla*, or thickets of a mixed character to which the various trees and shrubs mentioned in this paper contribute in varying proportions. True Brigalow extends from the northern tributaries of the Darling to about Lat. 19 S. It may extend further north, but I have not seen it. Of its western limits I have no means of judging. It is found on the head waters of the Barcoo and Flinders. I have not seen it nearer to the east coast than about 30 miles. The following is a list of a few of the plants noticed by me in the Brigalow scrubs in the northern territory and not referred to in the preceding pages.

Clematis microphylla, DC.

Ranunculus parviflorus, DC.

Hibbertia stricta, R. Br.

Lepidium ruderales, L.

Polanisia viscosa, DC.

Capparis sarmentosa, A. Cunn., *C. canescens*, Lindl., *C. loranthifolia* Lindl.

Hybanthus suffruticosus, Ging., *H. floribundus*, Walp.

Pittosporum phyllæoides, DC.

Bursaria spinosa, Cav. The form found in the Brigalow differs much from that common in South Australia, and it flowers

at a different time—May and June. Bentham had much hesitation in uniting the two species.

Citriobatus parviflorus, A. Cunn.

Cheiranthra linearis, A. Cunn. In some patches of Brigalow on the higher portions of Expedition Range. This is the only record of its occurrence in the tropics. It is not uncommon at Stanthorpe.

Polygala japonica, Houtt.

Frankenia pauciflora, DC.

Cerastium vulgatum, L.

Stellaria media, L.

Polycarpon tetraphyllum, L.

Polycarpæa synandra, F. v. Muell.

Portulaca oleracea, L., and *P. filifolia*, F. v. Muell.

Calandrinia balonensis, Lindl., *C. pusilla*, Lindl.

Hypericum gramineum, Forst.

Sida corrugata, Lindl., *S. virgata*, Hook., *S. pleiantha*, F. Muell.,
S. rhombifolia, L.

Abutilon tubulosum, Hook., *A. mitchelli*, Benth., *A. subviscosum*,
Benth., *A. muticum*, G. Don.

Urena lobata, L.

Hibiscus ficulneus, L., *H. trionum*, L., *H. brachysiphonius*, F.v.M.,

H. divaricatus, Grah., *H. sturtii*, Hook., *H. tiliaceus*, L.

Sterculia diversifolia, G. Don.

Erythoxylon australe, F. v. Muell.

Tribulus terrestris, L., and *T. cistoides*, L., especially common on
the black soil.

Zygophyllum iodocarpum, Muell.

Erodium cygnorum, Nees.

Oxalis corniculata, L.

Eriostemon difformis, A. Cunn.

Boronia ledifolia, J. Gay.

Phebalium glandulosum, Hook.

Philotheca australis, Rudge.

Geijera salicifolia, Schott, *G. parviflora*, Lindl.

Atalantia glauca, Hook.

Owenia venosa, F. v. Muell.

Flindersia maculosa, F.v.M.

Celastrus australis, Harv., *C. bilocularis*, F.v.M.

Stackhousia monogyna, Labill.

Cryptandra amara, Sm.

Vitis nitens, F. Muell.

Dodonæa peduncularis, Lindl., *D. vestita*, Hook., *D. adenophora*,
Miq.

Jacksonia scoparia, R. Br.

Viminaria denudata, Sm. I believe this has not been previously
recorded from Queensland.

Aotus mollis, Benth.

Gastrolobium grandiflorum, F. v. M.

Dillwynia floribunda? Sm.

Hovea longifolia, R. Br., *H. longipes*, Benth.

Crotalaria mitchelli, Benth., *C. dissitifolia*, Benth.

Psoralea eriantha, Benth., *P. tenax*, Lindl.

Indigofera linifolia, Retz., *I. glandulosa*, Willd., *I. trita*, L., *I.*
australis, Heyne, *I. brevidens*, Benth.

Sesbania aculeata, Persoon. Generally in old watercourses.

Swainsonia galegifolia, R. Br.

Zornia diphylla, Pers. I have been inclined to think there are
two species.

Desmodium sp. Two or three specimens of this genus were
misaid. It is well represented in the poor scrubs, especially
in stony ground.

Glycine falcata, Benth., *G. tabacina*, Benth.

Hardenbergia monophylla, Benth. Very common in scrubs.

Erythrina vespertilio, Benth.

Vigna vexillata? Benth.

Atylosia scarabæoides, Benth.

Barklya syringifolia, F. v. M.

Cassia brewsteri, F. v. M., *C. australis*, Sims, *C. eremophila*, A.

Cunn., *C. artemisioides*, *C. sturtii*, F. v. M.

Bauhinia cunninghami, Benth., *B. carronii*, F. v. M.

Neptunia gracilis, Benth.

Acacia triptera, Benth., *A. conferta*, A. Cunn., *A. sentis*, F. Muell.,

A. penninervis, Sieb., *A. neriifolia*, A. Cunn., *A. podalyriæfolia*

A. Cunn., *A. stenophylla*, A. Cunn., *A. implexa*, Benth., *A.*

doratoxylon, A. Cunn., *A. cunninghami*, Hook., *A. spectabilis*,

A. Cunn., *A. bidwilli*.

Rubus parvifolius, L.

Ceratophyllum demersum, L.

Terminalia muelleri, Benth., *T. oblongata*, F. v. M.

Macropteranthes leichhardtii, F. Muell. This was found in the

Scrub between Emerald and Neathersfield by Mr.

O'Shannessy.

My specimens of Myrtaceæ and Compositæ, were with few exceptions, destroyed in the Garden Palace Fire, together with grasses, ferns, and all but the few remaining specimens to be enumerated.

Dentella repens, Forst.

Canthium lucidum, Hook. and Arn. Rather common in all the

Brigalow west of Rockhampton. *C. oleifolium*, Hook. *C.*

buxifolium, Benth. *C. coprosmoides*, F. v. M.

Asperula scoparia, Hook.

Cucumis trigonus, Roxb.

Hydrocotyle laxiflora, DC.

Trachymene incisa, Rudge.

Daucus brachiatus, Sieb.

Loranthus longiflorus, Desr., *L. linearifolius*, Hook., *L. pendulus*,

Sieb.

Stylidium graminifolium, Swartz.

Velleia paradoxa, R. Br.

Goodenia glabra, R. Br. *G. grandiflora*, Sims.

Scævola spinescens, R. Br.

Wahlenbergia gracilis, A. DC.

Isotoma axillaris, Lindl.

Melichrus rotatus, R. Br.

Maba humilis, R. Br.

Jasminum racemosum, F. v. M., *J. lineare*, R. Br., *J. suavissimum*
Lindl.

Parsonsia lanceolata, R. Br.

Lyonsia eucalyptifolia, F. v. M.

Secamone elliptica, R. Br.

Gymnanthera nitida.

Marsdenia leichhardtiana, F. v. M.

Hoya australis, R. Br. Only on rocky places.

Artanema fimbriatum, Don.

The Brigalow is peculiarly rich in species of *Solanum*, but all my examples are destroyed.

Tecoma australis, R. Br.

Ruellia primulacea, F. v. M., *R. corynotheca*, F. v. M., *R. australis*
R. Br.

Justicia procumbens, L.

Erianthemum variabile, R. Br.

Myoporum deserti, A. Cunn., *M. debile*, R. Br.

Eremophila latrobei, F. v. M., *E. longifolia*, F. v. M., *E. polyclada*
F. v. M., *E. brownii*, F. v. M., *E. maculata*, F. v. M.

Verbena officinalis, L., *V. bonariensis*, L.

Spartothamnus junceus, A. Cunn.

Clerodendron floribundum, R. Br.

Mentha australis, R. Br.

Salvia plebeia, R. Br.

Anisomeles salvifolia, R. Br.

Prostanthera euphrasioides, Benth.

Teucrium integrifolium, F. v. Muell.

Ajuga australis, R. Br.

Plantago varia, Br.

Rhagodia parabolica, R. Br.

- Chenopodium auricomum*, Lindl.
Atriplex vesicaria, Hew., *A. halimoides*, Lindl.
Kochia lanosa, Lindl.
Salsola kali, Linn.
Amarantus macrocarpus, Benth.
Trichinum obovatum, Gaudich, *T. macrocephalum*, R. Br., *T. exaltatum*
 Benth.
Alternanthera nodiflora, R. Br., *A. denticulata*, R. Br.
Boerhaavia diffusa, Linn.
Petrophila sessilis, Sieb.
Conospermum sphacelatum, Hook.
Persoonia sericea, A. Cunn., *P. falcata*, R. Br.
Macadamia ternifolia, F. v. Muell.
Xylomelum salicinum, A. Cunn.
Grevillea longistyla, Hook., *G. polystachya*, R. Br., *G. robusta*, A.
 Cunn.
Hakea saligna, Knight.
Lomatia silaifolia, R. Br.
Banksia integrifolia.
Pimelea glauca, R. Br., *P. collina*, R. Br., *P. linifolia*, Sm., *P.*
leptostachya, Benth.
Petalostigma quadriloculare, F. v. M.
Euphorbia mitchelliana, Boiss., *E. drummondii*, Boiss., *E. alsinaeflora*
 Baill.
Poranthera microphylla, Brongn. On clay banks.
Beyeria viscosa, Miq.
Ricinocarpus bowmanni, F. v. M., *R. ledifolius*, F. v. M.
Bertya mitchelli, Mull Arg., *B. olæifolia*, *B. sp.* (*crotonoides*, O'Shan.
 MS.)
Alchornea ilicifolia, Muell. Arg.
Tragia novæ-hollandiæ, R. Br.
 This little plant stings just like the common house nettle.
Casuarina glauca, Sieb., *C. cunninghamiana*, Miq.
Thesium australe, R. Br.

- Santalum lanceolatum*, R. Br.
Exocarpus aphylla, R. Br.
Frenela robusta, Cunn. This tree occurs in patches in the Brigalow
 scrub far within the tropics, but always in the driest and
 poorest sandy soils. I have noticed that it seems particularly
 fond of soils derived from granite.
Araucaria bidwilli, Hook. Rare.
Cycas media, R. Br., On poor soils.
Macrozamia perowskiana, Miq. If I am correct in my identification
 this is very abundant on the edges of scrubs, and in the
 sandstone and trap ranges between the Comet River and
 Springsure. It is a noble tree like a palm, about 20 feet
 high. The ground about this neighbourhood is covered
 with the large nuts. Mr. Baily and Mr. O'Shannessy both
 are inclined to regard this as a different species.
 The few Orchids I was able to collect were destroyed in the
 Garden Palace Fire. Brigalow is not rich in them.
Bulbine bulbosa, Haw.
Arunidinella nepalensis, Trin.