

BOTANY OF THE RUSSELL GRIMWADE EXPEDITION

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GENERAL REPORT

Introduction

Sundry notes on vegetational features of the changing South Australian landscape between Murray Bridge and Adelaide were made by the writer from windows of the Adelaide Express on Monday morning, August 25, 1947, and during the afternoon he had opportunity to inspect the Botanical Gardens, Botany School (University) and Museum of that city, viewing the Tate and Ising herbaria and excellent carpological collection more recently brought together by E. Stirling Booth. But the Grimwade Expedition really commenced the following day at Port Lincoln, where its personnel had travelled overnight by ship from Adelaide.

Eyre's Peninsula

Before boarding the parlour coach that was to carry us over 1800 miles to Perth, via Eucla, Norseman, Esperance, Ravens-thorpe, Albany, Pemberton and Bunbury, opportunity was taken to visit a patch of natural scrub right in the township and to secure good flowering and fruiting specimens of *Eucalyptus diversifolia* and *E. incrassata* var. *angulosa* (Port Lincoln is type locality of this mallee eucalypt with large strongly ribbed fruits, up to an inch long; Robert Brown collected it there in March, 1802).

Travertine outcrops are conspicuous everywhere near Mt. Dutton, the Marble Range and toward Elliston, the limestone being used extensively for farm buildings and fences. *Eucalyptus cladocalyx* (Sugar Gum) occurs naturally in several places along the coast road, in groves of rather stunted broad-leaved trees, while *Melaleuca pubescens* (Moonah) and *Casuarina stricta* (Drooping Sheoak) are abundant everywhere—Crocker remarks [*Trans. Royal Soc. S. Aust.*, LXVIII, 162 (1944)] that they form "probably the most widespread association on Eyre's Peninsula." *Oxalis pes-caprae* and *Romulea rosea* were observed as common wayside weeds.

Along the limestone sea cliffs at Elliston we stopped for a glimpse of the Investigator Group (Flinders and Pearson

Islands) and were able to examine a formation of extremely stunted, almost prostrate *Eucalyptus incrassata* var. *angulosa*, no higher than its associate low tussocks of *Triodia irritans* (Porcupine Grass) and bushes of *Westringia Dampieri* in honey-scented bloom—the vegetation here has doubtless been dwarfed by the combined unfavourable effects of low rainfall on poor soil and frequent high winds from the sea.

About five miles west of Port Kenny on Venus Bay, lateritic cappings in mallee scrub have provided a veritable “wildflower garden” of small shrubs. Sixteen species were collected in the few minutes that we alighted there: the rich scarlet *Prostanthera calycina* (a mint-bush endemic in South Australia), paler *Correa pulchella*, light mauve *Lasiopetalum discolor*, golden *Acacia spinescens* and *Cassia eremophila*, and five orchids (including *Caladenia filamentosa*, the “Daddy-longlegs”) contributed to the riot of colour. Farther along the road toward Streaky Bay, the large bluish flowers of *Hibiscus Huegelii* were occasionally seen and admired.

Eucalyptus gomphocephala (Tuart) is the principal street tree at Streaky Bay; few other trees could be used to more advantage there than this one, thriving in the limestone terrain under a rainfall of about 10 inches. Ceduna, 248 miles from Port Lincoln and the last sizeable township on the South Australian west coast, has interesting patches of indigenous vegetation; outside the Post Office, flowering material was secured of *Atriplex paludosa*, *Kochia erioclada*, *Trichinium obovatum*, *Geijera linearifolia*, blue *Eremophila Weldii* and *Olearia pimeleoides* var. *minor*.

Near Colona Station (controlling 1400 square miles), the southern highway passes into a more arid region, where rainfall is unreliable and generally below 10 inches per annum. This belt of country (chiefly calcareous) is the “Ereamea” of C. A. Gardner [*vide* *Vegetation of W. Aust.*, 1944, p. 1] and we were to follow it for the ensuing 500 miles, as far as Balladonia Station (W.A.), where the taller mallee re-appears. *Eucalyptus oleosa*, some *E. incrassata*, patches of *Acacia Sowardii* (local “Myall”) and stunted *Melaleuca pubescens* (Moonah), many trees of *Myoporum platycarpum* (Sugarwood) *Exocarpos aphylla*, and occasional ones of *Santalum acuminatum* (Quandong) constitute the arboreal growth on sandy soils at Colona. Associated ground shrubs include *Kochia Georgei*, *Templetonia Battii* (peculiar to the Bight), *Geijera linearifolia*, *Eremophila scoparia* and *Olearia magniflora* (large and very handsome purple flower heads). A tall form of *Stipa variabilis*, flowering out of season, was conspicuous on sandy

rises, where the crucifer and composite families were well represented by small ephemeral herbs, e.g., *Alyssum linifolium*, *Stenopetalum lineare*, *Hymenolobus procumbens*, *Capsella pilosula*, *Brachycome lineariloba*, *B. ciliaris* and *Toxanthus Muelleri*.

Several alien weeds were frequent around the station homestead, notably Annual Cat's-tail (grass), London Rocket, Dwarf Mallow, Horehound and Wild Sage. An abrupt change was apparent on limestone depressions among the timbered sand-hills. Such areas were treeless, with cover of a halophytic type—*Frankenia foliosa*, *Plagianthus squamatus*, *Bassia obliquicuspis* and the curious prostrate *Kochia lobiflora* were collected *inter alia*.

Some attention was given to the cryptogamic flora on soil and bark, and specimens of a dozen different lichens were secured, including *Parmelia hypoxantha* from sand-hills—an intriguing species which readily detaches from the earth, curls up into balls and blows away until piled against some object by the wind; it is very rarely found in fruit, and Colona samples yielded a few well developed but sterile apothecia. Two lichens, *Lecanora sphaerospora* and *Buellia subalbula*, from limestone pebbles, were, apparently, known before only by the type collections.

Nullarbor Region and Great Bight

About ten miles west of Colona *Melaleuca pubescens* vanished from the roadside, its common associate *Casuarina stricta* having dropped out of the flora between Ceduna and Colona. In their stead, along the road toward Eucla, the umbrageous *Acacia Sodenii* ("Myall") becomes conspicuous and dominates the landscape in many places, bearing occasionally clumps of parasitic *Amyema quandang* (Grey Mistletoe); it was a disappointment not to have seen this useful, attractive, drought-resisting tree in blossom. *Acacia Oswaldii* (Umbrella Wattle) is rather similar in habit and often associated with it.

Approaching the head of the Bight, we pass over portion of the vast Nullarbor Plain—"one of the geographical wonders of the world," according to J. T. Jutson—devoid of all but low halophytic shrub growth and seasonal herbs. The Plain meets the sea eight miles south of White Wells in a succession of beetling 200-ft. limestone cliffs and a deviation was made to view this impressive escarpment. Of 15 plants collected in the vicinity of White Wells, eight were referable to the family *Chenopodiaceae* (viz., *Atriplex nummularia*, *A. vesicaria*, *Kochia erioclada*, *K. sedifolia*, *K. oppositifolia*, *Bassia uniflora*, *Arthrocnemum arbus-*

culum and *Hemichroa diandra*), pointing the aptness of the name "salt-bush steppe" for this particular community of plants.

From Nullarbor Homestead and Kunalda short trips north were taken to examine several of the shallow dry caves which abound on the plain. Under the favourable micro-climate obtaining in the shelter of these limestone sink-holes, welcome greenery is given by several perennial plants that would be too tender to survive the high winds and insolation above ground, notably: *Pleurosorus rutifolius*, *Parietaria debilis*, *Lavatera plebeja* and *Galium umbrosum*. Bushes of *Geijera linearifolia* occur both at Murrawijinie Cave (eight miles north of Nullarbor) and in "Bitumen" Cave, Kunalda, which was filled with a luxuriant growth of *Nicotiana Goodspeedii*—an indigenous tobacco having delicately scented flowers.

There is a change to mallee eucalypts and moonah again near the West Australian border, and at Eucla (ten miles beyond it) the highway descends rapidly to sea level over the Hampton Range. Really a limestone plateau escarpment, this "range" marks the westerly inland continuation of the Great Bight cliffs and apparently denotes a former shore-line, the saline flats and dunes at its base having been uplifted from the sea in comparatively recent geological time.

Euclonia

Eucla (with one inhabited building) is chiefly remarkable for its high moving sand dunes which threaten to overwhelm the deserted cable station, and immense clumps of *Nitraria Schoberi* (Nitre Bush) seem to be the only local shrubs that can keep pace with the smothering effect of blown sand. Inland from the encroaching dunes, a saline flat merges into the eucalypt scrubland (*E. gracilis* and *E. incrassata*, with *Melaleuca pubescens* toward the cliffs). West of Eucla the roadway follows the base of Hampton Range scarp—almost straight for more than 100 miles. Glasswort flats are succeeded by alternating myall woodland and eucalypt-moonah rises toward Madura (115 miles from Eucla).

Before ascending the escarpment again, the writer was enabled to examine its characteristic flora—in a steep moist cleft immediately behind Madura Homestead. *Eucalyptus oleosa* is dominant there and commonly associated with stunted *Melaleuca pubescens* (Moonah). *Pittosporum phillyreoides*, *Heterodendron oleifolium*, and *Eremophila alternifolia* (spotted pale magenta flowers on long pedicels) are tall shrubs, while *Rhagodia Preissii*, *Pomaderris Forrestiana*, *Olearia exiguifolia* and *O. Muelleri* were noted as frequent ground shrubs—all in bloom. Of particular interest

was a handsome spear-grass having thin cane-like stems (to 3 ft. high); it is either a distinct variety of the uncommon *Stipa breviglumis* or an undescribed species. *Bredemeyera volubilis* (Love-creeper) twined attractively among the lower shrubs, its blue flowers much larger than most examples to be met with in Victoria; a robust strain of the introduced blue pimpernel, *Anagallis arvensis* var. *caerulea*, also luxuriated as a weed around the small dam above the homestead.

Westward across Hampton upland, the country is very heavily rabbit-infested; in many places trees and shrubs are either dead or dying and no seedlings whatever are to be found of such valuable trees as the local Myall and Sugarwood. Belts of mallee scrub (*Eucalyptus oleosa* and *E. gracilis*), *Acacia Oswaldii* and *Melaleuca pubescens* are interspersed with grassy tracts and treeless flats carrying succulent herbage (*Arthrocnemum*, *Zygo-phyllum apiculatum* and *Z. glaucescens*).

At Moonera, near Cocklebidly (80 miles beyond Madura), tall broom-like shrubs of *Casuarina humilis* and *Eremophila Dempsteri* (about 6 ft. high) were noted for the first time. Here also the rare *Frankenia densa* was collected, in limestone gravel on the roadway; this bluish-grey "sea heath" has rosy pink flowers, is completely prostrate and exceedingly brittle in both fresh and dried condition. Moonah disappeared at about 280 miles west of Eucla, where we entered a section of the road that runs perfectly straight for the next 96 miles.

The historical Balladonia Homestead, 306 miles beyond Eucla, is situated on a granite outcrop covering 20 or 30 acres and culminating in some large boulders—impressive enough against the surrounding monotonous limestone flats. These rocks gave support to some interesting plants, e.g., *Notholana vellea* (the drought-resisting Woolly Cloak-fern), prickly *Solanum orbiculatum* and a silky form of *Glycine clandestina* with deep violet flowers. Seasonal composites were a feature in the damp sandy soil covering flat slabs of granite—*Brachycome ciliaris* var. *lanuginosa*, *Angianthus tomentosus* and an indeterminate *Gnephosis* which is probably new to science. *Trichinium obovatum* (Silver-tails) and *Disphyma australe* (Australian Noon-flower) were abundant on calcareous rises adjoining the granite, the latter making rosy-magenta carpets of colour around the station-yard walls.

From Balladonia the rainfall increases toward Norseman, as one comes gradually out of the vast eremean division of "Euclonia." Taller mallee soon appears, with *Melaleuca cymbifolia* replacing Moonah as an understorey, and we pass through

the eastern fringe of the great Salmon Gum belt (*Eucalyptus salmonophloia*)—a forest of these bronze-boled eucalypts excited admiration along the roadside a few miles beyond Balladonia. Other trees observed hereabouts for the first time were *Codonocarpus cotinifolius* (Bell-fruit), *Acacia acuminata* (“Raspberry-jam”), *Eucalyptus calycogona* and a puzzling eucalypt with most attractive, shining red, long-horned buds that lent a distant impression of massed crimson blossom.

Fraser Range—Dundas Hills

Where the road crosses Fraser Range near its low southern extremity, a brief sortie was made to examine local vegetation. The rocky crest of the range is almost devoid of trees, except for gnarled examples of *Casuarina Huegeliana*, much resembling the eastern *C. stricta* (Drooping She-oak) in habit and large cones, and for an occasional tree of *Pittosporum phillyreoides*; *Eremophila alternifolia* and the bright yellow *Pimelea thesioides* also occur among the rocks. Sandy approaches carry a stunted eucalypt forest (*E. olcosa* var. *glauca*, *E. Le Souefii*, *E. salubris*, etc.), but the whole area is rather disappointing botanically and we did not find the more spectacular *Eucalyptus caesia* and *E. Stricklandii* which doubtless occur farther north along this range. Low shrubs of *Dodonaea microzyga* were rendered ornamental by trusses of bright red-winged fruits.

Dundas area lies at the south-east of Jutson’s “Salinaland” or salt-lake division [*vide Physiogr. W. Aust.*, 94 (1934)] and affords many glimpses of salt-encrusted depressions—contrasting sharply with the surrounding timbered country; some were several miles in extent, but there was no opportunity to collect any samples of their halophytic vegetation during our 126-mile journey from Norseman to Esperance. As we moved south through Salmon Gums and Grass Patch, there was a crescendo of botanical excitement, attaining a climax in the heathy sand-plains toward the coast—richest floral region in the world, with the possible exception of Cape Peninsula in South Africa.

Southern Sand-plains

About six miles north of Salmon Gums, dense thickets of small slender eucalypts had sprung up following fire—*E. Flocktonia*, *E. dumosa*, *E. cremophila*, and the very localized *E. diptera* with sessile, hemispherical, two-winged fruits. The first two species extended nearly the whole way to Esperance, while a little south of Grass Patch we collected also *E. Forrestiana*, *E. goniantha*, and *E. spathulata* var. *grandiflora*. Beyond Salmon Gums, and

especially in the neighbourhood of Grass Patch, is a bewildering variety of small *Acacia* species: the remarkable leafless *A. glaucoptera*, with much flattened branches (like an *Epiphyllum* cactus), evoked expressions of astonishment. Other species of interest were *A. Graffiana*, *A. colletioides* var. *nysophylla*, *A. gonophylla*, *A. Pritzeliana*, *A. dermatophylla*, *A. pilosa*, *A. bidentata*, and three as yet undescribed species; one of these novelties grew in cushion formation, less than a foot high, and had bluish awl-shaped phyllodes of almost succulent appearance — a very charming dwarf.

In a half-mile strip of heathland along the main road between Grass Patch and Gibson railway sidings, we observed more flowering species than in all the preceding 1000 miles of our journey! Brilliant splashes of colour came from clumps of purple *Dampiera lavandulacea* and *D. Lindleyi* and scarlet *Leschenaultia formosa*. Among the numerous *Proteaceæ* were tall bushes of *Lambertia inermis*, *Grevillea plurijuga*, *Hakea cinerea*, *H. Brookeana* and *H. pandanicarpa*, the last with very large woody follicles deeply cracked into regular pyramidal warts. Of rare and localized plants one could mention: *Boronia baeckeacea*, *Dodonaea amblyophylla* and *Olearia ramosissima*, while a *Spyridium*, *Hybanthus* and *Scavola* cannot be matched with any specimen or description available at the Melbourne Herbarium and may represent three other undescribed plants from this fruitful region. In view of the fact that the Grimwade party found so much unusual material, including several species undoubtedly new to science, merely by stopping for a short time at isolated intervals along main roads, what wealth of new records must surely await a thorough botanical survey of these fascinating southern heathlands?

Granite cliffs at Dempster's Hill, Esperance, afford wonderful sea-scapes, especially toward the islands of Recherche Archipelago, and the local flora is most varied and full of interest. The district has a long botanical history, beginning with the visit of the French botanists Riche and Labillardière in December, 1792 (during Commander Bruny D'Entrecasteaux's expedition to search for La Perouse). Labillardière made extensive collections which became the types of many new species described in his *Novæ Hollandiæ Plantarum Specimen* (two volumes, 1803/6), and we were gratified to see that a number of these plants still survives here in their type area, e.g., *Adenanthos cuneata*, *Olar phyllanthi*, *Nuytsia floribunda*, *Boronia tetrandra*, *Phyllanthus calycinus*, *Adriana quadripartita*, *Spyridium globulosum*, *Thomasia triphylla*, *Pimelea ferruginea*, *Agonis marginata*,

Platysace compressa, *Anthocercis littorea* and *Velleia trinervis*. The *Olar* and *Platysace* are remarkable for their strange appearance — the former with naturally drooping and dead-looking leaves of ashen grey-green, the latter leafless with flattened tape-worm-like stems that zigzag at each branching.

Nine years later, in January, 1802, Robert Brown (with Captain Matthew Flinders) collected at "Lucky Bay," some 25 miles S.E. of Esperance, during four days that the *Investigator* anchored there. It was rather unfortunate that both Labillardière and Brown should have visited this rich botanical area in the height of summer when the flowering season of most plants would be long past. Several of their records have not been seen since.

We found flamboyant red blooms of *Templetonia retusa* ("Cocky's-tongues") conspicuous among the shrubberies on Dempster's Hill; so were the dense, almost fleshy, white flower spikes of Fitzgerald's *Goodenia decursiva* (this being the type locality). *Hakea prostrata* was true to name, being utterly prostrate—farther inland it grows erect and becomes a small tree.

The 120-mile drive to Ravensthorpe was wholly through undulating sand-heath country and revealed an endless succession of beautiful flowers—hakeas, banksias, melaleucas, leucopogons, dampieras orchids, etc., and such exclusively western genera as *Conostylis*, *Dryandra*, *Synaphaea*, *Franklandia*, *Calothamnus*, *Chamelaucium*, *Verticordia*, *Andersonia* and *Needhamia*. Silver-blue *Eucalyptus tetragona* has large broad leaves and quadrangular branchlets (recalling the juvenile condition of Tasmanian Blue Gum and Shining Gum); it is dominant throughout this region, the whole plant being strongly pruinose. *E. tetraptera*, with invariably slender stems, long stiff shiny exceedingly thick leaves (probably the thickest in the genus) and very large square "cattle-bell" shaped fruits, is a top-heavy plant; the numerous examples witnessed were always proeminent and of untidy appearance. A large frequent shrub in many places was *Banksia speciosa*, with long deflexed *Dryandra*-like leaves.

These sand-plains have been extensively burnt again and again, and fire-scarred trees of *Nuytsia floribunda* (W.A. Christmas-tree) dot the landscape everywhere — bizarre, twisted growths with archaic mien. *Nuytsia* is apparently tenacious of life, for every fire-damaged specimen was encircled at the base by vigorous sucker shoots. Several salt lakes on the plains carried marginal groves of picturesque white-boled paperbarks (*Melaleuca cuticularis*)—a widely distributed tree in W.A. "Salineland". Grass-trees (*Xanthorrhæa Preissii*) were abundant, flowering over recent burns.

Probably the most brilliant floral displays were attributable to flame-red *Leschenaultia formosa* [Brown's type came from near Esperance in 1802], vivid purple *Calytrix brachyphylla* and mauve *Burtonia scabra* (an ericoid pea shrub). Smaller very decorative legumes were the dark blue Wedge-peas, *Gompholobium venustum* and *G. Knightianum* (both with elegant pinnate leaves), and the little herbaceous *Isotropis cuneifolia* of damp ground—its few rather large flowers are apricot-hued and exquisitely veined on the back with deep red.

Ravensthorpe, the site of former copper mines, is stony and dry (14 in. rainfall), but its flora proved interesting. Here we touched again the southern fringe of Salmon Gum—Mallet forest with several smaller eucalypts in association, including *E. platypus* var. *heterophylla* and typical *E. annulata*. Some of the Mallet trees (*E. occidentalis*) in the township are large specimens. A dry creek, at an old copper mine about one mile north of the town, disclosed five species each of *Acacia* and *Melaleuca*—all in bloom. One *Acacia* had broadish, glaucous, multi-veined phyllodes about 1½ inches long and is apparently undescribed. Several plants of an elegant *Grevillea* (*G. patentiloba*) were also seen, the red flowers in loose clusters along bare attenuated and trailing shoots. The dry character of this climate was reflected in such plants as *Teucrium sessiliflorum*, *Sida*, *Halgania*, *Aristida* and *Kochia tomentosa*. *Melaleuca pubescens* appeared again here—the farthest west that we observed, although it has since been certified as a remarkably isolated occurrence on Rottnest Island. Time did not permit an excursion south of the town to see *Actinotus superbis* (Flannel-flower) or *Pimelea physodes* (Qualup Bell) for which the district is famous. These splendid flowers grow some 10-20 miles away toward the Mts. Barren Range.

Ten miles west of Ravensthorpe one meets the sand-plain country again, and for the next 70 miles our road passed through heathland ablaze with colour. South and south-east, the jagged peaks of the Barren mountains rose boldly out of the plain, a panorama of great beauty not unlike the Victorian Grampians, and certain flowers appeared peculiar to this region. In the great abundance of leguminous plants, the genera *Acacia*, *Chorizema* and *Daviesia* (with several extraordinary species) were noteworthy. *Acacia acuminata* ("Raspberry-jam") and *A. ericifolia* had been admired on the outskirts of Ravensthorpe where we passed also some broomy shrubs of *Eremophila pachyphylla* and *E. dichroantha*. Soon *Acacia sessilispica*, *A. latipes*, *A. pulchella* (very stunted) and a probable form of *A. lineolata* were added to the growing list. *Daviesia pachyphylla* discouraged interference

by virtue of its concentrated armament of spiny awl-shaped leaves—glaucous and curiously inflated; *D. reversifolia* offered a similar problem to the collector, but here the foliage was rather sparse, each rigid narrow spine-tipped leaf alternatively deflexed at a sharp angle so that the trailing branches presented a regular zig-zag effect—reminiscent of an agricultural harrow.

By the road crossing on the upper reaches of Fitzgerald River (saline, as are most watercourses between Esperance and Albany) we found welcome groves of *Casuarina Huegeliana* and the pine *Callitris Drummondii*, the ground under them soft from fallen needles. This stopping place also yielded a rare epacrid, *Acrotriche ramiflora* (heavy with bloom) and was remarkable for the variety of its *Myrtaceae*—*Eucalyptus uncinata*, *Leptospermum erubescens*, *Kunzea recurva*, *Melaleuca spathulata* (form), *M. pentagona* and *Baeckea crispiflora*, to mention but a few of the interesting species. *Hakea laurina* grew here too, but in such a spindly form and with so few leaves that one would hardly recognize it as conspecific with the bushy Pincushion *Hakea* of Victorian gardens.

Near Ongerup, specimens were obtained of several mallee eucalypts, viz., *E. platypus* (the typical form, of poplar-like aspect and with very broad, thick, lustrous leaves), *E. annulata*, *E. conglobata*, *E. calycogona* and *E. spathulata*—the last a neat ornamental tree, having an unbrageous crown of slender greyish leaves. Approaching Pallinup River from Borden, the road suddenly affords a magnificent view of the Stirling Range some 20 miles to the south—sharply serrated peaks exceeding 3000 ft. and, like the Barrens, strongly reminiscent of Victoria's Grampians.

Stirling Range Area

Pallinup River is believed to have "captured" the heads of several ancient watercourses after the gigantic east-west Stirling uplift barred their flow to the south. It is now a sluggish salty stream, but has excellent camping sites among the she-oaks, jamwoods, gnarled banksias and paperbarks that shade its low banks. A representative collection of lichens and bryophytes was made on earth and woody debris near the road bridge, while damp sandy slopes in the vicinity yielded several interesting sedges (a *Lepidobolus*, *Loxocarya* and *Lyginia* and three species of *Schæenus*). What would seem to be an undescribed species of *Calytrix* had small white flowers with exceedingly minute calyces.

Four hours botanizing at Chester Pass in the Stirling Range National Park provided the floristic highlight of the whole expedition. Two of us essayed to climb the nearby slopes of

Mt. Hassell (its pinnacle touches 3000 ft.) where, despite the spoliation caused by successive bushfires, the flowers are still a sheer delight. No less than 26 different proteads were collected—half the total species in Victoria! Scarlet *Banksia coccinea*, stiff and regal as a waratah, was one of the loveliest, and fertile seeds taken from Chester Pass have since been grown successfully at Frankston. Another very showy red flower was identified as *Beaufortia decussata*. Splashes of vivid blue came from occasional patches of the ericoid *Conospermum amœnum*; *Dryandra formosa* and *Banksia Brownii* shone with golden heads, those of the latter species borne among most decorative, delicately cut leaves of ferny aspect. Stunted Jarrah (*Eucalyptus marginata*) and Marri (*E. calophylla*) forest clothed the foothills of the range, but undoubtedly the most pleasing eucalypt was *E. dora-toxylon* (Bell Gum)—wholly rubescent, with slender leaves and gracefully drooping trusses of small pilular fruits. The remarkable “drumstick” grass-tree, *Kingia australis*, confronted us for the first time here—it has been reliably estimated to grow at the rate of a foot a century, and many examples exceeded eight feet in height.

On the swampy plain tract some five miles south of Stirling Range we saw magenta patches in the roadside scrub and found the climbing trigger-flower, *Stylidium scandens*, its whorled leaves each coiled into an elegant spiral at the tip for support in dense undergrowth. Nearby grew *Eucalyptus decipiens*, also *E. buprestium*, fruits of which appear like large globular galls amongst the foliage. The granitic Porongorups, shrouded in mist, were too far from our main road to permit visitation; but gully vegetation in full bloom along Napier Creek (15 miles north of Albany) called for a brief inspection. In striking contrast with the gold of several *Acacia* species were deep purple flowers of *Hovea elliptica*, *H. chorizemifolia* and *Hardenbergia Comptoniana*, and vivid scarlet umbels of *Kennedyia coccinea*. Several orchids grew luxuriantly on the moist sandy slopes above the creek, notably *Diuris longifolia*, *Pterostylis recurva* and *P. vitata*, but in general the season was not a good one for orchids along the southern coastal heaths.

King George's Sound to Nornalup Inlet

Albany is built partly around the western slopes of Mt. Clarence—a granite hill whose natural bushland has been wisely preserved. A scenic road skirts the steep seaward face of the hill and affords easy access to the flora in mossy soaks among large slabs of granite. In a few moments we found several proteads, including *Stirlingia*

tenuifolia (with extremely dissected foliage), the large-flowered scarlet bladderwort, *Utricularia Menziesii*, and *Borya nitida* (Pincushion Lily). Several large weeds are well established in the dampish environs of Albany, e.g., White Calla-lily, *Watsonia*, Blackberry and Pinnate Psoralea.

The West Australian Pitcher-plant (*Cephalotus follicularis*, in the monotypic endemic family *Cephalotaceæ*) grows plentifully enough in certain swampy tracts between Albany and Denmark, and it was a matter for great regret that lack of time prevented location of this unique, world-famous plant. Denmark is at the eastern fringe of the high-rainfall Karri forest belt. Between there and Parryville were seen our first examples of Karri trees (*Eucalyptus diversicolor*) with associate shrubs of tall *Acacia pentadenia* (a bipinnate species), the small endemic conifer *Podocarpus Drouyniana*, etc. An isolated patch of Karri timber is to be found as far east as the Porongorups (north of Albany). A special search at Parryville for Brown Boronia (*B. megastigma*) was rewarded by several spindly, shallow-rooted specimens of this very fragrant plant—concealed amongst rank swamp growth on permanently wet flats. Around the same swamp occurred also graceful pink-flowered *B. gracilipes*, *Crowea angustifolia*, *Tetratheca hispidissima*, *Scavola striata*, *S. microphylla* and an, as yet, indeterminate species of *Hemigenia*.

Massive trees of Red Tingle-tingle (*Eucalyptus Jacksonii*) with Karri, Marri and *Casuarina decussata* may be inspected conveniently by a short detour (between Parryville and Nornalup) to the "Valley of the Giants."* The undergrowth is dense, with much *Chorizema ilicifolium* trailing attractively through it; *Petrophila diversifolia* there has remarkably hemlock-like foliage, while the little greenhood orchid (*Pterostylis nana*) is frequent around the shaded mossy butts of the big trees and even on old decaying logs.

At about four miles east of Nornalup a forest track leads one south across marshy country with abundant tall sedge-like growths (*Dasyopogon bromeliifolius*, *Lomandra Endlicheri*, *Evandra aristata*, *Anarthria scabra*, etc.) to gentle hill slopes where *Eucalyptus ficifolia* (Flame Gum) may be seen. Although so extensively planted in the eastern States, this tree is remarkably localized in its native haunts, inhabiting only a few thousand acres of sandy rises near the coast about Nornalup and at Brookes Inlet (the type area, some 25 miles to the west). Except when in flower, indigenous *E. ficifolia* is anything but ornamental—twisted, unhealthy-looking specimens of low stature. This poor forest,

*The "Valley of the Giants" was burnt out by a disastrous bush-fire early in 1950.

however, proved to be singularly rich in *Epacridaceae* and *Rutaceae*; *Crowea dentata* and four species of *Boronia* (*B. crenulata*, *B. spathulata*, *B. gracilipes* and another indeterminate one resembling *B. pulchella*) were there, while of *Leucopogon* species two cannot be matched with any forms represented in the Melbourne Herbarium.

Walpole settlement on Nornalup Inlet is noted for its Yellow Tingle-tingle (*Eucalyptus Guilfoylei*)—a tall tree of restricted distribution between Denmark and Cape Leeuwin. In neighbouring swamps we found the large handsome leek-orchid *Prasophyllum fimbria*, *Isopogon axillaris* and the uncommon little goodeniaceous plant *Diaspasis filifolia*.

Karri Forests

Near Weld River, along the road to Pemberton, *Eucalyptus megacarpa* (Bullich) and *E. patens* (Swan River Blackbutt) were both examined, among the prevailing Karri and Marri stands. Shannon River crossing was memorable for more and better samples of Brown Boronia, other interesting shrubs in the vicinity being pendant *Melaleuca microphylla*, tall *Ricinocarpus glaucus*, silver *Hemigenia podalyrina* and scrambling *Dampiera hederacea*. Miniature bog-gardens flourished in natural clearings that marked the outcropping of many granite slabs in the Karri forest; *Burchardia umbellata* (small stocky form), *Tribonanthes australis*, *Polypompholyx multifida* and several trigger-flowers were blooming profusely in one of these soakages near the main road.

Three days were spent amongst the big timber in Pemberton district, where lofty eucalypts and dense undergrowth (exhaling a delicious aroma) recall the mountain forests of the Otways and Upper Yarra watershed in Victoria, albeit at a much lower elevation. Rainfall is similar (50-60 inches), but one misses fern growth: bracken is the only frequent kind here, growing very tall, while occasional clumps of *Asplenium premorsum* (Forked Spleenwort) occur as epiphytes on the mossy branches of *Casuarina decussata*; *Adiantum athiopicum* (Maidenhair-fern) was also observed sparingly in several gullies. The Karri Sheoak (*C. decussata*) is a most attractive understory tree, with deeply fluted corky bark of a curious yellow-brown colour and somewhat amorphous cones of the same hue, their valves being nearly immersed. *Banksia grandis* (with exceptionally large leaves and cones for its genus) and weeping *Agonis flexuosa* are two other frequent trees of the lower canopy; tall shrubs are well represented by various *Acacia* species, *Albizzia distachya*, *Bossiaea aquifolium* ("Water-bush" from its efficiency in holding rain-

drops), *Chorilaena hirsuta*, *Trymalium floribundum*, *Pimelea clavata* ("Banjine"), *Agonis linearifolia*, *Leucopogon verticillatus*, *Logania vaginalis*, *Persoonia longifolia* and *Leptomeria squarrulosa*.

Deep sheltered valleys two to four miles east of Pemberton approached nearer to a typical Gippsland fern gully than any other formation we saw in the West — Maidenhair-fern on the stream banks, Forked Spleenwort on the Karri Sheoaks, *Clematis pubescens* and *Hardenbergia Comptoniana* (conspicuous lianes) ascending high up the trunks of trees, and many bryophytes* and foliose lichens on fallen timber or around the bases of old trees. These cryptogams mostly belong to species that are common also in east Australian forests, e.g., the large lichens *Peltigera polydactyla* and *Sticta Mougeotiana* which Baron von Mueller had collected at the Porongorups in 1867.

The small diffuse conifer *Podocarpus Drouyniana* (with unusually large seeds) and cycad *Macrozamia Reidlei* ("Zamia Palm") occur almost throughout the Karri belt. In more open places with loamy soil, *Patersonia xanthina* expands its large golden blooms—a startling contradiction in this genus of otherwise purplish-flowered irids. *Hovea elliptica* colours the forest a rich purple in many places, its brilliance contrasting delightfully with the ubiquitous yellows of the Karri wattles (*Albizzia distachya*, *Acacia alata*, *A. diptera*, *A. myrtifolia* var. *angustifolia*, *A. urophylla*, *A. pulchella*, *A. pentadenia*, etc.) and the stark white boles of the noble Karri eucalypts themselves. In all this high-rainfall area, no floral subject was more appealing than graceful *Crowea dentata* with its long sprays of waxy-white bloom.

Tetrarrhena laevis was the only indigenous grass to be noted, and apparently there has always been a paucity of *Gramineæ* in wet Karri country. Early pioneers who put stock around the fringes of the big timber may be accounted responsible for the almost complete disappearance of such native pasture plants as existed originally. After forest fires, the first plants to shoot are cycads and hungry cattle will browse on these until rickets are manifest—the result of a cumulative poisoning; *Macrozamia* seeds also are violently poisonous, unless treated as the aborigines prepared them for food. In 1922, large tracts of virgin Karri were surveyed for closer settlement and by 1928 systematic ring-barking began. Group settlers, arrived from England, fought a losing battle against bracken and scrub on a hungry soil that would never provide pasture without constant heavy manuring.

*The mosses and hepatics of the Expedition, numbering about 30 species, are now determined and will form the subject of a special report.

For mile after mile in the Warren River district one is depressed by the sight of gaunt ringbarked trees, burnt-out country and abandoned selections. Fortunately the Karri seeds well and there is evidence of much natural regeneration.

Of outstanding interest in the Warren River National Park is an aged Karri that has achieved historical fame and is known as "Miss North's Tree." It is completely encircled at a height of about 30 feet on the trunk by a gigantic burl which in the 1870's attracted the attention of an English lady, Miss North; she was driven from Brockman's homestead every day for a fortnight in order to paint the knobbly giant. Her excellent paintings of S.W. Australian trees were finally donated to the Herbarium at the Royal Botanic Gardens, Kew, with enough money for their appropriate housing, and they may still be consulted there. It was singular that here, in this very wet region, we should experience three cloudless days of warm sunshine, whereas in the proverbially dry Nullarbor section of our journey the same period had been attended by grey skies and gentle showers.

No collecting was done over the 100 miles between Pemberton and Bunbury, but it was noted that *Podocarpus Drouyniana* extends as far north as Yornup, near Bridgetown. On high sand dunes at Bunbury—our first glimpse of the Indian Ocean—several unfamiliar psammophytic plants were collected, including: *Spinifex longifolius*, *Acanthocarpus Preissii*, *Acacia heteroclita*, *Alyxia buxifolia*, *Scaevola crassifolia* and two introductions from South Africa (*Pelargonium capitatum* and *Anthericum divaricatum*—a lily with long sprawling strap-like leaves). The brown alga, *Scaberia Agardhii* was taken from the tessellated basaltic wave platform nearby—a unique geological feature on the sandy coastline of Swanland.

Darling Scarp and Swan Coastal Plain

Yarloop was our first record for the strange proteaceous "Wooden-pear" tree (*Xylomelum occidentale*), which follows typical sand-heath country fringing the Darling Scarp for a hundred miles; north of Perth, it is succeeded by the more attractive *X. angustifolium*. Other noteworthy plants at Yarloop were *Sowerbaea laxiflora* (very similar to the east Victorian *S. juncea*), *Conostylis involucrata*, *Acacia sphacelata* var. *sessilis*, *Labichea punctata* (a legume with only two perfect stamens) and the heath *Conostephium pendulum*, having its creamy-white flower bells tipped heavily with purple-black and very sharply contracted.

Dwellingup, in the centre of an important Jarrah timber milling area, was compared with the wetter Karri forests farther south. Near the "Banksia" sawmill flowered *Leschenaultia biloba*, a famous blue subject that we had been anxious to see ever since leaving Norseman, also a possible giant form of *Hibbertia montana* which cannot be satisfactorily matched in Melbourne. *Banksia grandis* formed the principal, if rather sparse, under-canopy of this Jarrah forest.

The descent from the Darling escarpment toward North Darnalup is rather abrupt and takes one through a surprising wealth of flowering shrubs, especially proteads, of which eight species were recorded in a few minutes and included yellow *Lambertia multiflora* and the very showy crimson *Grevillea Wilsonii*; *Hypocalymma robustum*, *H. angustifolium*, *Eriostemon spicatus*, *Hibbertia Huegelii* and *H. acerosa* were also present and typical of the Darling Range flora. *Eucalyptus haematoxylon* was met with only here—a tree in vegetative character and fruit almost indistinguishable from *E. calophylla*, but differing in its dark red timber. It is indeed regrettable that the rich sand-heath flora between the Darling plateau region and the sea (the Swan Coastal Plain) should be in process of extermination through farming and the introduction of all-too-aggressive weeds.

Our arrival in Perth on Wednesday afternoon, September 10th, terminated the Expedition which had covered 1800 miles in sixteen days—an average daily mileage of 112. Despite such rapid movement and the necessarily limited time for intensive collecting anywhere, the writer made the most of every opportunity to botanize along the route; he remained in Perth for five days in order to see something of the local flora and to check up as many identities as possible at the State Herbarium. The Government Botanist, Mr. C. A. Gardner, kindly escorted him to the National Park at Jane Brook, the forest look-out tower and weir at Mundaring, Greystones Road and Cannington Swamps — a very interesting but fast vanishing flora in which the little conifer *Actinostrobus pyramidalis* is still to be found by the roadside. Other trips were made to Bull's Brook and City Beach, and the results of all these latter excursions in and around Perth have been added to those of the Expedition itself.

Conclusion

In the total of 870 separate collections of vascular plants, 685 species are concerned, including: *Proteaceae* 85 spp.; *Leguminosae* 98 spp. (37 in *Acacia*); *Myrtaceae* 94 spp. (38 in *Eucalyptus* and 22 in *Melaleuca*); *Epacridaceae* 36 spp.; *Goodeniaceae* 25 spp.; and



Granite outcrops at Balladonia, Western Australia.



The Expedition's Transport in the Stirling Ranges, Western Australia.



Kingia australis at North Darnalup, Western Australia.

Compositae 28 spp. In addition, 32 species of lichens were collected, but the *Bryophyta* were checked too late for insertion here. Flowering plants have been carefully mounted and incorporated in the National Herbarium of Victoria, augmenting the great collections already housed there by at least 38 species that were *not* previously represented and by 21 others of which the Herbarium possessed only *single specimens* (including 11 types); 127 (18.5%) of the species collected occur also in Victoria, but the majority of these were taken in Eyre's Peninsula, South Australia. Several species from the Expedition, including four in the genus *Acacia*, are new to science and will be published as opportunity offers.

A memorable experience was the location, in company with Mr. C. A. Gardner, of the extremely rare and apparently localized *Pilostyles Hamiltonii* at the Mundaring Pine Plantation. This minute-flowered member of *Rafflesiaceae* is parasitic on *Daviesia* species and created a botanical stir in Western Australia when it was discovered by Mr. C. D. Hamilton as recently as March, 1946—hitherto the family had been unknown from Australia and the genus *Pilostyles* recorded only for Persia, tropical Africa and the American region between California and Chile, always on some leguminous host. We were fortunate to find it in a fruiting condition on one small patch of *Daviesia incrassata*. [See C. A. Gardner in *Journ. Royal Soc. W. Aust.*, XXXII, 77 (1948).]

Mr. J. Swanson was untiring in his collection of seed throughout the itinerary and has achieved a large measure of success in germinating these and establishing seedling plants of unfamiliar species at the Frankston Golf Club nursery.

The writer wishes to register the personal debt of gratitude he owes to Sir Russell Grimwade, organizer and leader of this venture, without whose kindly munificence he would probably never have been able to visit the West or to explore such a variety of rich wildflower country—from rainfall regions of under 10 in. to those of 60 in. Botanical results from the Expedition are most gratifying and constitute the largest single addition of Australian exsiccatae to be received into the Victorian National Herbarium since the time of Baron von Mueller. A limited number of duplicate specimens is available for exchange purposes.

Grateful acknowledgement is also made to Mr. P. N. S. Bibby, of the National Herbarium staff (South Yarra), for much willing help in identifying the lichen material gathered on the Grimwade Expedition, and to Mr. C. A. Gardner, Government Botanist, Perth, who assisted by the determination of a number of doubtful specimens.

SYSTEMATIC ENUMERATION OF VASCULAR PLANTS COLLECTED (AND NOW ADDED TO THE NATIONAL HERBARIUM OF VICTORIA)

[* Denotes a naturalized alien, † a species not previously represented in Melbourne.]

PTERIDOPHYTA

POLYPODIACEÆ

Asplenium

præmorsum Sw.—Warren R. Nat. Park; 4 ml. E. of Pemberton (on *Casuarina*)

Pleurosorus

rutifolius (R.Br.) Fee—Murrawijinie and Kunalda Caves, S.A.

Notholaena

vellea R.Br.—Balladonia (granite crevices)

Adiantum

athropicum L.—Warren R. Nat. Park

GYMNOSPERMEÆ

CYCADACEÆ

Macrozamia

Reidleyi (Gaud.) Gardner—"Pimelea," 9 ml. N.W. of Pemberton

TAXACEÆ

Podocarpus

Drouyniana F.v.M.—Parryville; Shannon R. (1 ml. N.)

CUPRESSACEÆ

Actinostrobus

pyramidalis Miq. in Lehm.—Can-
nington swamps

Callitris

Drummondii (Parl.) F.v.M. Fitz-
gerald R. (head)

ANGIOSPERMEÆ

SCHEUCHZERIACEÆ

Triglochin

calcitrapa Hook.—City Beach
trichophora Nees in Lehm.—City
Beach

GRAMINEÆ (14 spp.)

Cymbopogon

obtectus S. T. Blake—Jane Brook
(Nat. Park)

Neurachne

alopeuroides R.Br.—S. of Grass
Patch; Ravensthorpe; Dwellingup
("Banksia" mill)

Paspalidium

gracile (R.Br.) Hughes—Balladonia
(granite)

Spinifex

longifolius R.Br.—Bunbury Beach

Tetrarrhena

louis R.Br.—Warren R. Nat. Park;
Mundaring fire tower

Aristida

arenaria Gaud.—Fraser Range;
Ravensthorpe

Stipa

breviculmis J. M. Black, var.—
Madura Stn.

clatior (Benth.) Hughes—City
Beach

variabilis Hughes—Colona Stn., S.A.

Danthonia

?*sectacea* R.Br.—S. of Grass Patch
sp.—Murrawijinie Cave, S.A.

Triodia

irritans R.Br.—Elliston cliffs, S.A.

Koeleria

**phleoides* Pers.,
var. *azorensis* Domin—Colona
Stn., S.A.

Poa

Drummondiana Nees in Hook.—
Kunalda Cave, S.A.

[+ 1 indet. sp.]

CYPERACEÆ (15 spp.)

Scirpus

antarcticus L.—City Beach

Schwannus

flavus (Nees) Bæckl.—Pallinup R.

?*barbatus* Bæckl.—Pallinup R.

curvifolius (R.Br.) Benth.—35 ml.
W. of Esperance; Pallinup R.

unispiculatus (F.v.M.) Benth.—
Greystones Rd. (Mundaring)

breviculmis Benth.—35 ml. W. of
Esperance

grandiflorus (Nees) F.v.M.—
Esperance; City Beach

Mesomelaena

tetragona (R.Br.) F.v.M.—70 ml.
W. of Esperance; Greystones Rd.
(Mundaring)

Lepidosperma

effusum Benth.—Pemberton

tetraquetrum Nees in Lehm.—

"Pimelea," 9 ml. N.W. of Pembro-
ton

angustatum R.Br.—Walpole

leptostachyum Benth.—Warren R.
Nat. Park

Tetrariopsis

octandra (Nees) C. B. Clarke—
Porongorup foothills

Evandra

aristata R.Br.—4 ml. E. of Nornalup
[+ 1 indet. sp.]

RESTIONACEÆ (9 spp.)

Lyginia

tenax (Labill.) Gardner—Pallinup
R.

RESTIONACEÆ (contd.)

- Anarthria*
scabra R.Br.—4 ml. E. of Nornalup
prolifera R.Br.—Chester Pass, Stirling Ra.
polyphylla Nees in Lehm.—30 ml. W. of Ravensthorpe

Lepyrodia

- Muirii* F.v.M.—Shannon R.

Restio

- † ?sp.—4 ml. E. of Pemberton

Loxocarya

- fusciculata* (R.Br.) Benth.—35 ml. W. of Esperance
cinerca R.Br.—50 ml. W. of Ravensthorpe; Pallinup R.

Lepidobolus

- Preissianus* Nees in Lehm.—70 ml. W. of Esperance; Pallinup R.

CENTROLEPIDACEÆ

Centrolepis

- polygyna* (R.Br.) Hieron.—Greystones Rd. (Mundaring)

PHILYDRACEÆ

Pritzelia

- pygmaea* (R.Br.) F.v.M.—Greystones Rd. (Mundaring)

LILIACEÆ (17 spp.)

Burchardia

- umbellata* R.Br.—Shannon R. (granite 1 ml. N.)

Thysanotus

- Patersonii* R.Br.—Fraser Range

**Anthericum*

- †**divaricatum* Jacq.—Bunbury Beach

Tricoryne

- elatior* R.Br.—Jane Brook (Nat. Park)

Agrostocrinum

- seabrum* (R.Br.)—Baill.—Jane Brook (Nat. Park)

Stypandra

- imbricata* R.Br.—10 ml. W. of Ravensthorpe

Laxmannia

- grandiflora* Lindl.—Bull's Brook (1 ml. S.)

- +var. *paleacea* Benth.—S. of Grass Patch

- squarrosa* Lindl.—S. of Grass Patch

- brachyphylla* F.v.M. ex Benth.—70 ml. W. of Esperance

Sowerbaea

- laxiflora* Lindl.—Yarloop

Borya

- nitida* Labill.—Mt. Clarence (Albany)

Dasyopogon

- bromeliifolius* R.Br.—4 ml. E. of Nornalup

Acanthocarpus

- Preissii* Lehm.—Bunbury Beach; City Beach

Lomandra

- Endlicheri* (F.v.M.) Ewart—Parryville; 4 ml. E. of Nornalup

- pauciflora* (R.Br.) Ewart—Parryville; 4 ml. E. of Pemberton

Xanthorrhæa

- Preissii* Endl. in Lehm.—50 ml. W. of Ravensthorpe

Calectasia

- cyanea* R.Br.—35 ml. W. of Esperance; Chester Pass, Stirling Ra.; Cannington swamps

HÆMODORACEÆ

Phlebocarya

- ciliata* R.Br.—Darling Ra., North Darnalup

AMARYLLIDACEÆ

Tribonanthes

- australis* Endl.—Shannon R. (granite 1 ml. N.)

- variabilis* Lindl.—Cannington swamps

- longipetala* Lindl.—1 ml. S. of Bull's Brook

Conostylis

- Bealiana* F.v.M.—35 ml. W. of Esperance

- serrulata* R.Br.—35 ml. W. of Esperance

- candicans* Endl.—City Beach

- involutata* Endl.—Yarloop

- setosa* Lindl.—Mundaring fire tower

- setigera* R.Br.—Porongorup foothills; Nth. Darnalup

Anigozanthos

- humilis* Lindl.—50 ml. W. of Ravensthorpe

- bicolor* Endl. in Lehm.—Yarloop; Greystones Rd. (Mundaring)

DIOSCOREACEÆ

Dioscorea

- hastifolia* Endl. in Lehm.—Jane Brook (Nat. Park)

IRIDACEÆ

Patersonia

- xanthina* F.v.M.—Pemberton

- rudis* Endl.—Dwellingup

Orthrosanthus

- multiflorus* Sweet—Chester Pass, Stirling Ra.

- laxus* (Endl.) Benth.—Jane Brook (Nat. Park)

ORCHIDACEÆ (18 spp.)

Thelymitra

- crinita* Lindl.—Darling Ra., North Darnalup

Diuris

- longifolia* R.Br.—Esperance; Napier Ck.

- carinata* R.Br.—35 ml. W. of Esperance

Prasophyllum

- elatatum* R.Br.

- var. *Muelleri* (Andr.) Nicholls—1 ml. S. of Bull's Brook; City Beach

- fimbria* Reichb.f.—Walpole

ORCHIDACEÆ (contd.)

Pterostylis

- nana* R.Br.—Esperance; Valley-of-Giants (Nornalup)
recurva Benth.—Napier Ck.
vittata Lindl.—Napier Ck.
mutica R.Br.—Venus Bay, S.A.

Acianthus

- reniformis* (R.Br.) Schlecht.—Venus Bay, S.A.; Pemberton

Caladenia

- filamentosa* R.Br.,
 var. *tentaculata* (Tate) Black—Venus Bay, S.A.; Jarramongup Stn.

Patersonii R.Br.,

- var. *longicauda* (Lindl.) Rogers—Esperance; 35 mls. W. of Esperance

dilatata R.Br.—Venus Bay, S.A.*flava* R.Br.—Pallinup R.*latifolia* R.Br.—Venus Bay, S.A.; Porongorup foothills; Kirup; City Beach*sericea* Lindl.—North Darnalup*geminata* Lindl.—50 ml. W. of Ravensthorpe*Glossodia*

- Brunonis* Endl.—50 ml. W. of Ravensthorpe

CASUARINACEÆ

*Casuarina**Huegliciana* Miq. in Lehm.—Fraser Ra.; Fitzgerald R. (head)*decussata* Benth.—Valley-of-Giants (Nornalup); 4 ml. E. of Pemberton*humilis* Otto & Dietr.—70 ml. W. of Esperance; City Beach*thuyoides* Miq. in Lehm.—70 ml. W. of Esperance

URTICACEÆ

Parietaria

- debilis* Forst.f.—Murrawijinie Cave, S.A.

PROTEACEÆ (85 spp.)

*Persoonia**longifolia* R.Br.—4 ml. E. of Nornalup; Dwellingup; "Pimelea," 9 ml. N.W. of Pemberton

? sp.—40 ml. W. of Ravensthorpe

*Franklandia**fucifolia* R.Br.—35 ml. W. of Esperance; Chester Pass, Stirling Ra.*Isopogon* (8 spp.)*latifolius* R.Br.—Chester Pass, Stirling Ra.*attenuatus* R.Br.—Chester Pass, Stirling Ra.*sphaeroccephalus* Lindl.—Darling Ra., Nth. Darnalup*axillaris* R.Br.—15 ml. N.W. of Walpole*Baxteri* R.Br.—Chester Pass, Stirling Ra.*roscus* Lindl.—Chester Pass, Stirling Ra.*asper* R.Br.—1 ml. S. of Bull's Brook*formosus* R.Br.—40 ml. W. of Ravensthorpe*Petrophila* (9 spp.)*teretifolia* R.Br.—30 ml. E. of Ravensthorpe*longifolia* R.Br.—Chester Pass, Stirling Ra.*media* R.Br.—Cannington swamps*acicularis* R.Br.—Mt. Clarence (Albany)*propinqua* R.Br.,var. *sericiflora* Benth.—35 ml. W. of Esperance*divaricata* R.Br.—Chester Pass, Stirling Ra.*diversifolia* R.Br.—Valley-of-Giants (Nornalup)*ericifolia* R.Br.—Chester Pass, Stirling Ra.*seminuda* Lindl.—Cannington swamps*Adenanthos**barbigera* Lindl.—Mundaring fire tower*obovata* Labill.—Chester Pass, Stirling Ra.; Walpole*cuneata* Labill.—35 ml. W. of Esperance*Meissneri* Lehm.—Nth. Darnalup*Stirlingia**simplex* Lindl.—Greystones Rd. (Mundaring)*tenuifolia* (R.Br.) Steud.—35 ml. W. of Esperance; Mt. Clarence (Albany)*latifolia* (R.Br.) Steud.—Chester Pass, Stirling Ra.*Synaphæa**polymorpha* R.Br.—35 ml. W. of Esperance; Chester Pass, Stirling Ra.*petiolaris* R.Br.—30 ml. W. of Ravensthorpe† *pinnata* Lindl.—Jane Brook (Nat. Park)*Conospermum**flexuosum* R.Br.—4 ml. E. of Nornalup*amœnum* Meissn. in Lehm.—Chester Pass, Stirling Ra.*cæruleum* R.Br.—5-10 ml. S. of Chester Pass, Stirling Ra.*stæchadis* Endl.—Yarloop*Grevillea* (15 spp.)*patentiloba* F.v.M.—Ravensthorpe*plurijuga* F.v.M.—S. of Grass Patch*nudiflora* Meissn. in Hook.—S. of Grass Patch; 35 ml. W. of Esperance

PROTEACEÆ (contd.)

Grevillea (contd.)

Thelemanniana Hueg. in Endl.—
City Beach

Hookeriana Meissn. in Lehm.—40
ml. and 60 ml. W. of Ravens-
thorpe

bipinnatifida R.Br.—Jane Brook
(Nat. Park)

Wilsonii A. Cunn. in Wils.—Darling
Ra., Nth. Darnalup

fasciculata R.Br. (inc. *G. Brownii*
Meissn. in Lehm.)—Chester Pass,
Stirling Ra.

pilulifera (Lindl.) Gardner—North
Darnalup; Greystones Rd. (Mun-
daring); 1 ml. S. of Bull's Brook

Endlicheriana Meissn. in Lehm.—
Jane Brook (Nat. Park)

crithmifolia R.Br.—City Beach

synaphææ R.Br.—Mundaring fire
tower

brevicuspis Meissn. in Lehm.—
Parryville

pulchella (R.Br.) Meissn. in Lehm.
—Chester Pass, Stirling Ra.

glabrata (Lindl.)—Meissn. in Lehm.
—Jane Brook (Nat. Park)

Hakea (17 spp.)

cyclocarpa Lindl.—Darling Ra.,
Nth. Darnalup

crassifolia Meissn. in Lehm.—Ches-
ter Pass, Stirling Ra.

Brookeana F.v.M. — S. of Grass
Patch. (Holotype only in Mel-
bourne.)

pandanicarpa R.Br.—S. of Grass
Patch

Baxteri R.Br.—Chester Pass, Stir-
ling Range

trifurcata (Sm.) R.Br.—Canning-
ton swamps

+ *forma* (?)—40 ml. W. of
Ravensthorpe

amplexicaulis R.Br.—4 ml. E. of
Pemberton; Greystones Rd. (Mun-
daring)

prostrata R.Br.—Esperance

laurina R.Br.—Fitzgerald R. (head)

cinerea R.Br.—S. of Grass Patch (1
specimen only in Melbourne)

corymbosa R.Br.—Pallinup R.

undulata R.Br.—Chester Pass, Stir-
ling Ra.; Greystones Rd. (Mun-
daring)

elliptica (Sm.) R.Br.—Greystones
Rd. (Mundaring)

ambigua Meissn. in Lehm.—Chester
Pass, Stirling Ra.

varia R.Br.—40 ml. W. of Ravens-
thorpe

hissocarpa R.Br.—Fitzgerald R.
(head)

bipinnatifida R.Br.—Greystones Rd.
(Mundaring)

Xylomelum

occidentale R.Br.—Yarloop

Lambertia

incrmis R.Br.—S. of Grass Patch;
35 ml. W. of Esperance

ericifolia R.Br.—Chester Pass, Stir-
ling Ra.

multiflora Lindl.—Darling Ra., Nth.
Darnalup

Banksia (10 spp.)

pulchella R.Br.—35 ml. W. of
Esperance

nutans R.Br.—Chester Pass, Stir-
ling Ra.

sphaerocarpa R.Br.—Cannington
swamps

Brownii Baxt. ex R.Br.—Chester
Pass, Stirling Ra.

attenuata R.Br.—Pallinup R.

repens Labill.—S. of Grass Patch;
70 ml. W. of Esperance

prostrata R.Br.—40 ml. W. of
Ravensthorpe

quercifolia R.Br.—Chester Pass,
Stirling Ra.; 4 ml. E. of Nornalup

eoccinea R.Br.—Chester Pass, Stir-
ling Ra.

ilicifolia R.Br.—4 ml. E. of Nornalup

Dryandra

floribunda R.Br.—35 ml. W. of Es-
perance; Chester Pass, Stirling
Ra.; City Beach

mucronulata R.Br.—Chester Pass,
Stirling Ra.

formosa R.Br.—Chester Pass, Stir-
ling Ra.

nivea (Labill.) R.Br.—70 ml. W. of
Esperance; Nth. Darnalup; Ser-
pentine Falls

? *bipinnatifida* R.Br.—40 ml. W. of
Ravensthorpe

SANTALACEÆ

Exocarpus

spartea R.Br.—Esperance

? *sp.*—S. of Grass Patch

Leptomeria

pauciflora R.Br.—4 ml. E. of
Nornalup

scrobiculata R.Br.—Chester Pass,
Stirling Ra.; Shannon R.

squarrulosa R.Br.—Pemberton

Santalum

aeuminatum (R.Br.) DC.—City
Beach

OLACACEÆ

Olaæ

phyllanthi (Labill.) R.Br.—Esper-
ance; 17 ml. S. of Ravensthorpe

RAFFLESIAEÆ

Pilostyles

† *Hamiltonii* Gardner—Mundaring
pine plantation (parasitic on

Daviscia incrassata)

LORANTHACEÆ

- Nuytsia*
floribunda (Labill.) R.Br. — Esperance
Amyema
quandang (Lindl.) van Tieghem—
20 ml. W. of Colona Stn., S.A.

CHENOPODIACEÆ

- Rhagodia*
Preissii Moq. in DC.—Madura Stn.,
Fraser Ra.
Atriplex
nummularia Lindl. in Miteh.—Head
of Bight, S.A.
paludosa R.Br.—Ceduna, S.A.
vesicaria Heward ex Benth.—Head
of Bight, S.A.
Bassia
sclerolænoides F.v.M.—Colona Stn.,
S.A.
uniflora (R.Br.) F.v.M.—Head of
Bight, S.A.
obliquicuspis R. H. Anderson—
Colona Stn., S.A.
Kochia
lobiflora (F.v.M.) Benth.—Colona
Stn., S.A.
crioclada (Benth.) Gauba—Ceduna,
S.A.; Head of Bight, S.A.
tomentosa (Moq.) F.v.M.—Ravens-
thorpe
+ var. *tenuifolia* F.v.M.—Ravens-
thorpe
scdifolia F.v.M.—Head of Bight,
S.A.
oppositifolia F.v.M.—Head of Bight,
S.A.

Arthrocnemum

- arbusculum* (R.Br.) Moq.—Head of
Bight, S.A.

AMARANTHACEÆ

- Hemichroa*
diandra R.Br.—Head of Bight, S.A.
[The genus is intermediate between
Chenopodiaceæ and *Amaranthaceæ*
and placed in one or other family
by various botanists.]
Trichinium
obovatum Gaud.—Ceduna, S.A.
alopeuroideum Lindl. in Mitch.—
King's Park, Perth
spathulatum R.Br.—Fraser Ra.

PHYTOLACCACEÆ

- Gyrostemon*
Sheathii W. V. Fitzg.—Esperance
Cononocarpus
cotinifolius (Desf.) F.v.M.—Between
Balladonia Stn. and Fraser Ra.
Tersonia
brevipes Moq. in DC.—City Beach

AIZOACEÆ

- Tetragonia*
*† ?*Zeyheri* Fenzl ex Harv. and Sond.
—City Beach

Disphyma

- australe* (Soland ex Forst.) J. M.
Black—Head of Bight, S.A.

PORTULACACEÆ

- Calandrinia*
brevipedata F.v.M.—City Beach

RANUNCULACEÆ

- Clematis*
pubescens Hueg.—“Pimelca,” 9 ml.
N.W. of Pemberton

CRUCIFERÆ

- **Heliophila*
**pusilla* L.—City Beach
Stenopetalum
lineare R.Br.—Colona Stn., S.A.
robustum Endl. in Hueg.—City
Beach
Alyssum
linifolium Steph.—Colona Stn., S.A.
Hymenolobus
procumbens (L.) Nuttall—Colona
Stn., S.A.
Capsella
pilosula F.v.M.—Colona Stn., S.A.

DROSERACEÆ

- Drosera*
scorpioides Planch.—70 ml. W. of
Esperance
gigantica Lindl.—Greystones Rd.
(Mundaring)
Menziesii R.Br. in DC.—Darling Ra.,
Nth. Darnalup
stolonifera Endl.—“Banksia” mill
near Dwellingup

PITTIOSPORACEÆ

- Pittosporum*
phillyreoides DC.—Madura Stn.
Cheiranthra
Preissiana Putterl. in Lehm.—1 ml.
S. of Bull's Brook. (1 specimen
only in Melbourne.)

LEGUMINOSÆ (98 spp.)

- Acacia* (37 spp.)
glaucoptera Benth.—S. of Grass
Pateh; Ravensthorpe
alata R.Br.—“Pimelca,” 9 ml. N.W.
of Pemberton
diptera Lindl.—Chester Pass, Stir-
ling Ra.; Porongorup foothills; 4
ml. E. of Pemberton
spinescens Benth.—Venus Bay, S.A.
latipes Benth.—40 ml. W. of Ravens-
thorpe
collettioides (A. Cunn.) Benth.,
var. *nysophylla* Benth.—Salmon
Gums
sphaclata Benth. in Hook.,
var. *scssilis* Benth.—Yarloop
Sowdenii Maiden—20 ml. W. of
Colona Stn., S.A.
gonophylla Benth.—S. of Grass
Pateh

LEGUMINOSÆ (contd.)

Acacia (contd.)

- ericifolia* Benth. in Hook.—4 ml. W. of Ravensthorpe
- †*sp. nov.* (dwarf, turgid glaucous leaves $\frac{1}{2}$ ")—S. of Grass Patch; 50 ml. W. of Ravensthorpe
- cometes* Andrews—S. of Grass Patch (fragment only in Melbourne)
- ferocior* Maiden—4 ml. S. of Borden (1 specimen only in Melbourne)
- †*Pritzeliiana* Gardner—S. of Grass Patch
- sp. nov.* (thick, marginate, rotund leaves, $\frac{3}{8}$ ")—S. of Grass Patch
- †*sp.*—City Beach (2 forms)
- erinacea* Benth. in Hook.—Ravensthorpe
- †*dermatophylla* Benth.—S. of Grass Patch
- pilosa* Benth.—S. of Grass Patch
- hastulata* Sm.—Denmark (river banks)
- bidentata* Benth. in Hook.—S. of Grass Patch
- aeanthoelada* F.v.M.—“Jarramongup” Stn.
- Graffiana* F.v.M.—Salmon Gums
- myrtifolia* Willd.,
var. *angustifolia* Benth.—Porongorup foothills; Walpole; 4 ml. E. of Pemberton
- urophylla* Benth.—Denmark (river banks); 4 ml. E. of Pemberton
- nitidula* Benth.—Ravensthorpe
- heteroelita* Meissn. in Lehm.—Esperance; Bunbury Beach
- ? *lineolata* Benth. in Schlecht.—40 ml. W. of Ravensthorpe
- †*sp. nov.* (broad, glaucous, obtuse, plurinerved leaves, 1-2")—1 ml. N. of Ravensthorpe
- ixiophylla* Benth.—Ravensthorpe
- sessilispica* Maid. and Blakely.—60 ml. W. of Ravensthorpe (fragment only in Melbourne)
- aeuminata* Benth.—Between Balladonia and Fraser Ra.; 4 ml. W. of Ravensthorpe
- pulehella* R.Br. in Ait. — Chester Pass, Stirling Ra.; Napier Ck.; City Beach
+ *forma* (?)—40 ml. W. of Ravensthorpe
- pentadenia* Lindl.—Parryville
- negricans* R.Br.—Napier Ck.
- strigosa* Link—Chester Pass, Stirling Ra.; Mt. Clarence (Albany); Parryville; Dwellingup
+ *forma* (?)—Esperance
- Drummondii* Lindl.—Mundaring fire tower

Labichea

- lanecolata* Benth. in Hueg.—Jane Brook (Nat. Park)
- punctata* Benth. in Lindl.—Yarloop
- Cassia*
- eremophila* A. Cunn. in T. Vog.—Venus Bay, S.A.; 4 ml. W. of Ravensthorpe
- Brachysema*
- latifolium* R.Br. in Ait.—35 ml. W. of Esperance
- Oxylobium* [sensu lato]
- atropurpureum* Turcz.—Chester Pass, Stirling Ra.
- capitatum* Benth. in Hueg.—Nth. Darnalup; Cannington swamps
- euneatum* Benth. in Lindl.,
var. *emarginatum* Benth.—Chester Pass, Stirling Ra.
- heterophyllum* (Turcz.) Benth.,
? *forma*—4 ml. W. of Ravensthorpe
- Chorizema*
- nervosum* T. Moore—40 ml. W. of Ravensthorpe
- ilicifolium* Labill.—Valley-of-Giants (Nornalup)
- glycinifolium* (Sm.) Druce—Chester Pass, Stirling Ra.
- aciculare* (DC.) Gardner—S. of Gr. Patch; 35 ml. W. of Esperance; Napier Ck.
- Mirbelia*
- spinosa* Benth.—Jane Brook (Nat. Park)
- Isotropis*
- euneifolia* (Sm.) Domin—S. of Gr. Patch; Napier Ck.
- Gompholobium*
- ovatum* Meissn. in Lehm.—4 ml. E. of Pemberton
- polymorphum* R.Br.—Jane Brook (Nat. Park)
- marginatum* R.Br.—Porongorup foothills
- burtonioides* Meiss. in Lehm.—Chester Pass, Stirling Ra.
- tomentosum* Labill.—1 ml. S. of Bull's Brook; City Beach
- venustum* R.Br.—70 ml. W. of Esperance; Mundaring fire tower
- Knightianum* Lindl.—35 ml. W. of Esperance; 30 ml. W. of Ravensthorpe; Chester Pass, Stirling Ra.
- Burtonia*
- villosa* Meissn. in Lehm.—Chester Pass, Stirling Ra.
- seabra* R.Br.—35 ml. W. of Esperance
- Jacksonia*
- fureclata* (Bonpl.) DC.—State Herbarium, Perth (grounds)
- Sternbergiana* Hueg.—1 ml. S. of Bull's Brook

LEGUMINOSÆ (contd.)

- Sphærolobium*
alatum Benth.—Chester Pass, Stirling Ra.
- Daviesia*
cordata Sm.—4 ml. E. of Pemberton; Mundaring Weir
pachyphylla F.v.M.—10 ml. W. of Ravensthorpe
terctifolia (R.Br.) Benth.—35 ml. W. of Esperance
colletioides Meissn.—Chester Pass, Stirling Ra.
reversifolia F.v.M.—35 ml. W. of Esperance; 40 ml. W. of Ravensthorpe (1 collection only in Melbourne)
incrassata Sm. — Mundaring pine plantation (the host of *Pilostyles Hamiltonii*)
divaricata Benth. — State Herbarium, Perth (grounds)
juncea Sm.—Chester Pass, Stirling Ra.; Napier Ck.
- Aotus*
 ? *sp.*—10 ml. W. of Ravensthorpe
- Pultenæa*
reticulata (Sm.) Benth.—4 ml. E. of Nornalup; 15 ml. N.W. of Walpole
obcordata (R.Br.) Benth.—Esperance
- Gastrolobium*
spathulatum Benth. in Lindl.—Jane Brook (Nat. Park)
spinosa Benth. in Lindl.—1 ml. S. of Bull's Brook
calycinum Benth. in Lindl.—Greystones Rd. (Mundaring)
- Eutaxia*
microphylla (R.Br.) Gardner—Ravensthorpe
- Latrobea*
diosmifolia Benth.—10 ml. W. of Ravensthorpe
- Dillwynia*
cincrescens R.Br.—Mundaring fire tower; 1 ml. S. of Bull's Brook
sp. (glabrous calyx)—35 ml. W. of Esperance; 30 ml. E. of Ravensthorpe
 ? *sp.*—S. of Grass Patch
- Bossia*
aquifolium Benth.—“Pimelea,” 9 ml. N.W. of Pemberton
linophylla R.Br. in Ait.—Porongorup foothills
pulchella Meissn. in Lchm.—Mundaring fire tower
ornata (Lindl.) Benth.—“Pimelea,” 9 ml. N.W. of Pemberton; Mundaring fire tower
criocarpa Benth. in Hueg., var. *angustifolia* (Meissn. in

Lehm.) comb.?—Jane Brook (Nat. Park).

- Templetonia*
retusa (Vent.) R.Br.—Esperance
Battii F.v.M.—Colona Stn., S.A. (Holotype only in Melbourne)
sulcata (Meissn.) Benth.—S. of Grass Patch
- Hovea*
chorizemifolia (Sweet) DC.—Napier Ck.; 4 ml. E. of Nornalup
elliptica (Sm.) DC.—Napier Ck.; 4 ml. E. of Pemberton
trisperma Benth. in Hueg.—Chester Pass, Stirling Ra.; Shannon R.; Yarloop
pungens Benth. in Hueg.—City Beach
- **Lupinus*
 **angustifolius* L.—State Herbarium, Perth (grounds)
- Glycine*
clandestina Wendl., var. *sericea* Benth.—Balladonia (granite)
- Kennedya*
coccinea Vent.—Napier Ck.
- Hardenbergia*
Comptoniana (Andr.) Benth. in Hueg.—Napier Ck.; Warren R. Nat. Park; City Beach

GERANIACEÆ

- Erodium*
 **Botrys* (Cav.) Bertol.—1 ml. S. of Bull's Brook
- Pelargonium*
 **capitatum* (L.) Ait.—Bunbury Beach; City Beach

RUTACEÆ (16 spp.)

- Geijera*
linearifolia (DC.) Black—Ceduna, S.A.
- Boronia* (8 spp.)
megastigma Nees in Lehm.—Parryville; Shannon R.
tetrandra Labill.—Esperance
 †*sp.* (aff. *B. pulchella*)—4 ml. E. of Nornalup
gracilipes F.v.M.—Parryville; 4 ml. E. of Nornalup
backeacea F.v.M.—S. of Gr. Patch (Holotype only in Melbourne)
crenulata Sm.—Chester Pass, Stirling Ra.; Napier Ck.; 4 ml. E. of Nornalup
inornata Turcz.—S. of Grass Patch
spathulata Lindl. — Chester Pass, Stirling Ra.; 4 ml. E. of Nornalup; Mundaring fire tower
- Eriostemon*
spicatus A. Rich.—Darling Ra., Nth. Darnalup
- Crowea*
angustifolia Turcz.—Parryville

LEGUMINOSÆ (contd.)

dentata (R.Br.) Benth.—4 ml. E. of Nornalup

Microcybe

pauciflora Turcz.—S. of Gr. Patch
multiflora Turcz.—6 ml. N. of Salmon Gums

+ var. "*baccharioides*" F.v.M. ms.—S. of Grass Patch

Correa

pulchella Sweet—Venus Bay, S.A.

Chorilæna

hirsuta Benth.—Shannon R.

TREMANDRACEÆ

Tremandra

stelligera R.Br. in DC.,
var. *hispida* Benth.—6 ml. N.W. of Walpole

diffusa R.Br. in DC.—Walpole

Platytheca

verticillata (Hueg.) Baill.—Chester Pass, Stirling Ra.

Tetratheca

affinis Endl. in Hueg.—Chester Pass, Stirling Ra.

setigera Endl. in Hueg.—Kirup

hispidissima Steetz in Lehm.—Parryville

hirsuta Lindl.—Mundaring fire tower

viminea Lindl.—Chester Pass, Stirling Ra.; Dwellingup

POLYGALACEÆ

Bredemeyera

volubilis (Labill.) Chod.—Madura Stn.; 1 ml. S. of Bull's Brook

virgata (Labill.) comb.?—Parryville

EUPHORBIACEÆ

Phyllanthus

calycinus Labill.—Esperance

scaber Klotzsch in Lehm.—

Esperance

Adriana

quadripartita (Labill.) Gaud.—Esperance

Poranthera

microphylla Brongn.—Mundaring fire tower

Huegelii Klotzsch in Lehm.—Mundaring fire tower

Ricinocarpus

glaucus Endl. in Hueg.—Shannon R.

Beyeria

Leschenaultii (DC.) Baill.,
var. *Drummondii* Gruning—Venus Bay, S.A.

Monotaxis

gracilis (Muell. Arg.) Baill.—S. of Grass Patch

Amperea

ericoides Adr. Juss.—Mt. Clarence (Albany)

protensa Nees in Lehm.—4 ml. E. of Pemberton (*Type only in Melbourne*)

STACKHOUSIACEÆ

Stackhousia

pubescens A. Rich.—Esperance;
Jane Brook (Nat. Park)

Huegelii Endl. in Hueg.—10 ml. W. of Ravensthorpe

Brunonis Benth.—Jane Brook (Nat. Park)

SAPINDACEÆ

Diplopeltis

Huegelii Endl. in Hueg.—Jane Brook (Nat. Park); City Beach

Dodonæa

ptarmicifolia Turcz.—Ravensthorpe

ceratocarpa Endl. in Hueg.—

Esperance

†*tamblyophylla* Diels—S. of Grass

Patch

hexandra F.v.M.—Venus Bay, S.A.

Baueri Endl.—Venus Bay, S.A.

microzyga F.v.M.—Fraser Ra.

RHAMNACEÆ

Pomaderris

myrtilloides Fenzl in Hueg.—Esperance

Forrestiana F.v.M.—Madura Stn., Moonera, near Cocklebiddy (197 ml. W. of Eucla)

Trymalium

floribundum Steud.—Napier Ck.

ledifolium Fenzl in Hueg.—Porongorup foothills; "Banksia" mill near Dwellingup; Jane Brook (Nat. Park)

Spyridium

globulosum (Labill.) Benth.—Esperance; Bunbury Beach

†*sp.* (aff. *S. rotundifolium*)—S. of Grass Patch

Cryptandra

pungens Steud. in Lehm.—10 ml. W. of Ravensthorpe

MALVACEÆ

Lavatera

plebeia Sims—Kunalda Cave, S.A.

Plagianthus

squamatus (Nees) Benth.—Colona Stn., S.A.; Head of Bight, S.A.

Sida

virgata Hook in Mitch.—1 ml. N. of Ravensthorpe

Hibiscus

Huegelii Endl. in Hueg.—4 ml. W. of Ravensthorpe

STERCULIACEÆ

Rulingia

cygnorum (Steud.) Gardner—Esperance; Jane Brook (Nat. Park)

parviflora Endl. in Hueg.—

Esperance

STERCULIACEÆ (contd.)

Thomasia

- quercifolia* (Andr.) J. Gay—
Parryville
foliosa J. Gay—Darling Ra., Nth.
Darnalup
triphyllo (Labill.) J. Gay—
Esperance

†*sp.*—Shannon R.

Guichenotia

- ledifolia* J. Gay—Esperance

Lysiosepalum

- involutatum* (Turcz.) Gardner—
Fitzgerald R. (head)

Lasiopetalum

- discolor* Hook.—Venus Bay, S.A.
rosmarinifolium (Turcz.) Benth.—
S. of Grass Patch
Behrii F.v.M.—Venus Bay, S.A.

DILLENIACEÆ

Hibbertia

- montana* Steud. in Lehm.—“Banksia” mill near Dwellingup
+ var. *confertifolia* (Steud.)
Benth.—Chester Pass, Stirling
Ra.

+ var. *major* Benth.—Shannon R.

?+ var. (giant form)—“Banksia”
mill near Dwellingup

- amplexicaulis* Steud. in Lehm.—
Pemberton

- Cunninghamii* (Benth.) Steud.—
Chester Pass, Stirling Ra.; Napier
Ck.

- cuneiformis* (Labill.) Gilg. in Engl.
and Prantl — “Pimelea,” 9 ml.
N.W. of Pemberton

- Huegelii* (Endl.) F.v.M. — Darling
Ra., Nth. Darnalup

- glaberrima* (Steud.) Gilg. in Engl.
and Prantl — Jane Brook (Nat.
Park)

- acerosa* (R.Br.) Benth. — Darling
Ra., Nth. Darnalup

- stricta* R.Br.,
var. *leiocarpa* Benth.—20 ml. N.
of Esperance

FRANKENIACEÆ

Frankenia

- sessilis* Summerhayes—Head of
Bight, S.A.

†*densa* Summerhayes—Moonera, near
Cocklebidy, 197 ml. W. of Eucla

- foliosa* J. M. Black—Colona Stn.,
S.A.

VIOLACEÆ

Hybanthus

- floribundus* (Walp.) F.v.M.—1 ml.
N. of Ravensthorpe

- calycinus* (Steud.) F.v.M.—1 ml. S.
of Bull's Brook

†*sp. nov.* (?)—S. of Grass Patch

THYMELÆACEÆ

Pimblea (13 spp.)

- spectabilis* (Fisch. and Mey.) Lindl.
—Mundaring fire tower

rosea R.Br.—Napier Ck.

- ferruginea* Labill.—Esperance
brachyphylla Benth.—S. of Grass
Patch

Maxwellii (F.v.M.) Benth.—Chester
Pass, Stirling Ra.

- suavcolens* (Endl.) Meissn. in Lehm.
—Shannon R.; Yarloop; North
Darnalup

physodes Hook.—17 ml. S. of
Ravensthorpe

imbricata R.Br.—1 ml. S. of Bull's
Brook

argentea R.Br.—1 ml. S. of Bull's
Brook

clavata Labill.—Warren R. Nat.
Park

thesioides S. Moore—Fraser Ra.

longiflora R.Br.—Walpole

glauca R.Br.—Venus Bay, S.A.

MYRTACEÆ (94 spp.)

Eucalyptus (38 spp.)

- annulata* Benth. — Between Balla-
donia and Fraser Ra. (*forma?*);
Ravensthorpe; Ongerup; 4 ml. S.
of Borden

platypus Hook.—Ongerup
+ var. *heterophylla* Blakely—
Ravensthorpe; 40 ml. W. of
Ravensthorpe

occidentalis Endl. in Hueg.—
Ravensthorpe

astringens Maiden—4 ml. S. of
Borden

eremophila (Diels) Maiden—6 ml.
N. of Salmon Gums

spathulata Hook.—Ongerup
+ var. *grandiflora* Benth.—S. of
Grass Patch; 60 ml. W. of
Ravensthorpe

goniantha Turcz.—S. of Grass Patch

†*Le Souefii* Maiden—Fraser Ra.
dumosa A. Cunn. ex Schauer in
Walp.—6 ml. N. of Salmon Gums;
S. of Grass Patch; 30 ml. E. of
Ravensthorpe

incrassata Labill.—Eucla; Esperance
+ var. *costata* (Behr and F.v.M.)
N. T. Burbridge—20 ml. W. of
Colona Stn., S.A.; 30 ml. E. of
Ravensthorpe

+ var. *angulosa* (Schauer) Benth.
—Port Lincoln, S.A.

conglobata (R.Br.) Maiden—4 ml.
W. of Ravensthorpe; Borden

tetraptera Turcz.—30 ml. E. of
Ravensthorpe

Forrestiana Diels—S. of Grass Patch
(one collection only in Melbourne)

doratoxylon F.v.M.—Chester Pass,
Stirling Ra.

MYRTACEÆ (contd.)

- †*diptera* Andrews—6 ml. N. of Salmon Gums
megacarpa F.v.M.—Weld R.
gomphocphala DC.—City Beach
diversicolor F.v.M.—4 ml. E. of Pemberton
redunca Schauer in Lehm.—30 ml. E. of Ravensthorpe; 40 ml. W. of Ravensthorpe
†*cylindriflora* Maiden and Blakely—S. of Grass Patch
diversifolia Bonpl. — Port Lincoln, S.A.; Venus Bay, S.A.
salubris F.v.M.—Fraser Ra.
rudis Endl. in Hueg.—Keysbrook; Mundaring weir
calophylla R.Br.—Chester Pass, Stirling Ra.; Pemberton
ficifolia F.v.M.—4 ml. E. of Nornalup
hæmatoxylon Maiden—Darling Ra., Nth. Darnalup (*one collection only in Melbourne*)
calycogona Turcz.—Between Balladonia and Fraser Ra.; 40 ml. W. of Ravensthorpe; Ongerup
gracilis F.v.M.—Eucla
†*sp.* (aff. *E. gracilis*)—Ravensthorpe
salmonophloia F.v.M.—Ravensthorpe
oleosa F.v.M.—Between Balladonia and Fraser Ra.; Ravensthorpe
+ var. *glauca* Maiden (syn. *E. transcontinentalis*) — Fraser Ra.
Flocktonia Maiden—6 ml. N. of Salmon Gums; S. of Grass Patch
falcata Turcz.,
var. *ecostata* Maiden—30 ml. E. of Ravensthorpe
decipiens Endl. in Hueg.—5-10 ml. S. of Chester Pass, Stirling Ra.
uncinata Turcz.—Fitzgerald R. (head)
buprestium F.v.M.—5-10 ml. S. of Chester Pass, Stirling Ra.
marginata Sm.—Chester Pass, Stirling Ra.; 4 ml. E. of Pemberton
†*Jacksonii* Maiden—Valley-of-Giants (Nornalup)
Leptospermum
spinescens Endl. in Hueg.—70 ml. W. of Esperance (*one collection only in Melbourne*)
erubescens Schauer in Lehm.—Fitzgerald R. (head)
Agonis
flexuosa (Spreng.) Schauer in Lehm.—“Pimelea,” 9 ml. N.W. of Pemberton
hypericifolia Schauer in Lehm.—Chester Pass, Stirling Ra.
marginata (Labill.) Schauer in Lehm.—Esperance

linearifolia (DC.) Schauer in Lehm.—35 ml. W. of Esperance; “Pimelea,” 9 ml. N.W. of Pemberton
parviceps Schauer in Lehm.—Chester Pass, Stirling Ra.; Porongorup foothills

Kunzea

- recurva* Schauer in Lehm.—Fitzgerald R. (head); Chester Pass, Stirling Ra.; 15 ml. N.W. of Walpole; Nth. Darnalup
affinis S. Moore—10 ml. W. of Ravensthorpe
Melaleuca (22 spp.)
elliptica Labill.—Ravensthorpe (1 ml. N.)
acuminata F.v.M.—Ravensthorpe (1 ml. N.)
violacea Lindl.—5-10 ml. S. of Chester Pass, Stirling Ra.
cardiophylla F.v.M.—Ravensthorpe (1 ml. N.)
suberosa (Schauer) Gardner—35 ml. W. of Esperance
pubescens Schauer in Walp.—Eucla; Ravensthorpe
hamulosa Turcz.—Cannington swamps
rhaphiophylla Schauer in Lehm.—Cannington swamps
cymbifolia Benth.—Between Balladonia and Fraser Ra.
cuticularis Labill.—Ravensthorpe (1 ml. N.)
calycina R.Br. in Ait.—S. of Grass Patch; 35 ml. W. of Esperance
pentagona Labill.,
var. *subulifolia* Schauer—Fitzgerald R. (head)
†*sp.*—4 ml. W. of Ravensthorpe
? *spathulata* Schauer in Lehm.—S. of Grass Patch; Fitzgerald R. (head)
+ var. (?)—35 ml. W. of Esperance
subtrigona Schauer in Lehm.—S. of Grass Patch
scabra R.Br. in Ait.—35 ml. W. of Esperance
thymoides Labill.—Chester Pass, Stirling Ra.
microphylla Sm.—Shannon R.
acerosa Schauer in Lehm.—S. of Grass Patch; City Beach
pauperiflora F.v.M.—6 ml. N. of Salmon Gums
†*sp.* (cypress-like branchlets)—40 ml. W. of Ravensthorpe
Conothamnus
aureus (Turcz.) Domin—Chester Pass, Stirling Ra. (*one collection only in Melbourne*)
Calothamnus
gracilis R.Br.—35 ml. W. of Esperance; 30 ml. E. of Ravensthorpe

MYRTACEÆ (contd.)

- quadrifidus* R.Br.—Esperance; City Beach
Beanfortia
decussata R.Br.—Chester Pass, Stirling Ra.
heterophylla (Turcz.) Domin—Chester Pass, Stirling Ra.
Bækea
crassifolia Lindl. in Mitch.—S. of Grass Patch
?tetragona (F.v.M.) Benth.—30 ml. W. of Ravensthorpe
sp. (aff. *B. ramosissima*)—40 ml. W. of Ravensthorpe
crispiflora F.v.M.—Fitzgerald R. (head)
Astartea
?ambigua F.v.M.—S. of Grass Patch
Hypocalymma
robustum Endl. in Hueg.—Darling Ra., Nth. Darnalup
speciosum Turcz.—Chester Pass, Stirling Ra.
Phillipsii Harv.—Chester Pass, Stirling Ra.
angustifolium Endl. in Hueg.—Darling Ra., Nth. Darnalup
Calytrix
brachyphylla Turcz.—S. of Grass Patch; 35 ml. W. of Esperance; Pallinup R.
tetragona Labill.—30 ml. W. of Ravensthorpe
†sp. (minute calyx)—Pallinup R.
Chamelaucinum
megalopetalum (F.v.M.) Benth.—35 ml. W. of Esperance
Thryptomene
australis Endl.—30 ml. W. of Ravensthorpe (one collection only in Melbourne)
saxicola (A. Cunn.) Schauer in Lehm.—Esperance
Darwinia
vestita (Endl.) Benth.—35 ml. W. of Esperance; Chester Pass, Stirling Ra.
diosmoides (DC.) Benth.—Esperance
citriodora (Endl.) Benth.—Jane Brook (Nat. Park)
pimelcoides Kayser and Wakef.—Jane Brook (Nat. Park) (Co-Type only in Melbourne)
Verticordia
plumosa (Desf.) Domin—S. of Grass Patch
Preissii Schauer in Lehm.—35 ml. W. of Esperance; 70 ml. W. of Esperance; 30 ml. W. of Ravensthorpe
multiflora Turcz.—30 ml. E. of Ravensthorpe
habrantha Schauer in Lehm.—Chester Pass, Stirling Ra.

HALORAGIDACEÆ

- Loudonia*
aurea Lindl.—Mundaring fire tower

UMBELLIFERÆ

- Hydrocotyle*
pilifera Turcz.—City Beach
Centella
?sp.—Shannon R.
Trachymene
anisocarpa (Turcz.) Burt—Parryville. (Blue-flowered.)
pilosa Sm.—City Beach
Platysace
compressa (Labill.) Norman—Esperance
tenuissima (Benth.) Norman—4 ml. E. of Pemberton
Xanthosia
rotundifolia DC.—4 ml. E. of Nornalup
Actinotus
superbus O. H. Sargent—17 ml. S. of Ravensthorpe (Co-Type only in Melbourne)

EPACRIDACEÆ (36 spp.)

- Andersonia*
cehinocephala (Stschegl.) Druce—Chester Pass, Stirling Ra.
simplex (Stschegl.) Druce—Chester Pass, Stirling Ra.
sprengelioides R.Br.—Porongorup foothills
parvifolia R.Br.—35 ml. W. of Esperance
depressa R.Br.—4 ml. E. of Nornalup
cærulea R.Br.—Shannon R.
subulata Benth.—Parryville (Co-Type only in Melbourne)
Sphenotoma
dracophylloides Sond. in Lehm.—Chester Pass, Stirling Ra.
gracile (R.Br.) Sweet—15 ml. N.W. of Walpole
Lysinema
elliatum R.Br.—S. of Grass Patch; 35 ml. W. of Esperance
Astroloma
pallidum R.Br.—Napier Ck.
Leucopogon (18 spp.)
verticillatus R.Br.—Napier Ck.
australis R.Br.—15 ml. N.W. of Walpole
+ var. (?)—Chester Pass, Stirling Ra.
revolutus R.Br.—Chester Pass, Stirling Ra.; Napier Ck.; "Pimelea," 9 ml. N.W. of Pemberton
atherolepis Stschegl.,
var. densiflorus Benth.—Chester Pass, Stirling Ra.
gibbosus Stschegl.—Chester Pass, Stirling Ra.

EPACRIDACEÆ (contd.)

- †*sp.*—Chester Pass, Stirling Ra.
 †*sp.* (resembling *L. biflorus*)—4 ml.
 E. of Nornalup
 †*sp.* (large pink corolla like an *Epa-*
cris)—Greystones Rd. (Mundar-
 ing)
 †*sp.* (resembling *L. virgatus*)—4 ml.
 E. of Nornalup
carinatus R.Br.—20 ml. N. of
 Esperance
polystachyus R.Br.—4 ml. E. of
 Nornalup
sprengelioides Sond. in Lehm.—
 Greystones Rd. (Mundaring)
obtusatus Sond. in Lehm.—S. of
 Grass Patch
fimbriatus Stschegl.—40 ml. W. of
 Ravensthorpe
propinquus R.Br.—Pemberton
pendulus R.Br.—1 ml. N. of Shannon
 R. bridge
crassifolius Sond. in Lehm.—70 ml.
 W. of Esperance
sp.—1 ml. S. of Bull's Brook
Monotoca
oligarrhenoides F.v.M.—35 ml. W.
 Esperance (*Holo-type only in Mel-*
bourne)
tamariscina F.v.M.—Chester Pass,
 Stirling Ra.; 4 ml. E. of Nornalup
Acrotriche
ramiflora R.Br.—Fitzgerald R.
 (head) (*one collection only in*
Melbourne)
patula R.Br. Venus Bay, S.A.
Conostephium
pendulum Benth. in Hueg.—Yarloop
Needhamia
pumilio R.Br.—35 ml. W. of
 Esperance
Oligarrhena
mierantha R.Br.—Chester Pass,
 Stirling Ra.

LOGANIACEÆ

- Logania*
vaginalis (Labill.) F.v.M.—“Pime-
 lea,” 9 ml. N.W. of Pemberton
buxifolia F.v.M.—35 ml. W. of
 Esperance
stenophylla F.v.M.—S. of Grass
 Patch
fasciculata R.Br.—Esperance
serpyllifolia R.Br.—Napier Ck.; 4
 ml. E. of Pemberton

APOCYNACEÆ

- Alyxia*
buxifolia R.Br.—Bunbury Beach

CONVOLVULACEÆ

- Wilsonia*
humilis R.Br.—4 ml. W. of Ravens-
 thorpe

BORAGINACEÆ

- Halgania*
lavandulacea Endl.—S. of Grass
 Patch; Ravensthorpe

LABIATÆ

- Teucrium*
sessiliflorum Benth. in DC.—
 Ravensthorpe
Westringia
rigida R.Br.—6 ml. N. of Salmon
 Gums
Dampieri R.Br.—Elliston cliffs,
 S.A.
Hemigenia
 †*sp.*—Parryville
podalyrina F.v.M.—1 ml. N. of
 Shannon R. bridge
incana (Lindl.) Benth.—Jane Brook
 (Nat. Park)
Hemiaudra
pungens R.Br.—Napier Ck.
Prostanthera
calycina F.v.M.—Venus Bay, S.A.

SOLANACEÆ

- Lycium*
australe F.v.M.—Head of Bight,
 S.A.
Solanum
orbiculatum Dunal in Poir.—Ball-
 donia (granite)
Nicotiana
Goodspeedii Wheeler—Head of
 Bight, S.A.; Kunalda, S.A.
Anthocercis
littorea Labill.—Esperance; City
 Beach

SCROPHULARIACEÆ

- **Dischisma*
 **arenarium* E. Mey.—City Beach

OROBANCHACEÆ

- Orobanche*
 ?*australiana* F.v.M.—City Beach

LENTIBULARIACEÆ

- Polypompholyx*
multifida (R.Br.) F.v.M.—1 ml. N.
 of Shannon R. bridge
Utricularia
Menziesii R.Br.—Mt. Clarence
 (Albany)

MYOPORACEÆ

- Myoporum*
serratum R.Br.—Chester Pass, Stir-
 ling Ra.
Eremophila
Dempsteri F.v.M.—Moonera, near
 Cocklebiddy, 197 ml. W. of Eucla
pachyphylla Diels—4 ml. W. of
 Ravensthorpe
 (*one collection only in Melbourne*)
 †*diehroantha* Diels—4 ml. W. of
 Ravensthorpe

MYOPORACEÆ (contd.)

- †*sp.* (aff. *E. dichroantha*)—Salmon Gums
scoparia (R.Br.) F.v.M.—Colona Stn., S.A.
Weldii F.v.M.—Ceduna, S.A.
maculata F.v.M.—Fraser Ra.
alternifolia R.Br.—Madura Stn; Fraser Ra.

PLANTAGINACEÆ

- Plantago*
varia R.Br.—Balladonia (granite)

RUBIACEÆ

- Opercularia*
vaginata Labill. — 50 ml. W. of Ravensthorpe; Jane Brook (Nat. Park)
scabrida Schlecht.—30 ml. E. of Ravensthorpe
volubilis (R.Br.) Benth.—Parryville
hispidula Endl. in Hueg.—Esperancee
 + var. *pauciflora* (Endl.) Benth. —4 ml. E. of Pemberton
 †*sp.*—"Banksia" mill, near Dwellingup
Galium
umbrosum Sol.,
 var. *muriculatum* (Benth.) Ewart
 —Murrawijinie Cave, S.A.

LOBELIACEÆ

- Lobelia*
tenuior R.Br.—City Beach
rhombifolia De Vr. in Lehm.—1 ml. S. of Bull's Brook

GOODENIACEÆ (25 spp.)

- Velleia*
trinervis Labill.—S. of Grass Patch; Esperancee
Goodenia
 †*decursiva* W. V. Fitzg.—Esperancee (TYPE loc.)
affinis De Vr.—Ravensthorpe
strophiolata F.v.M.—S. of Grass Patch
pterygosperma R.Br.—35 ml. W. of Esperancee
Lcschenaultia
biloba Lindl. — Dwellingup; North Darnalup; Mundaring fire tower
linarioides DC.—City Beach
formosa R.Br.—S. of Grass Patch; 35 ml. W. of Esperancee
Diaspasis
filifolia R.Br.—15 ml. N.W. of Walpole
Scævola (9 spp).
spinescens R.Br.—Salmon Gums
striata R.Br.—Parryville
thesioides Benth.—30 ml. W. of Ravensthorpe
crassifolia Labill.—Bunbury Beach

- holosericea* De Vr.—City Beach
platyphylla Lindl.—Mundaring fire tower
microphylla (De Vr.) Benth.—Parryville
fasciculata Benth. in Hueg.—Jane Brook (Nat. Park)
sp. (resembling *Halgania lavandulaccae*)—S. of Grass Patch (one collection only in Melbourne)
Dampiera (8 spp.)
alata Lindl.—4 ml. E. of Pemberton; 1 ml. S. of Bull's Brook
Lindleyi De Vr.—S. of Grass Patch
hederacea R.Br.—Shannon R.
lavandulacea Lindl.—S. of Grass Patch
linearis R.Br.—4 ml. E. of Nornalup; Yarloop; 1 ml. S. of Bull's Brook
leptoclada Benth.—4 ml. E. of Nornalup
fasciculata R.Br.—Esperancee
sacculata F.v.M. ex Benth.—35 ml. W. of Esperancee.

STYLIDIACEÆ

- Stylidium* (12 spp.)
calcaratum R.Br. — "Banksia" mill near Dwellingup; Greystones Rd. (Mundaring)
imbriatum Benth. in Hueg.—Chester Pass, Stirling Ra.
petiolare Sond. in Lehm. — Greystones Rd (Mundaring); 1 ml. S. of Bull's Brook
junceum R.Br.—1 ml. S. of Bull's Brook
scandens R.Br.—5-10 ml. S. of Chester Pass, Stirling Ra.
amœnum R.Br.—Pemberton
Brunonianum Benth.—1 ml. S. of Bull's Brook
hispidum Lindl.—Greystones Rd. (Mundaring)
piliferum R.Br.,
 var. *minor* Mildbr.—10 ml. W. of Ravensthorpe
schœnoides DC.—Mundaring fire tower
pubigerum Sond. in Lehm.—1 ml. S. of Bull's Brook
adnatum R.Br.—Warren R. Nat. Park

COMPOSITÆ (28 spp.)

- Brachycome*
lineariloba (DC.) Druce—Colona Stn., S.A.
pusilla Steetz—Pallinup R.; Greystones Rd. (Mundaring)
ciliaris (Labill.) Less.—Colona Stn., S.A.
 + var. *lanuginosa* (Steetz) Benth. —Balladonia (granite)

COMPOSITÆ (contd.)

- Minuria*
Cunninghamii (DC.) Benth.—
 Nullarbor Stn., S.A.
Olearia (10 spp.)
axillaris (DC.) F.v.M.,
 var. *obovata* Benth.—City Beach
exiguifolia F.v.M.—Madura Stn.
ramosissima Benth.—S. of Grass
 Patch
pineleoides (DC.) Benth.,
 var. *minor* Benth.—Ceduna, S.A.
Muelleri (Sond.) Benth.—Madura
 Stn.
magniflora F.v.M.—Colona Stn.,
 S.A.
paucidentata (Stetz) F.v.M.—War-
 ren River Nat. Park; Mundaring
 Weir
rudis (Benth.) F.v.M.—City Beach
ciliata (Benth.) F.v.M.—S. of Grass
 Patch
homolepis F.v.M.,
 var. *pilosa* A. J. Ewart—S. of
 Grass Patch
Cratystylis
conocephala (F.v.M.) S. Moore—20
 ml. W. of Colona Stn., S.A.
Helipterum
Cotula (Benth.) DC.—City Beach
Helichrysum
ramosum DC.—Warren River Nat.
 Park

- cordatum* DC.—City Beach
Angianthus
tomentosus Wendl.—Balladonia
 (granite)
Gnephosis
 †*sp. nov.*—Balladonia (granite)
Podolepis
nutans Stetz in Lehm.—Jane Brook
 (Nat. Park)
Athrixia
asteroides (Turcz.) Gardner—50 ml.
 W. of Ravensthorpe
nivea (Stetz) Druce—30 ml. E. of
 Ravensthorpe
athrxioides (Sond. and F.v.M.)
 Druce—Ravensthorpe
 **Chrysanthemum*
 **frutescens* L.—Elliston cliffs, S.A.
Senecio
lautus Soland. in G. Forst.—Head of
 Bight, S.A.; Esperance
 **Tripteris*
 **clandestina* Less.—Parliament House
 grounds (Perth)
 **Ursinia*
 **anthemoides* (R.Br.) Gaertn.—Par-
 liament House grounds (Perth);
 Nth. Darnalup
 **Arctotis*
 **nivea* (L.) Hoffm.—City Beach (*one
 collection only in Melbourne*)

ENUMERATION OF LICHENS

THELOTREMACEÆ

- Thelotrema*
lepadinum Ach.—2½ ml. E. of Pem-
 berton (on bark of shrubs and
 trees)

DIPLOSCHISTACEÆ

- Urceolaria*
scruposa (Schreb.) Ach. — Murra-
 wjinie Cave, S.A. (on limestone
 soil)

STICTACEÆ

- Sticta*
 ?*Mougeotiana* Del.—2½ ml. E. of Pem-
 berton (on logs and earth)

PELTIGERACEÆ

- Peltigera*
polydactyla (Neck.) Hoffm.—Shan-
 non R. (logs and earth)

LECIDEACEÆ

- Lecidea*
decipiens (Ehrh.) Ach. — Colona
 Stn., S.A. (on sandy soil)

CLADONIAACEÆ

- Cladonia*
retipora (Labill.) Flk.—Greystones
 Rd. (soil amongst granite)

- aggregata* (Sw.) Eschw.—2½ ml. E.
 of Pemberton; Shannon R. (on
 ground)
 ?*lepidula* Krempel—2½ ml. E. of
 Pemberton (on logs and earth)
verticillata Hoffm.—2½ ml. E. of
 Pemberton (on logs and earth)
Thysanothecium
hyalinum (Tayl.) Nyl.—2½ ml. E.
 of Pemberton (on dead wood)

PERTUSARIACEÆ

- Pertusaria* sp.—Pallinup R. (on *Casu-
 arina* bark)

LECANORACEÆ

- Lecanora*
sphaerospora Muell. Arg. — Colona
 Stn. S.A. (on limestone pebbles—
*apparently this was known from
 Type only*)
sp. (indet.)—Colona Stn., S.A. (on
 stones and earth)
sp. (indet.)—Colona Stn., S.A. (on
 stones and earth)
sp. (indet.)—Colona Stn., S.A. (on
 stones and earth)

PARMELIACEÆ

Parmelia

- physodes* (L.) Ach.—2½ ml. E. of Pemberton (on wood)
quercina (Willd.) Vainio [syn. *P. tiliacea* (Hoffm.) Ach.]—Pallinup R. (on trees and wood)
?caperata (L.) Ach.—Pallinup R. (on dead wood)
conspersa (Ehrh.) Ach.—Greystones Rd. (on granite rocks)
congruens Ach.—Murrawijinie Cve., S.A. (on limestone soil)
hypoxantha Muell. Arg. — Colona Stn., S.A.; Murrawijinie Cave, S.A. (on sandy soil)
australiensis Cromb.—Colona Stn., S.A.; Murrawijinie Cave, S.A. (on sandy soil)
Heterodea
Muelleri (Hampe) Nyl.—Pallinup R. (moist sandy soil under *Casuarina*)

USNEACEÆ

Ramalina

- calicaris* (L.) Röhling—Colona Stn., S.A.; Pallinup River (on dead branches)

Usnea

- florida* (L.) Web. in Wigg., var. *strigosa* Ach.—Pallinup R. (on dead wood)

Siphula

- coriacea* Nyl.—Pallinup R.; Greystones Rd. (on sandy soil)

CALOPLACACEÆ

Blastenia

- ferruginea* Massal — Colona Stn., S.A. (red discs on bark of *Melaleuca pubescens*)

Caloplaca

- fulgens* (Sw.) Koerb., var. *bracteatum* Muell. Arg.—Colona Stn., S.A. (yellow rosettes on limestone ground)

TELOSCHISTACEÆ

Teloschistes

- parictinus* (L.) Norm.—Colona Stn., S.A. (on bark)
chrysophthalmus (L.) Beltr., var. *Sieberianus* Muell. Arg.—Colona Stn., S.A.; Pallinup R. (on bark)

BUELLIACEÆ

Buellia

- subalbula* (Nyl.) Muell. Arg.—Colona Stn., S.A. (on limestone pebbles — apparently this was from *Type* only)

PHYSICIACEÆ

Physcia

- ?pulverulenta* (Schreb.) Nyl.—Colona Stn., S.A. (on bark of *Melaleuca pubescens*)

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