

A BOTANICAL SURVEY OF WALCOTT INLET, KIMBERLEY, WESTERN AUSTRALIA

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ABSTRACT

A preliminary botanical survey of the Walcott Inlet area, north west Kimberley was undertaken in May 1983 and further visits were made in June 1987 and June 1988 associated with the National Rainforest Conservation Program. The vegetation is described and an annotated list of 344 species is presented. Previous studies of the biological and physical environment are reviewed. Conservation status and botanical significance of the vegetation types are discussed.

INTRODUCTION

A botanical survey of Walcott Inlet, a remote, inaccessible and poorly documented area of the north west Kimberley Division of Western Australia was undertaken in May 1983 during the "dry" season, supplemented with collections made during the National Rainforest Conservation Program surveys in June 1987 and 1988 (McKenzie et al. 1991). Descriptions of the vegetation and an annotated list of species supported by voucher collections are presented in this paper. A complete set of voucher specimens is lodged with the Western Australian Herbarium (PERTH). Duplicate specimens have been distributed to other herbaria.

LOCALITY

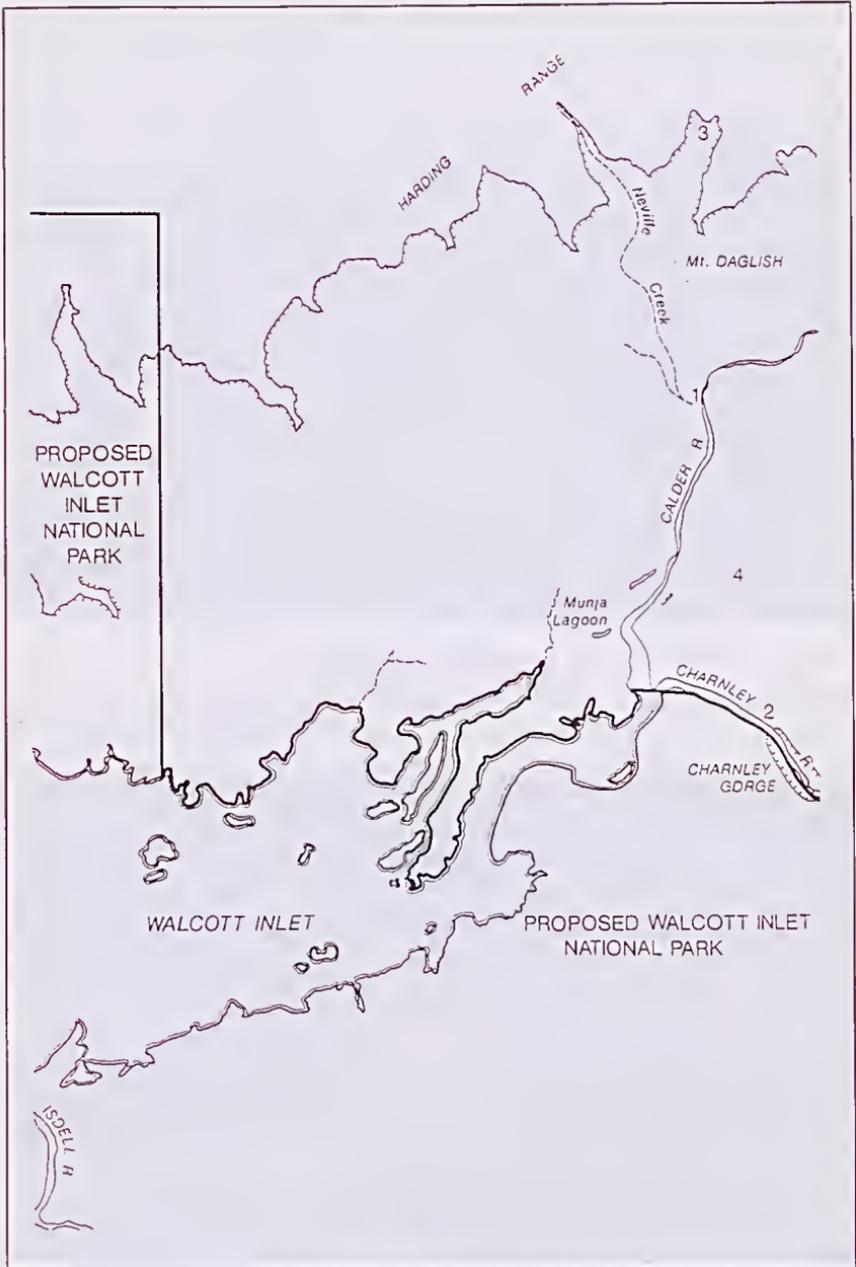
Walcott Inlet, 150 kilometres north-east of Derby, extends eastward from Collier Bay for about 30 kilometres and is up to 11 kilometres wide (Map 1).

The study area includes the eastern surrounds of Walcott Inlet and the Charnley and Calder Rivers. The majority of collecting sites for the expedition were concentrated between the campsite area at the junction of Neville Creek and the Calder River and the ruins of the old Munja mission, 6 km to the south (Fig.1). The remainder of the area is reported from limited observations and brief visits of one or two days during rainforest surveys.

HISTORY

Walcott Inlet is believed to have been named after Pemberton Walcott, by surveyor F.S. Brockman in July 1901 based on his knowledge that T.C. Sholl had given this name to a river in this vicinity (possibly the Calder River) in 1865. Walcott (1834-1883) was a collector of natural history and botanical specimens and inspector of pearl fisheries based at Broome.

The first major examination of the flora in the study area was made by W.V. Fitzgerald during Charles Crossland's 1905 trigonometrical survey. This



Map 1. Eastern end of Walcott Inlet. Numbers indicate fauna study sites.

survey examined the lower reaches of the Calder River and extended west to Mount Daglish and south to the Charnley and Isdell Rivers. Fitzgerald's account of the flora resulted from the first major botanical overland expedition to the Kimberley (Fitzgerald 1907, 1919). A number of *Acacia* specimens collected by Fitzgerald were described by J.H. Maiden (1917).

The first homestead in this vicinity was established in 1924 the lessees being F.S. & W. R. Easton. The government of Western Australia purchased these leases and along with the remaining Crown land extending to the ocean, established an Aboriginal Reserve (No. 19563) and cattle station at Munja in 1927. By the late 1940's the government became deeply embarrassed by reports of irregularities and exploitation at Munja. As a result it was decided to close down Munja as soon as possible. It was offered to the Presbyterian Church, whose mission work amongst the Aborigines was held in high respect. The formal 'take over' took place on 31 March 1949. A muster of the Munja stock accounted for 1400 head of cattle, 200 donkeys, 300 goats and 40 horses (McKenzie 1969). In 1951 the missions at Kunmunya and Munja were moved to Wotjulum on the mainland opposite Cockatoo Island. Reserve No. 19563 was cancelled in 1958.

A number of specimens were collected from the study area by Consett Davis in August 1943. This collector is discussed elsewhere (Kenneally - this publication).

The CSIRO Land Research Series report prepared from photo-interpretation and from field work in 1954 (Speck *et al.* 1960) represented a new phase of botanical exploration for the area. However their ground traverses did not cover the study area.

CURRENT STATUS

At present, the entire inlet is surrounded by vacant Crown land except at its eastern end, where Pantijan Station is leased by the Federal Government on behalf of the Aborigines of the Mowanjum community, and the land between the Isdell and Charnley Rivers (eastwards to 125° 00' latitude), which is a pastoral lease.

GEOMORPHOLOGY

Walcott Inlet is the broad, shallowly drowned valley of a river (ria) which, in a previous era, followed a structural joint between the Carson Volcanic and King Leopold Sandstone strata. Thus there are contrasting landforms on either side of the inlet.

To the north and north-east, there are undulating lowlands, with dendritic drainage off the gentle slopes of the isolated hills and ridges which is typical of volcanic country. These lowlands are overlooked by a sheer escarpment, the southern margin of a Warton Sandstone plateau stretching northward towards Doubtful Bay.

To the south of the Inlet are rugged, boulder-strewn valleys and ranges typical of King Leopold Sandstone.

Tidal mudflats, up to five kilometres wide, fringe the central and eastern parts of the inlet and are variably inundated by the tides, which have an average effective rise and fall of 11 metres (Fig.2). Around the landward edge of the mudflat there are extensive alluvial plains, including dark alluvial soils, occasional large fresh water lagoons and, where small streams flow out of the sandstone, small swampy areas of deep, sandy soil stained by organics.



Figure 1. Members of the ANZSES expedition at the ruins of the old Munja mission: Andrew Chapman, Bill Clough, Maggie Gibson, Phil Murray, David Fell and Warren Lloyd.



Figure 2. Boat stranded during the emptying of Walcott Inlet at extremely low tide.

Rocky slopes rise steeply from the mangroves and rocky shores at the mouth of Walcott Inlet, terminating in a plateau which in places is bordered by cliffs. Here, the Warton and Pentecost Sandstones overlie the Carson Volcanics and produce a similar topography to that of King Leopold Sandstone. King Leopold Sandstone also forms the Artesian Range between the Isdell and Charnley Rivers, east of Walcott Inlet. Dark grey Hart Dolerite intrudes all these rock types and produces a characteristic black band on many hillsides where scree slopes have been produced by weathering. The sandstones, in particular, yield an angular, blocky scree when weathered, providing excellent shelter for many small animals.

Watered by the Charnley, Calder, Isdell and Sale Rivers, these structurally controlled landscapes have a colourful and rugged grandeur (Fig.3). The Isdell River flows south-westerly from its headwaters then, deflected by the King Leopold Ranges, turns north-westerly to flow into Walcott Inlet. Spectacular gorges, found where the rivers cut through sandstone ridges, are particularly common on the northern margin of the area particularly along the Sale River.

VEGETATION AND FLORA

The plant communities on the dominant surface types have not been surveyed, though observations made during aerial reconnaissance indicate a rich flora. However detailed data are available from some localities.

Extensive tidal embayments and alluvial flats support dense stands of mangroves. Alluvial plains support extensive grasslands dominated by *Eucalyptus tectifica*, *Eucalyptus greeniana*, *E. confertiflora*, *Terminalia canescens*, *Gardenia megasperma*, *Erythrophleum chlorostachys* with the occasional boab (*Adansonia gregorii*) (Fig.4). The ground layer is dominated by spear grass (*Heteropogon contortus*) and plains wanderrie grass (*Eriachne festucacea*) (Fig.5).

Alluvial banks adjacent to rivers support *Eucalyptus clavigera*, *Glochidion sunatranum*, *Lysiphyllum cunninghamii*, white cedar (*Melia azederach*), *Omolanthus novo-guineensis*, *Terminalia bursarina* and *Brachychiton diversifolius* and the climbers *Luffa cylindrica*, *Merremia gemella* and *M. umbellata* (Fig.6).

Gallery forests extend along the banks of creeks and adjacent to the outcropping sandstone (Fig.7). These permanently damp areas support the tree species *Melaleuca leucadendra*, *Eucalyptus houseana*, *Terminalia ferdinandiana*, *T. platyphylla*, *Cordia dichotoma*, *Ficus coronulata*, *Nauclea orientalis*, *Syzygium eucalyptoides*, *S. nervosum*, *S. operculatum*, *S. suborbiculare*, *Thespesia thesperioides*, *Timonius timon* and *Carallia brachiata*. Dense groves of *Pandanus spiralis* occur with fern beds dominated by mangrove fern (*Acrostichum speciosum*), climbing swamp fern (*Stenochlaena palustris*), *Cyclosorus interruptus*, the rarely collected *Helminthostachys zeylanica* and the aquatic fern (*Ceratophyllum demersum*). (Figs 9 & 10). A large number of herbaceous species occur on the swampy fringes and include *Adenostemma lavenia*, *Bidens bipinnata*, *Blumea axillaris*, *Byblis liniflora*, *Canscora diffusa*, *Cressa cretica*, *Drosera indica*, *Limnophila fragrans*, *Marsilea*



Figure 3. Mouth of the Calder River at eastern end of Walcott Inlet, surrounded by sandstone cliffs.



Figure 4. A giant baobab (*Adansonia gregorii*) on alluvial plain near old Munja mission.

hirsuta, *M. mutica*, *Mitrasacme hispida* and *Vernonia cinerea*.

Patches of rainforest occur on the steep slopes below the sandstone escarpments, in narrow gorges, in hollows on the upper slopes of some hills and in swampy areas behind tidal mudflats often merging with gallery



Figure 5. Savanna woodland dominates the alluvial plains with Mount Daglish in the background.



Figure 6. Alluvial banks support groves of bauhinia (*Lysiphyllum cunninghamii*).

forests. Rainforest species include the trees *Aidia racemosa*, *Aglaia elaeagnoidea*, *Albizia lebbeck*, *Alstonia linearis*, *Alphitonia excelsa*, *Bombax ceiba*, *Canarium australianum*, *Celtis philippensis*, *Cryptocarya cunninghamii*, *Ficus virens*, *F. racemosa*, *Ganophyllum falcatum*, *Grewia breviflora*, *Gyrocarpus*



Figure 7. Edge of gallery forest fringing Calder River, dominated by *Eucalyptus houseana*.

americanus, *Ilex arnhemensis*, *Miliusa brahei*, *Mimusops elengi*, *Polyalthia australis*, *Polyaulax cylindrocarpa*, *Pouteria sericea* and *Wrightia pubescens*. The vines include *Abrus precatorius*, *Adenia heterophylla*, *Ampelocissus acetosa*, *Canavalia papuana*, *Capparis sepiaria*, *Flagellaria indica*, *Ichmocarpus frutescens*, *Pachygone ovata*, *Parsonsia velutina*, *Pisonia aculeata* and *Secamone timoriensis*. The epiphytic orchid *Dendrobium affine* occasionally occurs.

A low or open woodland covers the sandstone slopes and plateaus, interspersed in places with tall shrubland and hummock grassland (Fig.11). Typical trees include woollybutt (*Eucalyptus miniata*), grey box (*E. tectifica*), bloodwoods (*E. greeniana* and *E. polycarpa*), *E. brachyandra*, *Callitris intratropica*, *Terminalia hadleyana* and *T. volucris*, whitewood (*Atalaya hemiglauca*), quinine tree (*Petalostigma pubescens*), *Buchanania obovata*, bauhinia (*Lysiphyllum cunninghamii*), *Gardenia megasperma* and *Owenia vernicosa* (Figs 12 & 13). Shrubs include *Acacia* species (including the rarely collected *A. froggattii*) and *Calytrix exstipulata*. Common grasses include *Panicum mindanaense*, *Plectrachne pungens*, spear grass (*Heteropogon contortus*) and *Cymbopogon ambiguus*.

Rivers and creeks flowing through sandstone are fringed by stately cadjeputs (*Melaleuca leucadendra*) over thickets of screw palm (*Pandanus spiralis*).

Semi-permanent or permanent swamps or billabongs are found in the area, the largest example being Munja Lagoon. These wetlands are dominated by the blue waterlily (*Nymphaea violacea*) and are often fringed with dense beds of the sedge, *Eleocharis dulcis* (Fig.14). The grass *Pseudoraphis spinescens* is common as are the submerged aquatics *Blyxa aubertii* and *Najas tenuifolia*.



Figure 8. Buttressed roots of *Syzygium nervosum* in gallery forest.

ETHNOBOTANY

The survey team was accompanied by Wattie Ngerdu, an elder of the Worora tribe from Mowanjum who was responsible for liaison (Fig.15). During the expedition he worked with us providing a wealth of traditional knowledge of the area and its wildlife. Where possible Aboriginal names were provided for plants and these have been transcribed by the author and recorded in the annotated plant list.



Figure 9. Climbing Swamp Fern (*Stenochlaena palustris*), on trunk of *Syzygium angophoroides*.

CONSERVATION SIGNIFICANCE

The most significant aspects of the Walcott Inlet is that unlike other large inlets in the north Kimberley, it includes extensive alluvial, black soil plains supporting gallery forests, rainforest, savanna and permanent wetlands. Other inlets such as the St. George Basin, Prince Frederick Harbour and Port Warrender are fringed by rugged scree, escarpment and hill country that are fronted by mangroves.



Figure 10. *Helminthostachys zeylanica*, a rarely collected fern in the gallery forest.

Feral stock are present in limited numbers and the vegetation is in reasonably good condition. Fire ecology in the study area requires further investigation. The absence of permanent settlement reduces a significant source of ignition although some temporary camping takes place at Munja during stock mustering from nearby Pantijan Station.

A number of species of significance occur within the study area. These include *Borya subulata* (Anthericaceae), *Monochoria vaginalis*



Figure 11. Hummock grassland in sandstone dominated by *Grevillea refracta* and *Terminalia hadleyana*.

(Pontederiaceae), *Merremia gemella* (Convolvulaceae), *Kalanchoe crenata* (Crassulaceae), *Decaisnina biangulata* (Loranthaceae), *Acacia froggattii* (Mimosaceae), *Syzygium nervosum* (Myrtaceae) all of which appear restricted to the study area (Kenneally, 1983; Wheeler *et al.* 1992).

This survey is by no means comprehensive and communities and species need additional surveys, particularly during the wet season.

The area to the west of the study area has been proposed as a Class A reserve for the purpose of a National Park. It has been suggested that once the reserve is gazetted, the National Parks Authority explore with the occupants of Pantijan Station the possibility of joint participation in management of the Park. Munja Lagoon (within the study area) has been specifically mentioned as one of the few permanent fresh water swamps in the north Kimberley. It provides suitable habitat for north-west Kimberley populations of the Comb-crested Jacana and numerous other wetland birds through the dry season (Burbidge *et al.* 1991).

ACKNOWLEDGEMENTS

The authors are indebted to members of the 1983 Australian and New Zealand Scientific Exploration Society (ANZSES) Kimberley Expedition and to members of the 1987 & 1988 Kimberley Rainforest Study Teams for their assistance in the collection of specimens.



Figure 12. *Pouteria arnhemica* on sandstone.

The advice and companionship of the late Wattie Ngerdu in helping to understand the traditional Aboriginal significance of the area will always be deeply appreciated.

The assistance with identifications has been given by our colleagues at the Western Australian Herbarium and at interstate herbaria. The assistance of Herbarium technical staff in the processing of loans is gratefully appreciated.

Mr Ian Elliott, Geographic Names Subsection, Department of Land



Figure 13. Fissured, corky bark of *Pouteria arnhemica*.



Figure 14. Billabong below sandstone escarpment dominated by blue waterlilies (*Nymphaea violacea*) and chinese water chestnut (*Eleocharis dulcis*). Both plants have edible tubers.



Figure 15. Watti Ngerdu making a spear from *Acacia tumida*.

Administration kindly provided information on land tenure in the Walcott Inlet.

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AN ANNOTATED PLANT CHECKLIST OF WALCOTT INLET, NORTH KIMBERLEY WESTERN AUSTRALIA

ARRANGEMENT OF THE PLANT CHECKLIST

Genera and species are arranged alphabetically within the families which are themselves arranged alphabetically in each section. Introduced plants are indicated by an asterisk (*). Species are followed by the collector's initials, a collector's number or numbers to assist location of the voucher collections. A list of collectors is given at the end of the list. All specimens cited are represented by voucher specimens housed in the Western Australian Herbarium (PERTH), unless indicated by (SR) which denotes a sight record only.

PTERIDOPHYTA (Ferns and Fern Allies).

ADIANTACEAE

Ceratopteris thalictroides (L.) Brongn. CD s.n.; KFK 8755.

Fern in gallery forest, in black peat soil in inundated area of forest fringing an unnamed creek flowing from a sandstone gorge, Calder River.

Cheilanthes contigua Baker AVM 23.

Rhizomatous fern 0.2 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil at junction of Brockman and Calder Rivers.

Doryopteris concolor (Langsd. & Fisch.) Kuhn AVM 176.

Rhizomatous fern 20 cm, starting to dessicate. Occasional in mixed forest on boulder-strewn forest floor in a small opening of dense vine thicket, over basalt in red-brown loam at Neville Creek.

Paraceterach muelleri (Hook.) Copel JJA & GJK 1385; KFK 10455.

Small rhizomatous fern to 15 cm. Abundant on edge of cliffs in semi-deciduous vine thicket in valley. In red loam over Warton Sandstone, NW of Mt Darglish in Harding Range.

BLECHNACEAE

Stenochlaena palustris (Burm.f.) Bedd. JJA & GJK 1331; KFK 8738.

Climbing fern with *Acrostichum speciosum* in black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge of Calder River, and common in *Nauclea orientalis* forest-riverine flats of inundated black clay soil at mouth of Isdell River.

LYGODIACEAE

Lygodium microphyllum (Cav.) R.Br. JJA & GJK 1328; CD s.n.

Twining fern climbing on trees in gorge at water's edge in *Nauclea orientalis* forest, on riverine flat in black clay soil at mouth of Isdell River.

MARSILIACEAE

Marsilea hirsuta R.Br. CAG 1087

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Marsilea mutica Mett. DJE 9.

Aquatic fern. Abundant in gallery forest swamp on a pavement of King Leopold Sandstone in black peaty soil, Calder River.

OPHIOGLOSSACEAE

Helminthostachys zeylanica (L.) Hook. KFK 8734, 10473.

Rhizomatous fern with *Acrostichum speciosum*. Growing in black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River.

PLATYZOMATACEAE

Platyzoma microphyllum R.Br. WRE 1032.

Fern in swampy, sandy spots, Calder River.

PTERIDACEAE

Acrostichum speciosum Willd. JJA & GJK 1330; CD s.n.; KFK 8733, 8764.

Clumped fern forming dense thickets to 2 m. Growing in billabongs and inundated areas of closed gallery forest, fringing an unnamed creek flowing from a sandstone gorge of Calder River, and mouth of Isdell River.

THELYPTERIDACEAE

Cyclosorus interruptus (Willd.) H.Ito JJA & GJK 1329; KFK 8737.

Fern with *Acrostichum speciosum* in black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge of Calder River, and abundant in *Nauclea orientalis* forest-riverine flats in inundated black clay at mouth of Isdell River.

SPERMATOPHYTA

GYMNOSPERMAE

CUPRESSACEAE

Callitris intratropica (F.Muell.) R.Baker DF 23.

Small tree to 3 m. On dry open heath associated with scattered boabs, *Acacia* and *Eucalyptus* species, on sandstone in yellow sandy soil, Harding Range.

ANGIOSPERMAE

MONOCOTYLEDONAE

ALISMATACEAE

Caldesia oligococca (F.Muell.) Buchenau. KFK 8730.

Emergent aquatic, flowers white. On edge of billabong abutting King Leopold sandstone with *Adansonia gregorii* and *Terminalia canescens*, Calder River.

ANTHERICACEAE

Borya subulata C.Gardner KFK 10522.

Rhizomatous plant forming dense spreading sward in sand over sandstone pavement. S of Mt Daghish in Harding Range.

ARACEAE

Amorphophallus galbra Bailey AVM 177.

Woody herb 50 cm, seen once only. In red-brown loam in mixed forest, boulder-strewn in slight seepage area in deep shady gorge over basalt, Neville Creek.

ARECACEAE

Livistona loriphylla Becc. KFK (SR)

Palm to 7 m. On sandstone, Isdell River.

CENTROLEPIDACEAE

Centrolepis exserta (R.Br.) Roemer & Schultes CD s.n.

In sand on river bank, 3-4 miles from Charnley River mouth. Fl. Aug.

COMMELINACEAE

Commelina cyanea R. Br. DJE 7.

Prostrate creeper, flowers blue. Calder River. Fl. May

Commelina ensifolia R.Br. DJE 2, 18, 37, 43.

Prostrate scrambler, leaves narrow, flowers pale to bright blue. Frequent in moist patches in grassy woodland of alluvial floodplain and occasional on raised sandbank above river floodplain on edge of forest below rugged, boulder-strewn plateau of King Leopold Sandstone, Calder and Charnley Rivers. Fl. May.

Commelina reticulata Stanley DJE 5, 50.

Prostrate creeper, leaves very fine, flowers pale to bright blue. In moist to swampy loamy soil of alluvial floodplain over King Leopold Sandstone, Calder River. Fl. May.

CYPERACEAE

Cyperus aquatilis R.Br. CD s.n.

Sedge. Beside Charnley River, right bank 3-4 miles above mouth. Fl. Aug.

Cyperus difformis L. CD s.n.

Sedge. In damp soil by billabong at Munja and bank of Charnley River. Fl. Aug.

Cyperus haspan L. subsp. *haspan* WVF 1452.

Walcott Inlet.

Cyperus haspan L. subsp. *juncooides* (Lam.) Kuk. JJA & GJK 1335.

Spreading herbaceous sedge, inflorescence brown to pale green. Common in riverine forest in inundated black clay with *Nauclea orientalis*, mouth of Isdell River. Fl. June.

Cyperus javanicus Houtt. JJA & GJK 1325; KFK 10912.

Erect rough sedge to 70 cm, inflorescence pale brown. Abundant on inundated black clay, mouth of Isdell River. Fl. June.

Cyperus microcephalus R.Br. subsp. *microcephalus* KFK 11151

Sedge to 0.8 m, growing in cracks of massive sandstone, mouth of Isdell River. Fl. & Fr. May.

Cyperus tenuispica Steudel CD s.n.

Sedge, beside small permanent pool. Flats below Harding Ranges about 8 miles WNW Munja Station. Fl. Aug.

Cyperus vaginatus R.Br. CD s.n.

Sedge in wet sand, beside Charnley River, 3-4 miles above mouth. Fl. Aug

Cyperus viscidulus K.L.Wilson KFK 8706, 11146.

Caespitose sedge, inflorescence pale yellow. In alluvial soil, Neville Creek and mouth of Isdell River. Fl. & Fr. May.

Cyperus zollingeri Steudel DJE 30.

Sedge to 15 cm. Occasional in forest on raised sandbank above river floodplain and at edge of forest below rugged boulder-strewn plateau of King Leopold Sandstone in light brown sandy clay, Charnley River.

Eleocharis affin. *brassii* S.T.Blake KFK 8727.

Sedge, forming dense stand on edge of billabong which abuts King Leopold Sandstone with *Adansonia gregorii* and *Terminalia canescens*, Calder River.

Eleocharis dulcis (Burm.f.) Trin. ex Hensch. CD s.n.

Emergent aquatic in billabong at Munja and Isdell River.

Fimbristylis arthrostylodes W. Fitzg. JJA & GJK s.n.

Tall, slender sedge to 60 cm. In pockets of soil in rock face crevices in vine thicket, NW of Mt Dalglish in Harding Range. Fl & Fr. June.

Fimbristylis ferruginea (L.) Vahl. JJA & GJK 1336.

Erect sedge to 45 cm, inflorescence pale yellow. Common in riverine forest in black clay inundated with *Nauclea orientalis*, mouth of Isdell River. Fl. June.

Fimbristylis littoralis Gaud. CD s.n.

Sedge in wet river sand, on right bank 3-4 miles above mouth of Charnley River.

Fimbristylis microcarya F.Muell. CD s.n.; DJE 20.

Sedge 20-30 cm. Occasional in woodland, and by small creek, on bank near billabong over sandstone with reddish-brown sandy clay, Calder and Charnley Rivers.

Fimbristylis tetragona R.Br. CD s.n.

Sedge in limestone gorge, left bank of Isdell River, 12 miles from mouth.

Fimbristylis sp. L Kimb. Flora CD s.n.

Sedge in wet sand beside river, 3-4 miles above mouth of Charnley River.

Fuirena sp. CD s.n.

Sedge in wet sand, beside Charnley River. Fl. Aug.

Schoenoplectus praelongatus (Poiret) Raynal CD s.n.

Sedges in billabong at Munja Station, and in wet sand beside Charnley River on right bank 3-4 miles above mouth. Fl. & Fr. Aug.

Scleria brownii Kunth. KFK 11153

Caespitose sedge in fissures below massive sandstone, mouth of Isdell River. Fl. & Fr. May.

Scleria polycarpa Boeck. KFK 10779.

Caespitose sedge near and in swamp, 6 km E of Mt Talbot. Fl. & Fr. June.

DIOSCOREACEAE

Dioscorea bulbifera L. KFK (SR).

Climber, fruits narrowly winged. In vine thicket mouth of Isdell River. Fl. & Fr. Jan.

ERIOCAULACEAE

Eriocaulon cinereum R.Br. CD s.n.; DF 36.

Aquatic herb 10 cm, flower-heads white. Growing in small pool in scrub of rocky sandstone gorge of upper Neville Creek and in permanent spring in ranges between mouths of Charnley and Calder Rivers. Fl. May & Aug.

Eriocaulon sp. B. Kimb. Flora CD s.n.

Semi-aquatic herb in wet sand by river, above mouth of Charnley River. Fl. Aug.

FLAGELLARIACEAE

Flagellaria indica L. JJA & GJK 1332; CD s.n.; AVM 196.

Woody climber to 4 m, occasional ripe fruits present. In small patch of monsoon forest or vine thicket along seasonal stream feeding the Charnley River at base of 10 m high abrupt plateau of King Leopold Sandstone, also at Isdell River. Fr. May.

HYDROCHARITACEAE

Blyxa aubertii Rich. var. *aubertii* KFK 8735, 10448.

Submerged aquatic with *Acrostichum speciosum*, in black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge of Calder River.

LEMNACEAE

Lemna aequinoctialis Weber KFK 10450B & C, 10643.

Floating aquatic in pools in forest.

NAJADACEAE

Najas tenuifolia R.Br. KFK 8728.

Emergent aquatic, leaves red. In billabong which abuts King Leopold Sandstone with *Adansonia gregorii* and *Terminalia canescens* dominant, Calder River.

ORCHIDACEAE

Cymbidium canaliculatum R.Br. CAG 1527.

Epiphytic orchid, Isdell River. Fl. Sept.

Dendrobium affine (Decne) Steudel DF 43; KFK 10466; AVM 162.

Epiphytic orchid 4 m, in bud. Occasional in forest in basaltic rocky gorge with reddish-brown clayey sand; also in mixed forest of a shady, large boulder-strewn ephemeral watercourse below a sandstone scarp over basalt in brown skeletal soil, Neville Creek and Harding Range.

POACEAE

Arundinella nepalensis Trin. KFK 8704.

Caespitose grass, common in alluvial sand over sandstone, Calder River.

Bothriochloa bladhii (Retz.) S.T.Blake KFK 8700.

Caespitose grass, inflorescence straw-coloured. Forms dense closed stands in alluvial sand beside creek in sandstone, Neville Creek.

Brachyachne convergens (F.Muell.) Stapf KFK 8709.

Grass, in sand of alluvial floodplain over sandstone, Neville Creek.

Cenchrus elymoides F.Muell. AVM 24.

Grass to 1 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on a boulder scree slope over basalt with brown loam at mouth of Brockman River.

Coelorhachis rottboelloides (R.Br.) A.Camus KFK 8701.

Caespitose grass to 1.5 m. Common with couch and *Bothriochloa bladhii*. In sand on alluvial floodplain and in sandstone at Neville Creek mouth.

Cymbopogon ambiguus A.Camus AVM 75A.

Caespitose grass 50 cm. Frequent in woodland with *Adansonia gregorii* on King Leopold Sandstone in yellow sand, Charnley River.

Cymbopogon procerus (R.Br.) Domin AVM 34.

Caespitose grass 0.5-1 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on boulder scree slope over basalt in brown loamy soil, Brockman River mouth.

Cynodon dactylon (L.) Pers. KFK 8699.

Couch grass, creeping and rooting at nodes, common in sand of alluvial floodplain beside creek, over sandstone, Neville Creek.

Digitaria bicornis (Lam.) Roemer & Schultes GJK 10653; AVM 197.

Grass forming diffuse tufts to 1 m. In sunny openings under *Adansonia gregorii* and other species in forest on sandy levee bank of river, near edge of a patch of monsoon forest and vine thicket, Charnley River and mouth of Isdell River. Fl & Fr. March.

**Digitaria ciliaris* (Retz.) Koeler DJE 28; KFK 8707.

Rhizomatous grass 20 cm. Occasional in grassland on raised sandbank above river floodplain and below a rugged boulder-strewn plateau of King Leopold Sandstone in brownish sand at Charnley River and Neville Creek.

**Echinochloa colona* (L.) Link GJK 10716; KFK 8763.

Grass in black mud at edge of gallery forest by Calder River and mouth of Isdell River. Fl. & Fr. March.

Elytrophorus spicatus (Willd.) A.Camus CD s.n.

Grass in wet sand on right bank of Charnley River, 3-4 miles above mouth.

Eragrostis cumingii Steudel CD s.n.; DJE 19.

Grass 1 m. Occasional in woodland on bank of creek upstream of river over sandstone in reddish-brown sandy clay, Neville Creek and in wet sand beside Charnley River.

Eragrostis tenellula (Kunth) Steudel CD s.n.; KFK 8708.

Grass, in sand of alluvial floodplain near Neville Creek on underlying sandstone and in wet sand, Charnley River.

Eriachne festucacea F.Muell. KFK 8718A.

Grass on damp seepage area of bank of Calder River near junction with Neville Creek.

Heteropogon contortus (L.) P. Beauv. ex Roemer & Schultes KFK (SR).

Common grass in area.

Imperata cylindrica (L.) P.Beauv. var. *major* (Nees) C.E.Hubb. WVF 1447; AVM 75.

Grass 0.5-1 m. Occasional in grassland with other mixed tall grasses on river bank in brown sandy clay, Charnley River and near mouth Calder River.

Ischaemum australe R.Br. var. *australe* KFK 8717.

Caespitose grass forming dense clump beside creek joining Calder River. On alluvial floodplain over sandstone in sandy soil, Neville Creek.

Iseilema fragile S.T.Blake KFK 8725.

Grass, in seepage areas of floodplain over sandstone between the Calder River and Mt Daghish in the Harding Range.

Panicum mindanaense Merr. AVM 10.

Caespitose grass 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on boulder scree slope over basalt in brown loamy soil, Brockman River mouth.

Panicum trachyrhachis Benth. KFK 8729.

Dominant grass on floodplain adjacent to billabong in dense, high, closed grassland to 2 m. Occurs with scattered *Eucalyptus houseana* and other grasses such as *Rottboellia* and *Pennisetum*. Billabong abuts King Leopold Sandstone with *Adansonia* and *Terminalia*, Calder River.

Panicum trichoides Sw. JJA & GJK 1343, 1390; GJK 10691.

Creeping grass to 10 cm. Abundant on edge of semi-deciduous vine thicket. In valley in red loam and sand over Wharton Sandstone, NW of Mt Daghish, Harding Range, and mouth of Isdell River. Fl. & Fr. March.

Paspalum scrobiculatum L. GJK 10622

Erect annual grass to 60 cm. In tall *Nauclea orientalis* riverine vine forest in wet peaty black loam, mouth of Isdell River. Fl. & Fr. March.

Perotis rara R.Br. DJE 27.

Grass 25 cm. Occasional in grassland on raised sandbank above river floodplain and below a rugged boulder-strewn plateau over King Leopold Sandstone in brown sand, Charnley River.

Pseudoraphis spinescens (R.Br.) Vick. KFK 8732.

Grass, inflorescence emergent. In billabong on east bank of Calder River, on floodplain in dense, high, closed grassland to 2 m. Billabong abuts King Leopold Sandstone with *Adansonia* and *Terminalia*, Calder River.

Setaria apiculata (Scribn. & Merk.) K. Schum. GJK 10654.

Annual grass to 30 cm, flower spike green and purple. Uncommon in riverine vine forest at edge of creek in black peaty clay, mouth of Isdell River. Fl. & Fr. March.

Urochloa pubigera (Roemer & Schultes) R. Webster DJE 26; GJK 10623.

Rhizomatous grass 30 cm, occasional in grassland on raised sandbank above river floodplain and below rugged boulder-strewn plateau over King Leopold Sandstone, in pale brown sand, Charnley River and common in riverine forest, mouth of Isdell River. Fl. & Fr. March-May.

PONTEDERIACEAE

Monochoria cyanea (F. Muell.) F. Muell. KFK 10907.

Emergent aquatic in gallery forest at mouth of Isdell River.

Monochoria vaginalis (Burm.f.) Presl DJE 8; KFK 8736.

Emergent aquatic, flowers blue. With *Acrostichum speciosum* in black peat swamp under gallery forest, Calder River. Fl. May.

SMILACACEAE

Smilax australis R.Br. AVM s.n.; KFK 8745.

Creeper, flowers white. Growing in black peat in inundated area of forest fringing an unnamed creek flowing from a sandstone gorge by Calder River, also at Charnley River. Fl. May.

TACCACEAE

Tacca leontopetaloides (L.) Kuntze KFK (SR).

Bulbous perennial, leaf segments broad. In vine thicket at mouth of Isdell River.

XYRIDACEAE

Xyris complanata R.Br. CAG 907, 1407.

Herb, flowers yellow. At source of Calder River.

Xyris oligantha Steudel CD s.n.

Small herb to 13 cm, flowers orange-yellow. By permanent spring in wet soil in Ranges at 170 m, and between mouths of Charnley and Calder Rivers. Fl. Aug.

DICOTYLEDONAE

ACANTHACEAE

Dicliptera armata F.Muell. AVM 28.

Prostrate woody herb 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope in brown loam, Brockman River mouth.

Hypoestes floribunda R.Br. AVM 220.

Shrub to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above level of river, in pale, sandy, skeletal soil, Charnley River.

AMARANTHACEAE

Achyranthes aspera L. JJA & GJK 1334; AVM 175.

Woody herb. Occasional among sandstone boulders in mixed forest in shady ephemeral watercourse below a sandstone scarp over underlying basalt in brown skeletal soil, Neville Creek and mouth of Isdell River. Fr. June.

Alternanthera sp. DJE 22.

Prostrate herb. Occasional in woodland in clayey red-brown soil over sandstone, Calder River.

Amaranthus pallidiflorus F.Muell. JJA & GJK 1396; KFK 10910.

Spreading herb to 15 cm, flowers pale green. Uncommon in savannah woodland in reddish-brown loamy soil near Mt Daghish vine thicket and on edge of gallery forest, mouth of Isdell River. Fl. June.

Deeringia amaranthoides (Lam.) Merr. JJA s.n.

Climber in vine thicket of Harding Range.

Gomphrena diffusa (R.Br.) Spreng. AVM s.n.

Small herb, flowers cream. On sandstone by Charnley River. Fl. May.

Gomphrena flaccida R.Br. DJE 14.

Woody herb to 50 cm, flowers pink. Frequent on edge of King Leopold Sandstone exposure among grasses fringing gallery forest, Calder River. Fl. May.

Gomphrena leptoclada Benth. AVM 6.

Prostrate woody herb 0.6 m, flowers dark pink and white. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope in brown loam soil, junction of Brockman and Calder Rivers. Fl. May.

ANACARDIACEAE

Buchanania obovata Engl. KFK 8757.

Tree to 4 m, flowers white. In massive King Leopold Sandstone, abutting floodplain with *Adansonia gregorii*, *Xanthostemon paradoxus*, *Terminalia* spp. and *Brachychiton* sp., Calder River. Fl. May.

**Mangifera indica* L. KFK 8747, 10476.

Tree to 6 m, leaves dark green. In black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River. A probable escape from nearby abandoned Munja Settlement.

ANNONACEAE

Miliusa brahei (F.Muell.) Jessup DF 17; KFK 8748; AVM 96.

Small tree to 5 m, leaves discolorous, upper leaves dark shiny green, lower leaves light green. Growing in black peaty soil in gallery forest on alluvial plain on edge of King Leopold Sandstone, with *Ficus*, *Flagellaria*, *Syzygium*, *Adansonia gregorii* and other mixed species, Calder and Charnley Rivers.

Polyalthia australis (Benth.) Jessup KFK 8781; AVM 192.

Tree to 8 m in full flower, flowers pale yellow, fragrant; bark smooth. In black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge by the Calder River, and occasionally in mixed forest near boulder strewn watercourse at foot of sandstone scarp over basalt rock in red-brown skeletal soil, Neville Creek. Fl. May.

Polyaulax cylindrocarpa (Burk.) Backer AVM 128.

Small tree, fruits ripe, fleshy, edible-looking, orange. Frequent in mixed forest in a shady ephemeral watercourse strewn with large boulders, and below a sandstone scarp over underlying basalt rock on brown skeletal soil of narrow gorge, Neville Creek. Fr. May.

APIACEAE

Trachymene didiscoides (F.Muell.) B.L.Burt AVM 208.

Woody herb to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above river level in pale sandy skeletal soil, Charnley River.

Trachymene microcephala (Domin) B.L. Burt JJA 555.

Woody herb to 60 cm, flower yellow. In *Eucalyptus* - *Terminalia* savanna woodland near Mt Daghish vine thicket. Fl. June.

APOCYNACEAE

Alstonia linearis Benth. JJA s.n.

Tree in vine thicket, Mt Daghish in Harding Range.

Ichnocarpus frutescens (L.) R.Br. JJA s.n.

Climber in vine thicket, Mt Daghish.

Parsonsia velutina R.Br. JJA s.n.; KFK 10913; AVM 147.

Climbing woody vine to 3 m, fruit green. Occasional in woodland with *Lophostemon* on rocky bank of perennial creek over basalt in brown clayey sand, Neville Creek and gallery forest at mouth of Isdell River and vine thicket at Mt Daghish. Fr. May.

Tabernaemontana pandacaqui Lam. JJA & GJK 1388; CD s.n.; KFK 8716; AVM 120.

Open shrub or tree 3 to 5 m, flowers white; leaves glabrous or pubescent, fruits bright orange. In riverine forest by creek in foothills of Harding Range. Common in alluvial sand and found frequently in mixed forest in a shady ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt rock in brown skeletal soil, Neville Creek and Mt Daghish. Previously known as *Tabernaemontana orientalis* R. Br. Fl. & Fr. May-June.

Wrightia pubescens R.Br. JJA s.n.

Tree to 10 m with milky exudate, in vine thicket, Mt Daghish.

AQUIFOLIACEAE

Ilex arnhemensis (F.Muell.) Loes. subsp. *arnhemensis* BH 25518 RFK.

Tree to 10 m, blaze turns purple immediately in cambial layer. Mouth of Isdell River.

ASCLEPIADACEAE

Gymnanthera nitida R.Br. JJA & GJK 1345.

Climbing twiner abundant in riverine forest in black soil, mouth of Isdell River.

Sarcostemma viminale (L.) R.Br. subsp. *brunonianum* (Wight & Arn.) P. Forster AVM 158.

Climbing woody, succulent herb 2-4 m. Occasional in mixed forest in shady, ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt, in brown skeletal soil of narrow gorge, Neville Creek.

Secamone timoriensis Decaisne JJA & GJK 1378.

Climber common in deciduous vine thicket, Mt Daglish.

Tylophora flexuosa R.Br. JJA s.n.; KFK 10469.

Twiner, leaves glossy green above, pale greyish green below, Mt Daglish and near Mt Talbot.

ASTERACEAE

Adenostemma lavenia (L.) Kuntze GJK 10625; KFK 8739, 10456.

Herb, flowers white. Growing in flowing water of small creek with *Acrostichum speciosum*, in black peat in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge into Calder River, and mouth of Isdell River. Fl. March-June.

Bidens bipinnata L. GJK 10657.

Slender erect herb to 1.5 m, flowers yellow. Abundant in riverine vine forest on river flats in black peaty loam at mouth of Isdell River. Fl. March.

Blumea axillaris (Lam.) DC. CD s.n.; KFK 10472.

Erect aromatic herb to 80 cm, leaves greyish green, flowers mauve. Beside small permanent pool on flats below Harding Range, and in black mud in open area of swamp in gallery forest by Calder River. Fl. June, Aug.

Blumea lacera (Burm.f.) DC. WVF 1385.

Herb, on flats below Harding Range near Munja. Fl. Aug.

Chrysogonum eclipoides (F.Muell.) F.Muell. DD 6; DJE 42.

Straggly shrub to 70 cm, flowers small, bright yellow. On steep, north-facing sandstone slope and occasionally in woodland atop a rugged, boulder-strewn sandstone plateau, in light brown sandy soil, at junction of Charnley and Calder Rivers. Fl. May.

Pterocaulon sphacelatum (Labill.) F.Muell. DF 3; CAG 1085; AVM 51.

Woody herb to 2 m, stem brown, leaves light green, very hairy and aromatic, flowers in terminal heads. Abundant in grassland of the alluvial floodplain and occasionally in woodland with *Adansonia gregorii* and other mixed species. Soil brownish-black sandy clay at junction of Brockman and Calder Rivers and at Munja. Fl. May - Sept.

Streptoglossa odora (F.Muell.) Dunlop CD s.n.

Aromatic herb, beside small permanent pool on flats below Harding Range, near Munja. Fl. Aug.

Vernonia cinerea (L.) Less. WVF 1456; AVM 19.

Woody herb 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil at junction of Brockman and Calder Rivers and Mt Daglish. Fl. May, Aug.

AVICENNIACEAE

Avicennia marina (Forsskal) Vierh. KFK (SR).

Mangrove on narrow levee banks abutting steep sandstone cliffs at mouth of Charnley River.

BOMBACACEAE

Adansonia gregorii F.Muell. BH 25530 RFK; KFK(S.R.); JRBL s.n.

Tree to 8 m, deciduous at time of survey, some fruits remaining. Growing in alluvial soil of levee flats, Munja, and mouth of Isdell River. Fl. Dec.

Bombax ceiba L. KFK 8777; AVM s.n.

Tree to 12 m, almost deciduous at time of survey, bark silver-grey with thorns. Growing in black peat on edge of gallery forest fringing an unnamed creek flowing from a sandstone gorge. Calder and Charnley Rivers.

BORAGINACEAE

Cordia dichotoma G.Forster DF 12.

Tree to 8 m. Occasional in gallery forest with *Ficus* sp. and *Flagellaria* bordered by *Melaleuca leucadendra*, *Pandanus spiralis* and *Eucalyptus houseana*, in a deposition zone fed by a spring, surface run-off and sub-surface flow at the junction of a sandstone (King Leopold) outcrop and alluvial plain in black peaty sand, Calder River.

Cordia myxa L. BH 25145 RFK; KFK 10477.

Tree to 10 m, bark tessellated, flaky, blaze cream, fibrous layered, rapidly darkening to olive, inner blaze cream, also darkening rapidly, sub-rhytidome cream. In gallery forest south of Mt Dalglish by Calder River.

BURSERACEAE

Canarium australianum F.Muell. DF 28A; BH 25533 RFK.

Tree 5 m. Abundant in forest and scrub at the head of a craggy gorge of sandstone with *Ficus* and *Brachychiton*, Harding Range, and mouth of Isdell River.

Garuga floribunda Decne AVM s.n.

Tree, in forest above river camp, Charnley River.

BYBLIDACEAE

Byblis liniflora Salisb. DD 7.

Small herb 15 cm, flowers very delicate, lilac. Occasional on rock face in well-watered grey soil, over sandstone, Charnley River. Fl. May.

CAESALPINIACEAE

Erythrophleum chlorostachys (F.Muell.) Baillon AVM 42.

Tree 3-4 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope in brown loam at junction of Brockman and Calder Rivers. Woorora name = *angurun*.

Lysiphyllum cunninghamii (Benth.) de Wit AVM 79, 185.

Tree to 5 m, sterile, no pods. Frequent in forest with *Adansonia gregorii* on raised sandbank above river bank and below rugged sandstone boulder-strewn plateau, in brown sand in gorge of Neville Creek and Charnley River.

Senna goniodes (Cunn. ex Benth.) Randell CD s.n.

Shrub to 1 m, flowers yellow. Tributary of left bank of Isdell River, 10 miles from mouth. Fl. Aug.

Senna notabilis (F.Muell.) Randell JJA & GJK 1384.

Shrub to 1 m, leaves compound, furry, spiked at tip, flowers bright golden yellow. Common in savannah woodland with emergent *Eucalyptus miniata* and *Terminalia*. Near sandstone cliffs in red loamy sand near Mt Daghish. Fl. June.

Senna timoriensis (DC.) Irwin & Barneby AVM 65.

Shrub to 2 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on riverbank in brown sand at edge of rugged sandstone boulder plateau, near junction of Charnley and Calder Rivers.

CAPPARACEAE

Capparis jacobsii Hewson JJA & GJK s.n.

Shrub, in vine thicket, Mt Daghish.

Cleome viscosa L. KFK (SR).

Open much-branched sub-shrub, flowers yellow. At mouth of Isdell River. Fl. Jan.

CARYOPHYLLACEAE

Polycarpha involucrata F.Muell. KFK 8753.

Herb, flowers white. In crevices of massive King Leopold Sandstone, abutting alluvial floodplain with *Adansonia gregorii*, *Xanthostemon paradoxus*, *Terminalia* sp., *Brachychiton* sp., Calder River. Fl. May.

Polycarpha longiflora F.Muell. DJE 15, 39.

Woody herb 40 cm, flowers deep red-maroon. Frequent on edge of King Leopold Sandstone slab adjacent to gallery forest in brown clayey sand. Also occurs frequently in woodland on top of rugged boulder-strewn plateau in pale sandy skeletal soil at junction of Charnley and Calder Rivers. Fl. May.

CELASTRACEAE

Cassine melanocarpa (F.Muell.) Kuntze DF 38.

Small tree 5 m. Frequent in forest of rocky gorge over basalt in reddish-brown sandy clay, Harding Range.

Denhamia obscura vel. affin. (A.Rich.) Meissner KFK 10452.

Shrub to 1 m. In vine thicket of Harding Range.

CERATOPHYLLACEAE

Ceratophyllum demersum L. KFK 8768.

Submerged aquatic. In pool on edge of gallery forest with *Marsilea*, in black peat in inundated area of forest fringing an unnamed creek flowing from a sandstone gorge, Calder River.

CHENOPODIACEAE

Suaeda arbusculoides L.S.Smith WVF 1458.

Near mouth of Calder River.

CHOCHLOSPERMACEAE

Cochlospermum fraseri Planchon subsp. *heteronemum* (F.Muell.) Poppendieck KFK (SR).

Small tree to 4 m, flowers bright yellow, fruits green, globular. In sand over sandstone. Woorora name = *galwa* for above ground parts and *yella* for below ground parts.

COMBRETACEAE

Terminalia bursarina F.Muell. DJE 3.

Large tree to 8 m, flowers in spike, small cream. Frequent in woodlands of alluvial floodplain on underlying sandstone in red-brown clayey sand, Calder River. Fl. May.

Terminalia canescens (DC.) Radlk. KFK (SR)

Shrub or small tree to 6 m; mature fruit a nut with a distinct wing. In savannah on alluvial plain. Woorora name = *murambee*.

Terminalia ferdinandiana Exell. KFK 8782, 8751.

Tree to 10 m, bark silver-grey, peeling in irregular chunks. On edge of gallery forest, in black peat in inundated area fringing an unnamed creek flowing from a sandstone gorge, Calder River.

Terminalia fitzgeraldii C.Gardn. CAG 1584.

Tree or shrub to 8 m, fruit glabrous, ovoid, usually with a prominent thick beak. In seasonally inundated claypans, Calder River. Fr. Sept.

Terminalia hadleyana W.Fitzg. subsp. *hadleyana* KFK 8724; AVM 206.

Fairly common tree to 5 m, fruits pale yellowish to green and stiffly fleshy with a tough rind. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above river level, in pale skeletal sand, Calder River and Mt Daghish. Fr. May.

Terminalia platyphylla F.Muell. KFK 8697.

Tree to 8 m, bark grey-black, slightly fissured, fruits green, with long beak. Host for hemiparasitic *Dendrophthoe acacioides*. Common in sand of alluvial floodplain, Calder River. Fr. May.

Terminalia volucris R.Br. ex Benth. AVM 113.

Small tree, frequent in mixed forest. In shady, large boulder-strewn ephemeral watercourse below sandstone scarp over basalt, in brown skeletal soil of narrow gorge, Neville Creek.

CONVOLVULACEAE

Bonamia pannosa (R.Br.) H. Hallier DJE 34, 44.

Woody herb about 30 cm, flowers purple-mauve. Occasional on edge of forest above river floodplain and below a rugged boulder-strewn plateau of King Leopold Sandstone, in pale sandy skeletal soil, Calder and Charnley Rivers. Fl. May.

Cressa cretica L. CD s.n.

Small prostrate herb, flowers white. By billabongs in drying mud, Munja. Fl. Aug.

Ipomoea aquatica Forsk. KFK 8773.

Creeper, flowers pale mauve with deep mauve centre. On edge of a closed forest growing in black peat in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River. Fl. May.

Ipomoea eriocarpa R.Br. DJE 35, 46.

Climber, flowers pinky-mauve. Occasional in forest above river floodplain and below a rugged boulder-strewn plateau of King Leopold Sandstone in pale sandy soil, and on wet muddy river bank, Calder and Charnley Rivers. Fl. May.

Jacquemontia paniculata (Burm.f.) H.Hallier AVM 70, 221.

Climbing woody vine to 2 m, flowers with a pale mauve corolla. In open woodland with *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above river level, in pale, sandy, skeletal soil, Charnley River. Fl. May.

Merremia gemella (Burm.f.) H.Hallier WVF 1445.

Trailing creeper, flowers sulphur yellow. Mouth of Calder River. Fl. Aug.

Merremia umbellata (L.) H.Hallier subsp. *orientalis* (H.Hallier) Ooststr. KFK 10475.

Twiner to 10 m with copious white exudate, flowers white. In gallery forest S of Mt Dalglish by Calder River. Fl. June.

Operculina brownii Ooststr. AVM 179.

Climbing woody herb, fruits deep red oozing nectar-like clear fluid, dries to dehiscent capsule. Occasional in mixed forest patch in valley at base of sandstone scarp, gorge of Neville Creek. Fr. May.

CRASSULACEAE

Kalanchoe crenata (Andrews) Haw. JJA & GJK 1395; AVM 167.

Woody herb 0.4 m, weakly but distinctly succulent. Occasional in mixed forest in shady, ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt in brown skeletal soil, gorge of Neville Creek and Mt Dalglish vine thicket. Fl. June.

CUCURBITACEAE

**Citrullus lanatus* (Thunb.) Matsumura & Nakai DJE 24.

Prostrate scrambler, leaves deeply lobed, flowers yellow. Occasional on river bank strewn with sandstone boulders in reddish-brown sandy clay, Calder River. Fl. May.

Cucumis melo L. subsp. *agrestis* (Naudin) Grebensch. AVM 18.

Climbing woody herb 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope with brown loam soil, at junction of Brockman and Calder Rivers.

Luffa cylindrica (L.) M.Roemer KFK 8767.

Trailing scrambler, flowers large, yellow. In black peat at edge of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River. Fl. May.

Luffa graveolens Roxb. DJE 23.

Prostrate scrambler, flowers yellow, melons small with papillae. Occasional in woodland by river bank over sandstone in reddish-brown clayey sand, Calder River. Fl. and Fr. May.

Trichosanthes cucumerina L. KFK 8719.

Creeper, flowers white, corolla lobes fringed, fruits green ripening to orange. Growing over massive sandstone rocks in gorge of Chamley River. Fl. and Fr. May.

DILLENIACEAE

Hibbertia oblongata R.Br. ex DC. AVM 215.

Shrub to 2 m. Occasional in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above river level in pale, skeletal sand, Charnley River.

DROSERACEAE

Drosera indica L. DD 11.

Herb, flowers bell-shaped, reddish-pink. On rock face in well-watered grey clay over sandstone, in gorge of Charnley River. Fl. May.

Drosera petiolaris R.Br. ex DC. WVF 1441.

Calder River. Fl. Aug.

EBENACEAE

Diospyros ferrea (Willd.) Bakh. var. *humilis* (R.Br.) Bakh. JJA & GJK s.n.; DF 31; KFK 8774.

Tree to 8 m, bark dark grey-brown, smooth, shedding in irregular patches, branchlets grey with numerous raised lenticels. In black peat on edge of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River, occasionally in scrub with *Ficus*, *Strychnos*, *Brachychiton* and *Canarium* in a rocky gorge over sandstone in sandy soil of upper Neville Creek and in Mt. Daglish vine thicket.

Diospyros maritima Blume JJA & GJK 1349; DF 40; AVM 174.

Tree to 7 m, fruits pale green, turning a pale yellow when ripe. Common in mixed forest in shady ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt in brown skeletal soil of Harding Range, Neville Creek and mouth of Isdell River. Fr. May.

EUPHORBIACEAE

Antidesma ghaesembilla Gaertner WRE 745; DF 19; BH 25527 RFK; KFK 8754, 8780.

Tree to 7 m, bark grey-brown, slightly papery and flaky, fruits purple. With *Eucalyptus houseana* and *Ficus* on edge of gallery forest fringing an unnamed creek flowing from a sandstone gorge of Calder River, and mouth of Isdell River. Fr. May.

Bridelia tomentosa Blume AVM s.n.

On sandstone above Charnley River.

Croton tomentellus F.Muell. AVM s.n.; DF 32.

Small tree to 3 m, bark grey with white blotches and vertical white cracks, and numerous lenticels horizontally arranged on branches. Occasional in scrub with *Ficus*, *Brachychiton*, *Strychnos*, *Tabernaemontana* and *Canarium* in a rocky gorge beside running water over sandstone in sand, upper Neville Creek and Charnley River.

Euphorbia atoto G.Forster AVM 207.

Shrub to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above river level in pale, skeletal sand, Charnley River.

**Euphorbia hirta* L. JJA & GJK 1333; KFK 8713.

Spreading herb, upper leaves with purple blotches, lower leaves light green. In alluvial sand, Calder River and at mouth of Isdell River. Fl. June.

Euphorbia tannensis Sprengel AVM 199.

Shrub to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex in rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above river level in pale, skeletal sand, Charnley River.

Excoecaria agallocha L. KFK (SR).

Mangrove on narrow levee banks abutting steep sandstone cliffs at mouth of Charnley River.

Flueggea virosa (Roxb. ex Willd.) Voigt subsp. *melanthesoides* (F.Muell.) Webster CD s.n.; AVM 27, 83.

Shrub to 2 m, mature fruit white. Occasional in forest with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope with brown loam soil, on raised sandbank above river bank and below rugged sandstone boulder-strewn plateau, Charnley River, foothills of Harding Range and junction of Brockman and Calder Rivers. Fr. May.

Glochidion sumatranum Miq. DF 22; BH 25144 RFK; KFK 8765, 8771, 10478.

Tree to 20 m, roots slightly buttressed, bark grey-black and stringy with fibrous blaze, peeling in large flakes, the ends curling up, leaves dark glossy green above, paler beneath, ripe fruits pale yellow-green. One of the main canopy trees on edge of gallery forest fringing creek flowing from King Leopold Sandstone gorge, in black peaty soil, with *Ficus*, *Syzygium* and *Flagellaria*, Calder River. Fr. May.

Mallotus nesophilus Muell.Arg. BH 25528 RFK; AVM 71, 81.

Tree to 6 m. In forest of *Adansonia gregorii* and other species on sandy levee bank of river at edge of small patch of monsoon forest and vine thicket at base of abrupt 10 m high plateau of King Leopold Sandstone. Ripe orange fruits eaten by Great Bower Bird (*Ptilonorhynchus nuchalis*). Charnley River, and mouth of Isdell River. Fr. May.

Omalanthus novo-guineensis (Warb.) Lauterb. & Schumann JJA & GJK 1337; AVM s.n.

Erect leafy shrubs or small trees to 4 m, flowers creamy green on long spike. In forest near Charnley River and at mouth of Isdell River. Fl. June.

Phyllanthus maderaspatensis L. KFK 8712; AVM 202.

Sub-shrub 1-2 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold

Sandstone 10 m above river level in pale, skeletal sand, Charnley and Calder Rivers.

Phyllanthus reticulatus Poirlet BH 13560, 21211 V; KFK 10461, 10468.

Vine to 10 m. Mouth of Isdell River.

Phyllanthus trachygyne Benth. AVM 3.

Woody herb 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope with brown loam soil, junction of Brockman and Calder Rivers.

GENTIANACEAE

Canscora diffusa (Vahl) R.Br. ex Roemer & Schultes JJA & GJK 1389.

Fine herbs to 20 cm, leaves fine and opposite, flowers pink. Common in loam pockets in sandstone rubble of creek-bed in valley by Mt Daghish. Fl. June.

GOODENIACEAE

Goodenia sepalosa F.Muell. ex Benth. var. *glandulosa* Carolin CAG 1586.

In seed. Fr. Sept.

GYROCARPACEAE

Gyrocarpus americanus Jacq. DF 35; AVM 165.

Tree to 4 m, bark greeny-grey, fleshy, leaves light green, bunched at ends of branchlets. In forest in shady, ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt, in brown skeletal soil, with *Ficus*, *Strychnos*, and *Canarium*, gorge of Neville Creek and mouth of Isdell River.

LAMIACEAE

Anisomeles malabaricum (L.) R.Br. ex Sims DJE 40; AVM 205.

Woody shrub to 1 m, flowers, tiny, mauve. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above river level, in pale, skeletal sand, Charnley River. Fl. May.

Solenostemon scutellarioides (L.) Codd DD 8.

A highly aromatic herb of 60 cm with mauve-blue flowers, on rock face in well-watered grey soil. Charnley River gorge. Fl. May.

LAURACEAE

Cassytha filiformis L. WVF 1453.

Mouth of Calder River.

Cryptocarya cunninghamii Meissner BH 13258.

Tree to 15 m. In vine thicket of Harding Range. Fr. June.

LECYTHIDACEAE

Planchonia careya (F.Muell.) R.Knuth DF 1, 34.

Tree to 6 m, grey-black bark, deeply fissured, 2 cm thick, with vertical cracks, inner bark deep red, sapwood white. In scrub with *Ficus opposita*, *Strychnos* and scattered boabs, on flat open grassland on alluvial plain which is sandstone-basalt derived in brown sandy clay, upper Neville Creek and Munja.

LOGANIACEAE

Mitrasacme galbina Dunlop (in edit) CD s.n.

Herb. Surrounding permanent spring between mouths of Charnley and Calder Rivers. Fl. Aug.

Mitrasacme hispida W. Fitzg. DJE 10.

Woody herb to 0.5 m, flowers, small, white. Occasional in gallery forest at edge of inundated area, below King Leopold Sandstone slab in black peaty soil, Calder River. Fl. May.

Strychnos lucida R.Br. AVM 1; DF 30.

Shrub to 2 m, ripe fruits orange but most fruits still green. Occasional in scrub or woodland with *Adansonia gregorii*, *Ficus*, *Canarium* and *Brachychiton*, in a rocky gorge over sandstone in sand and on basalt boulder scree slope with brown loam soil, upper Neville Creek and junction of Brockman and Calder Rivers. Fr. May.

LORANTHACEAE

Amyema villiflorum (Domin) Barlow AVM 76.

Hemiparasite on *Lysiphyllum cunninghamii*. Occasional in forest with *Adansonia gregorii*, on raised sandbank above riverbank and below rugged boulder-strewn sandstone plateau, Charnley River.

Decaisnina biangulata (W.Fitzg.) Barlow KFK 8695.

Pendulous hemi-parasite, stems angular, flowers tube orange-red for half distance from base, becoming green then tipped maroon-black, recurved perianth segments green occasionally with reddish tinge where they reflex. On *Syzygium eucalyptoides* at edge of Calder River on alluvial floodplain. Fl. May.

Dendrophthoe acacioides (Benth.) Tieghem var. *acacioides* KFK 8696.

Hemi-parasite on *Terminalia platyphylla*, leaves glaucous, flowers pale salmon-pink, connective directly below anther crimson red, not extending into corolla tube, anthers yellow, also style. Common with *Decaisnina biangulata*, Calder River. Fl. May.

LYTHRACEAE

Lagerstroemia archeriana Bailey KFK 8720.

Small tree to 4 m. Amongst massive sandstone scree below gorge, Charnley River.

MALVACEAE

Abutilon andrewsianum W.Fitzg. DJE 4; DF 4.

Small shrub to 1.5 m, leaves dark green above and whitish beneath, densely pubescent above and below, petiole 4-7 cm long and hairy, flowers yellow-orange. Occasional in woodland and grassland of alluvial floodplain in brown-black sandy clay, Munja and Calder River. Fl. May.

Abutilon indicum (L.) Sweet JJA & GJK s.n.; AVM s.n.

On sandstone, Charnley River and Mt Daghish vine thicket.

Hibiscus fryxellii Mabb. KFK 8750.

Sub-shrub to 0.5 m, flowers pink. On edge of King Leopold Sandstone adjacent to a closed gallery forest, Calder River. Worora name = *djurad*. Fl. May.

Hibiscus leptocladus Benth. AVM 201.

Sub-shrub to 1 m. Occasional in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above river level, Charnley River.

Hibiscus meraukensis Hochr. DF 7.

Dwarf shrub 1 m, leaves dark green above and paler beneath. Occasional in woodland of alluvial floodplain in red-brown sand, Munja.

Thespesia thespesioides (Benth.) Fryxell KFK 8749, 10459.

Shrub to 1.5 m, flowers orange. In transitional area between massive outcropping of King Leopold Sandstone and *Eucalyptus houseana* woodland fringing a closed gallery forest, Calder River and mouth of Isdell River. Fl. May.

MELASTOMATACEAE

Melastoma affine D. Don KFK (SR).

Tall shrub to 2 m, flowers pinkish purple. On edge of patch vine thicket on Isdell River.

Memecylon pauciflorum Blume var. *pauciflorum* JJA & GJK s.n.; DF 33.

Small tree to 4 m, bark finely vertically fissured, inner bark brown-fawn, unripe fruits green. Occasional in scrub with *Ficus*, *Brachychiton* and *Strychnos* in rocky gorge by running water over sandstone on sandy soil, upper Neville Creek and Mt Daghish vine thicket. Fr. May.

MELIACEAE

Aglaiia elaeagnoidea (A.L.Juss.) Benth. AVM 102.

Sub-emergent tree, leaflets alternate. In forest of mixed species on a large boulder-strewn ephemeral shady watercourse below a sandstone scarp of basalt in narrow gorge, Neville Creek.

Melia azedarach L. var. *australasica* (A.L.Juss.) C.DC. JJA & GJK 1326, 1382; DF 5; BH 25141 RFK, 25535 RFK; KFK 8778, 10450A.

Tree to 8 m, leaves bipinnate, dark green above, light green beneath. Occasional in grassland of alluvial floodlain in black-brown sandy clay, and in black peat in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River, Munja, Mt Dalglish and mouth of Isdell River. Fr. June.

Owenia vernicosa F.Muell. AVM 226.

Low tree to 4 m, fruits green. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river in pale sandy, skeletal soil, Charnley River. Fr. May.

Xylocarpus moluccensis (Lam.) M.Roemer AVM 64.

Tree 7 m. Occasional in woodland of mixed mangroves in a small ditch of creek at edge of rugged boulder plateau of sandstone, in grey sandy clay, Charnley River.

MENISPERMACEAE

Pachygone ovata Miers ex J.D.Hooker & Thomson AVM 154, 194.

Climbing woody herb 2-4 m. Occasional in mixed monsoon forest in narrow gorge, in red-brown loam, at base of sandstone scarp and in boulder-strewn watercourses over basalt, Neville Creek.

Tinospora smilacina Benth. AVM 58, s.n.

Climbing woody herb to 2 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil and in forest above Charnley and Calder Rivers.

MIMOSACEAE

Acacia arida Benth. AVM s.n.

On sandstone, Charnley River.

Acacia delibrata Cunn. ex Benth. AVM 195.

Occasional shrub in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble King Leopold Sandstone plateau, 10 m above level of river in pale, sandy, skeletal soil, Charnley River.

Acacia froggattii Maiden CD s.n.

Spreading, viscid, aromatic sub-shrub to 0.7 m high, flowers yellow, growing in sandstone. Artesian Range between Charnley River gorge and head of Walcott Inlet. Fl Aug.

Acacia hemsleyi Maiden AVM 67.

Shrub to 3 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on river bank in brown sand at edge of rugged sandstone boulder plateau, Charnley River.

Acacia platycarpa F.Muell. AVM s.n.

Small erect tree, bark dark grey, flakey to fibrous, reddish-brown below surface, upper branches smooth, highly pruinose, branchlets orange-yellow, flowers white. In closed forest at edge of Charnley River. Fl. May.

Acacia stigmatophylla Cunn. ex Benth. AVM 11; DJE 1.

Shrub to 1 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on a basalt boulder scree in brown loamy soil, also frequent in alluvial floodplain woodland, Calder River. Fl. May.

Acacia tenuispica Maslin AVM 224.

Shrub to 2 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone 10 m above level of river in pale, sandy, skeletal soil, Charnley River.

Albizia lebeck (L.) Benth. AVM 77, 187, 190; DF 37.

Large tree to 10 m, bark corky, widely fissured. Occasional in forest associated with *Lophostemon grandiflorus* in ephemeral watercourse, also in forest with *Adansonia gregorii* and other mixed species on raised sandbank above floodplain, and below a rugged sandstone boulder plateau, in brown sand, gorges of Neville Creek and Charnley River.

MORACEAE

Fatoua pilosa Gaud. AVM 22.

Woody herb to 0.2 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, also on basalt boulder scree slope with brown loam soil, junction of Brockman and Calder Rivers.

Ficus coronulata F.Muell. KFK 8698.

Tree to 7 m, bark smooth, light grey, leaves discoloured, dark green on top, light green underneath. Common beside river in alluvial sand, Calder River.

Ficus hispida L.f. JJA & GJK 1347; DF 13; BH 25521 RFK; KFK 10460.

Tree 12 m. In the deposition zone at junction of sandstone outcrop and alluvial floodplain, water-logged and spring-fed, and in black peaty soil, with *Ficus*, *Pandanus*, *Melaleuca leucadendra* and *Eucalyptus houseana*, Calder River, and mouth of Isdell River.

Ficus leucotricha (Miq.) Miq. AVM 115.

Small tree, large ripe figs on ground. Occasional in mixed forest, in brown skeletal soil, in shady, large boulder-strewn ephemeral watercourse below sandstone scarp, over basalt, in narrow gorge of Neville Creek. Fr. May.

Ficus opposita Miq. JJA & GJK 1327; DF 2.

Tree 5 m, leaves dark green above, paler beneath, sandpapery rough with three prominent basal veins and milky sap, fruit globular, 1 cm diameter, purple-black when ripe, fruit stalk 5-7 mm. Frequent in low open woodland of alluvial floodplain, with scattered *Adansonia* and *Terminalia* in brown-black sandy clay, Munja, and common on edge of *Nauclea orientalis* forest-riverine flat in inundated black clay at mouth of Isdell River.

Ficus opposita var. *indecora* (Miq.) Corner CD s.n.

Tree 5 m. Munja.

Ficus platypoda (Miq.) Cunn. ex Miq. DF 27; BH 13561, 25520 RFK.

Well-spread small tree 2 m, bark greyish-white, end of branchlets densely pubescent, leaf undersurface finely pubescent. With *Canarium* and *Celtis*, straggling on craggy sandstone at head of gorge, Neville Creek, and mouth of Isdell River.

Ficus racemosa L. JJA & GJK 1322; DF 11; KFK 8740.

Large cauliferous tree to 15 m, bark white-grey, scaly and shedding in square patches, roots buttressed. Dominant to abundant with *Flagellaria* and *Ficus*, in forest bordered by *Melaleuca leucadendra* and *Eucalyptus houseana*. In deposition zone fed by springs, surface and sub-surface, run-off at base of junction between sandstone outcrop and alluvial plain in black peaty sand, Calder River and mouth of Isdell River. Worora name = *killiam*.

Ficus scobina Benth. vel. affin. BH 13559.

Tree to 5 m, leaves scabrous. Mouth of Isdell River.

Ficus tinctoria G. Forster AVM 170.

Climbing woody herb. Occasional in mixed forest in shady, ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt in brown skeletal soil in gorge of Neville Creek.

Ficus virens Aiton var. *sublanceolata* (Miq.) Corner DF 10; KFK 10457; AVM 145.

Tree to 10 m, bark white-grey, fruits cream coloured (being eaten by Varied Triller). Frequent in gallery forest with *Ficus*, *Pandanus*, *Flagellaria* and *Lophostemon*, in deposition zone fed by surface and sub-surface springs and run-off at base of sandstone outcrop in transition to alluvial floodplain, over sandstone in black peaty soil, Calder River and mouth of Isdell River. Fr. May.

MYRSINACEAE

Rapanea porosa (F.Muell.) Mez JJA & GJK 1381; AVM 161.

Small tree 3-4 m, fruits, pale green, perhaps not ripe. Occasional in mixed forest in a shady, ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt in brown skeletal soil in gorge of Neville Creek and Mt Daghish vine thicket. Fr. May, June.

MYRTACEAE

Calytrix brownii (Schauer) Craven JJA 559; AVM 40.

Dwarf shrub 1 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil, Calder River, and near Mt Daghish vine thicket.

Calytrix exstipulata DC. DD 10; CD s.n.; DJE 13; DF 22.

Shrub to 2 m, leaves weakly scented, corolla tube green, sepals crimson. Occasional in dry open woodland on sandstone plateau with yellow sand of Harding Range, on rock face in well-watered soil of grey sandy clay of gorge in Charnley River, in grassland on edge of sandstone slab in reddish-brown sandy clay near gallery forest, Calder River, and in limestone gorge of Isdell River.

Eucalyptus brachyandra F. Muell. WRE 810.

Tree to 4 m, bark fibrous. In sandstone along Calder River.

Eucalyptus clavigera Cunn. ex Schauer CAG 1088.

Erect tree to 10 m, flowers white. Walcott Inlet. Fl. Sept.

Eucalyptus confertiflora F. Muell. CAG 268, 1088, 1588.

Tree with stocking bark, flowers white. Charnley River. Fl. Sept.

Eucalyptus houseana W. Fitzg. ex Maiden BH 25525 RFK; KFK 10449.

Tree to 25 m, bark smooth, white, leave pale green. In gallery forest E end of Inlet.

Eucalyptus polycarpa F. Muell. KFK (SR).

Tree, on edge of gallery forest near Charnley River.

Eucalyptus tectifera F. Muell. CAG 1589; AVM 52.

Tree 10 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt scree slope with brown loam soil, Calder River. Worora name = *golyu*.

Lophostemon grandiflorus (Benth.) Peter G. Wilson & J.T. Waterhouse subsp. *riparius* (Domin) Peter G. Wilson & J.T. Waterhouse. KFK (SR).

Large tree, on alluvial floodplain on edge of Calder River.

Melaleuca leucadendra (L.) L. DF 20; BH 25524 RFK, 25534 RFK; KFK 10786, 10798.

Tree 8 m. Abundant at edge of gallery forest with *Eucalyptus houseana* and *Pandanus spiralis* on edge of alluvial plain on edge of sandstone outcrop in black peaty sand, Calder River, and mouth of Isdell River.

Melaleuca viridiflora Sol ex Gaertner BH 25522 RFK, 25523 RFK; KFK 10784, 10785, 10790.

Paperbark to 12 m, "narrow-leaved". On edge of gallery forest, mouth of Isdell River.

Syzygium eucalyptoides (F.Muell.) B.Hyland WVF s.n.

Tree in bud and flower. Calder River. Fl. Aug.

Syzygium nervosum DC. JJA s.n.; BH 25143 RFK; KFK 8744, 8760, 8769, 10479, 10906.

Slightly buttressed tree to 15 m, bark grey-brown, shedding in irregular flakes, blaze cream fibrous, leaves glossy green, young leaves with a purple flush. Forming canopy in gallery forest, in black peat soil, Calder River, mouth of Isdell River and Harding Range.

Syzygium suborbiculare (Benth.) T.Hartley & Perry KFK 8742.

Tree to 5 m, bark light silver-grey. On edge of wetland at junction of sandstone and floodplain, Calder River.

Xanthostemon eucalyptoides F.Muell. BH 25532 RFK.

Spreading tree to 4 m, leaves sessile. In sandstone water courses.

Xanthostemon paradoxus F.Muell. JJA & GJK 1393; AVM 203.

Low tree to 4 m, flowers rich yellow. Fairly frequent in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river, in pale, sandy, skeletal soil, Calder River, and edge of Mt Darglish vine thicket. Fl. May.

NYCTAGINACEAE

Boerhavia burbidgeana Hewson KFK 8711.

Tuberous sub-shrub, flowers pink. In alluvial sand, Calder River. Fl. May.

Boerhavia dominii Meikle & H.J.Hewson JJA & GJK 1348; AVM s.n..

Erect herb to 30 cm, flowers mauve. Uncommon in *Nauclea orientalis* forest-riverine flat in inundated black clayey soil, mouth of Isdell and Charnley Rivers. Fl. May.

Pisonia aculeata L. BH 21214 V.

Liane, flowers small and inconspicuous. In vine thicket, SW end of Harding Range.

NYMPHAEACEAE

Nymphaea violacea Lehm. Hook. KFK 8722.

Emergent aquatic, flowers blue-mauve, calyx segments mottled deep purple. Common in billabong behind abandoned Munja Station. Fl. May.

OLEACEAE

Jasminum didymum G.Forster AVM 7, 55, 212.

Woody scrambler or vine to 2 m, flowers cream. Occasional in woodland with *Adansonia gregorii* and other mixed species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river, in pale skeletal sand or brown loam, Calder River. Fl. May.

Jasminum didymum G.Forster subsp. *didymum* (approaching subsp. *lineare* (R.Br.) P.S.Green). AVM s.n.

On sandstone, Charnley River.

Jasminum molle R.Br. AVM 63.

Shrub 0.5-1 m, ripe fruit shiny black. Occasional in woodland with *Adansonia gregorii* and other mixed species on brown sandy river bank at edge of rugged sandstone boulder plateau, Charnley River. Fr. May.

ONAGRACEAE

Ludwigia octovalvis (Jacq.) Raven JJA & GJK 1346.

Erect leafless herb to 50 cm, pods ribbed, brown. Rare in *Nauclea orientalis* forest-riverine flat in inundated black clayey soil at mouth of Isdell River. Fr. June.

Ludwigia perennis L. JJA & GJK 1342; DJE 21; KFK 8731.

Small herb to 20 cm, flowers small, yellow. Occasional in grassy woodland near creek in Warton sandstone in reddish-brown sandy clay and on edge of billabong which abuts King Leopold Sandstone with *Adansonia gregorii* and *Terminalia canescens*, Calder River and at mouth of Isdell River. Fl. May, June.

OPILIACEAE

Cansjera leptostachya Benth. KFK 10471.

Munch-branched shrub to 2 m, branches pendulous, upper leaves glossy green. Near mouth of Isdell River.

Opilia amentacea Roxb. CD s.n.

Woody, semi-erect climber. Beside creek in gully in low grade river forest, foothills of Harding Range.

PAPILIONACEAE

Abrus precatorius L. AVM 9.

Scrambling vine. In woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil, Calder River.

Bossiaea bossiaeoidea (Cunn. ex Benth.) Court DF 26.

Dwarf shrub 1 m, well-spreading in form. Occasional in shrubland-heath on a sandstone plateau with yellow sand, Harding Range.

Cajanus acutifolius (F.Muell.) Maesen KFK 8715; AVM 211.

Shrub to 1.5 m, flowers with yellow stamens and maroon striations, keel yellowish green. Forming dense stands in alluvial sand, and occasional plants in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of Charnley and Calder Rivers. Fl. May.

Cajanus viscidus Maesen AVM 68.

Shrub of 1 m. Occasional in forest with *Adansonia gregorii* mixed with other species, on brown sandbank at edge of river, below rugged sandstone boulder plateau, Charnley River.

Canavalia papuana Merr. & Perry JJA & GJK s.n.

Climber in Mt. Darglish vine thicket.

Canavalia rosea (Swartz.) DC. CD s.n.

Creeper on river flats, Munja.

Christia australasica (F.Muell. ex Schindl.) Bakh.f. ex Meeuwen AVM 8.

Delicate climber 1-2 m. Occasional in mixed woodland with *Adansonia gregorii*, on a boulder scree slope over basalt, in brown loam, Calder River.

**Clitoria tematea* L. DJE 48.

Prostrate scrambler, flowers large, bright blue. Above wet muddy river bank near abandoned Munja Settlement. Fl. May.

Crotalaria novae-hollandiae DC. DD 5.

Shrub 70 cm, flowers yellow, pods pea-like. Occasional on steep north-facing slope of King Leopold Sandstone on brown sand, Charnley River. Fl. May.

Crotalaria retusa L. DD 2; DF 6.

Dwarf shrub to 1 m, leaves dark green above, paler beneath and finely pubescent, flowers yellow or purple. Occasional in grassland of alluvial floodplain with brown-black sandy clay soil, and on a rocky island of King Leopold Sandstone in brown sandy soil, Charnley and Calder Rivers. Fl. May.

Crotalaria medicaginea Lam. DD 3; DJE 29, 31; AVM 89; WMM s.n.

Woody herb to 0.5 m, flowers yellow. Frequent on edge of forest above river floodplain and below a rugged boulder-strewn plateau of King Leopold Sandstone in light brown sandy soil, Charnley River and on bank of billabong below old Munja Station. Fl. May - June.

Desmodium gangeticum (L.) DC. AVM 16.

Woody herb 0.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope with brown loam soil, Calder River.

Desmodium heterocarpon (L.) DC. var. *strigosum* Meeuwen DJE 11.

Small woody herb 1 m, flowers small, purple. In gallery forest inundated

area of King Leopold Sandstone slab with black peaty soil, Calder River. Fl. May.

Flemingia lineata (L.) Roxb. JJA & GJK 1379.

Soft herb to shrub to 1 m, pods green. Uncommon in deciduous vine thicket in red loamy soil, Mt Daghish. Fl. & Fr. June.

Glycine tomentella Hayata AVM 5.

Climbing woody herb, 1-1.5 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope with brown loam soil, Calder River.

Indigofera colutea (Burm.f.) Merr. DJE 32, 38.

Small herb 10 cm, flowers coral-pink to red or mauve. Occasional between grassland and forest on or above river floodplain below a rugged boulder strewn plateau of King Leopold Sandstone in pale brown sandy soil, Charnley River. Fl. May.

Indigofera linifolia (L.f.) Retz. DJE 6.

Small woody herb 15 cm, flowers very small, red. Abundant in grassy woodland on alluvial floodplain in reddish-brown clayey sand, Calder River. Fl. May.

Jacksonia affin. *thesiodes* (Cunn.) Benth. DF 25.

Woody shrub 2 m, flowers yellow. Occasional in shrubland-heath on sandstone plateau, with yellow sand, Harding Range. Fl. May.

Psoralea badocana (Blanco) Blanco CD s.n.

Shrub, flowers purple. On river flats below Harding Range. Fl. Aug.

Rhynchosia minima (L.) DC. DJE 36; AVM 223.

Trailing vine to 2 m, flowers yellow. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river, in pale, sandy, skeletal soil, Charnley River. Fl. May.

Sesbania cannabina (Retz.) Poirer var. *cannabina* DD 4; DJE 41; WVF 1446.

Shrub to 5 m, flowers yellow. On a steep north-facing rocky slope of King Leopold Sandstone, with very little soil, occasional in woodland atop a rugged sandstone boulder-strewn plateau in light brown sandy soil, Charnley River and mouth of Calder River. Fl. May.

Sesbania formosa (F.Muell.) N.Burb. BH 13558, 25519 RFK 25529 RFK.

Large tree, leaves pinnate, flowers large white pea. Mouth of Isdell River.

Vigna lanceolata Benth. var. *latifolia* C.T.White KFK 8783.

Trailing perennial, flowers pale yellow. Common on alluvium of valley floor on levee bank adjacent to Calder River. Fl. May.

PASSIFLORACEAE

Adenia heterophylla (Blume) Koord. subsp. *australis* (DC.) de Wilde WVF 1403; AVM 12, s.n.

Climbing woody herb 1-2 m. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope with brown loam soil, Calder River, and on sandstone above Charnley River.

**Passiflora foetida* L. var. *hispidula* (DC. ex Triana & Planch.) Killip AVM 73.

Climbing herb 2 m, leaves light bright green. Occasional in forest with *Adansonia gregorii* and other mixed species on raised sandbank above river and below rugged sandstone boulder plateau in brown sand, Charnley River.

PEDALIACEAE

Josephinia eugeniae F. Muell. KFK 10908.

Erect herb, leaves discoloured, palish green, flowers pink. In alluvial sand on edge of gallery forest at mouth of Isdell River. Fl. Jan.

PITTOSPORACEAE

Citriobatus spinescens (F.Muell.) Druce DF 39; AVM 104.

Small tree to 4 m, fruits green turning brown, mature fruit containing seeds in a jam. Occasional in forest in a rocky gorge over basalt with reddish-brown soil of clayey sand, and in mixed forest in a shady ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt rock on skeletal brown soil in gorge of Neville Creek. Fr. May.

PLUMBAGINACEAE

Plumbago zeylanica L. JJA & GJK 1387; DJE 25.

Shrub 1 m, seed capsules sticky. Occasional at edge of forest on raised sandbank above river floodplain and below rugged boulder-strewn plateau of sandstone, in light brown sand, Charnley River, and Mt Daghish vine thicket. Fr. May, June.

POLYGONACEAE

Polygonum barbatum L. KFK 8746.

Perennial woody herb with white flowers. In creek in black peat soil and in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge of Calder River. Fl. May.

PORTULACACEAE

Portulaca bicolor F.Muell. KFK 8752.

Herb, leaves green, stems pink, flowers pink. In crevices of massive King Leopold Sandstone, abutting alluvial floodplain, with *Adansonia gregorii*, *Xanthostemon paradoxus*, *Terminalia* spp. and *Brachychiton* sp., Calder River. Fl. May.

PROTEACEAE

Grevillea heliosperma R.Br. AVM 214.

Tall shrub to 4 m. Occasional in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river, in pale, sandy, skeletal soil, Charnley River.

Grevillea refracta R.Br. JJA 560.

Erect shrub to 4 m, leaves long, linear, flowers orange and yellow. Common on sandstone plateau with *Grevillea wickhamii*, *Acacia* spp. in reddish brown loamy soil, near Mt Daglish vine thicket. Fl. June.

Grevillea wickhamii Meissner JJA & GJK 1392; DF 24.

Woody shrub 2 m, flowers red. Occasional in shrub-heath of sandstone plateau in yellow sandy soil, Harding Range and near Mt Daglish vine thicket. Fl. May, June.

Stenocarpus cunninghamii R.Br. JJA & GJK 1397; KFK 8726.

Small tree to 6 m, flowers yellow-orange. On edge (rim) of cliff of Mt Daglish and on edge of vine thicket. Fl. May, June.

RHAMNACEAE

Alphitonia excelsa (Fenzl) Reissek ex Benth. KFK (SR).

Tree to 12 m, leaves distinctly discolorous, fruits black. On edge of vine thicket on Isdell River.

RHIZOPHORACEAE

Carallia brachiata (Lour.) Merr. JJA & GJK 1344, 1380; DF 21; KFK 8743, 8762.

Tree to 11 m, bark pale orange-grey, roots very slightly buttressed. In black peat soil in inundated area of gallery forest fringing an unnamed creek flowing from a sandstone gorge near Calder River, mouth of Isdell River and Mt Daglish vine thicket. Fl. June.

RUBIACEAE

Aidia racemosa (Cav.) Tirvengenadum JJA & GJK s.n.; DF 29; AVM 198.

Tree to 6 m, ripe fruit, red. Domatia and interpetiolar stipules present. Frequent in scrub near rocky outcrop in gorge on sandstone with grey-yellow

sand and associated with *Ficus* and *Canarium*, in a small patch of vine thicket along seasonal stream feeding the Charnley River, at base of 10 m abrupt plateau of King Leopold Sandstone, Mt Daghish in Harding Range. Fr. May.

Gardenia megasperma F. Muell. var. *arborea* Ewart & Cookson. JJA & GJK 1394; AVM s.n.

Tree to 6 m, bark yellowish grey. Occasional in savannah woodland on sandstone above Charnley River, and near Mt Daghish vine thicket. Fr. June.

Nauclea orientalis (L.) L. JJA & GJK 1321; DF 15; KFK 8741, 8759.

Tree to 11 m, bark grey and slightly corky. In black peat in inundated area of gallery forest, forming the canopy with *Melaleuca viridiflora*, fringing an unnamed creek flowing from a sandstone gorge, near Calder River, and at mouth of Isdell River.

Pavetta brownii Bremek AVM 191.

Shrub 3 m, leaves yellowing. Occasional in mixed forest at edge of patch of monsoon forest along boulder-strewn watercourse at foot of sandstone scarp over basalt, in red-brown loam of gorge, Neville Creek.

Spermacoce breviflora F. Muell. ex Benth. WVF 1448.

Herb, near mouth of Calder River. Fl. Aug.

Timonius timon (Sprengel) Merr. JJA & GJK 1340; DF 18.

Small tree to 3 m. Occasional in gallery forest with *Ficus*, *Syzygium* and *Flagellaria* on alluvial plain on edge of sandstone outcrop in black peat near Calder River, and at mouth of Isdell River.

RUTACEAE

Glycosmis sapindoides Lindley ex Oliver var. *australiensis* B.C.Stone JJA & GJK 1377; DF 28; AVM 139.

Small tree 3 m, buds green, flowers pale yellow, leaves scented. Occasional in scrub with *Ficus* and *Brachychiton* near sandstone crags at head of gorge of Neville Creek, and in Mt Daghish vine thicket. Fl. May, June..

Micromelum minutum (G.Forster) Wight & Arn. DF 41.

Small tree 3 m. Occasional in forest of basaltic rocky gorge with reddish-brown clayey sand, gorge of Neville Creek.

SANTALACEAE

Exocarpos laetifolius R.Br. AVM 98.

Shrub 3 m. Occasional in forest with *Adansonia gregorii* and other mixed species, on raised sandbank above floodplain of river and below rugged sandstone boulder plateau, in brown sand, Charnley River.

Santalum lanceolatum R.Br. AVM 74.

Shrub 3 m. Occasional in forest with *Adansonia gregorii* and other mixed species on raised sandbank above river and below rugged sandstone boulder plateau in brown sand, Charnley River.

SAPINDACEAE

Atalaya hemiglauca (F.Muell.) F.Muell. ex Benth. DF 42; AVM 103.

Tree to 2 m. Frequent in mixed forest of a shady ephemeral watercourse strewn with large boulders and below a sandstone scarp over underlying basalt rock in brown skeletal soil, in gorge of upper Neville Creek.

Distichostemon hispidulus (Endl.) Baillon AVM 213.

Shrub 2 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, in pale skeletal sand 10 m above level of Charnley River.

Ganophyllum falcatum Blume AVM 188.

Tree 12 m, one of the sub-emergent trees of the forest, probably evergreen. Occasional in monsoon forest patch at base of sandstone scarp and along ephemeral watercourse over basalt rock in with red-brown skeletal soil, gorge of Neville Creek.

SAPOTACEAE

Mimusops elengi L. DF 8; KFK 8756; AVM 72.

Tree to 5 m, milky sap in petiole, numerous raised lenticels, fruit dark orange, ripe, edible, shiny dark pip. Frequent in gallery forest by broad drainage line at base of sandstone, also occasional in forest with *Adansonia gregorii* and other mixed species at the creek edge below a sandstone cliff of rugged boulder plateau near the river bank in brown sand, also black peaty sand of Charnley and Calder Rivers. Fr. May.

Pouteria arhemica (F.Muell. ex Benth.) Baehni AVM 59; KFK 8723.

Tree to 8 m, bark dark. On Mt Daghish amongst massive Warton Sandstone and in woodland with *Adansonia gregorii* amongst rugged sandstone boulders, in yellow sand, Charnley River.

Pouteria sericea (Aiton) Baehni KFK 8776; AVM 43, 114.

Tree to 6 m, bark dark brown-black. Fruits eaten by Bower Bird. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope in brown loam soil, and on edge of gallery forest growing in black peat in inundated area of forest fringing an unnamed creek flowing from a sandstone gorge, Calder River and Mt Daghish vine thicket.

SCROPHULARIACEAE

Limnophila fragrans (G.Forster) Seeman KFK 8766.

Decumbent herb, flower corolla lobes pale mauve, throat white. In mud on

edge of closed gallery forest fringing an unnamed creek flowing from a sandstone gorge, Calder River. Fl. May.

Stemodia affin. *flaccida* W.Fitzg. DD 1; KFK 8718.

Dense, prostrate, woody shrub to 30 cm, leaves pale green, corolla mauve-purple with purple striations. Called 'wild tobacco' by local natives, in Worora = *kolola*, has a very strong characteristic aroma. Common in shallow sand and crevices of shaded King Leopold Sandstone ledges, gorge of Charnley River. Fl. May.

Stemodia lythrifolia F.Muell. ex Benth. AVM 209.

Woody herb to 50 cm. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river, in pale skeletal sand, Charnley River.

Striga curviflora (R.Br.) Benth. DJE 16.

Herb to 20 cm, flowers white. Frequent on edge of woodland by a slab of King Leopold Sandstone, Calder River. Fl. May.

SOLANACEAE

**Physalis minima* L. JJA & GJK 1324; KFK 8702.

Sub-shrub to 0.4 m, flowers cream. In alluvial sand beside Neville Creek, and at mouth of Isdell River. Fl. May, June.

Solanum lucani F.Muell. JJA 556; KFK 8721; AVM 210.

Sprawling sub-shrub to 50 cm, flowers blue-mauve. In crevices of massive sandstone in gorge, and in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river in pale sandy skeletal soil, Charnley River and Mt Daghish vine thicket. Fl. May. Fr. June.

STERCULIACEAE

Brachychiton diversifolius R.Br. KFK (SR).

Tree, on banks of Calder River.

Brachychiton viridiflorus (W.Fitzg.) Guymer AVM 45.

Tree 2-4 m. Occasional in woodland with *Adansonia gregorii* and other mixed species, on basalt boulder scree slope in brown loamy soil, Calder River.

Brachychiton viscidulus (W.Fitzg.) Guymer KFK 8758.

Tree to 5 m, flowers pink, base of perianth green, also in bud. In massive outcropping of King Leopold Sandstone, with *Adansonia gregorii*, *Terminalia* spp. and *Xanthostemon paradoxus*, Calder River. Fl. May.

Helicteres rynchocarpa W.V. Fitzg. AVM 80.

Shrub of 0.5 m, in old fruit, dehisced. Occasional in forest with *Adansonia gregorii* and other mixed species, on raised sandbank above floodplain of river and below rugged sandstone boulder plateau, in brown sand, Charnley River.

**Melochia pyramidata* L. KFK 8710; AVM 21.

Woody sub-shrub 0.5 m, flowers purple-mauve. Occasional in woodland with *Adansonia gregorii* and other mixed species on basalt boulder scree slope in brown loam soil, also in alluvial sand, Calder River. Fl. May.

Sterculia quadrifida R.Br. AVM 225.

Tall shrub, fruits green. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river in pale skeletal sand, Charnley River. Fr. May.

Waltheria indica L. JJA & GJK s.n.; DJE 12; AVM 222.

Woody shrub to 1 m, flowers tiny, yellow.. Frequent at edge of gallery forest on sandstone in black peat, and in open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder plateau of King Leopold Sandstone, 10 m above level of river in pale sandy skeletal soil, Charnley and Calder Rivers and Mt. Daghish vine thicket. Fl. May.

STYLIDIACEAE

Stylidium irriguum W. Fitzg. CD s.n.; DD 9.

Small herb, leaves spatulate in basal tuft, flowers pink. By permanent spring in ranges between mouths of Calder and Charnley Rivers. Fl. May - Aug.

TILIACEAE

Corchorus acutangulus Lam. KFK 8705.

Herb, stem purple tinged, flowers yellow. In alluvial sand, Calder River. Fl. May.

Corchorus leptocarpus (Cunn.) Benth. KFK 10451.

Sub-shrub to 1.5 m, leaves grey. On edge of vine thicket, Harding Range.

Grewia breviflora Benth. BH 25531 RFK.

Deciduous shrub or tree to 8 m, bark greyish-brown, leaves ovate with 3 prominent veins on undersurface, flowers white or creamish, fruits green turning blue-black. On edge of vine thicket, mouth of Isdell River.

Grewia orientalis L. JJA & GJK 1386; BH 21239 V; AVM 94,

Shrub to 4 m, mature fruits green, most fruits old, dried brown and brittle, fruit has meagre but apparently edible pulp. (A tree rat was observed probably feeding on the fruits). Frequent in forest with *Adansonia gregorii* and other mixed species on raised sandbank above the floodplain and below

a rugged sandstone boulder-strewn plateau of Charnley River and in brown sand or skeletal soil in narrow gorge of Neville Creek, NW of Mt Daglish, and mouth of Isdell River. Fr. May, June.

Grewia oxyphylla Burret DF 16; AVM 101.

Tree 2-3 m. Occasional in gallery forest with *Eucalyptus houseana*, *Melaleuca*, *Ficus*, *Pandanus* and *Flagellaria*, on alluvial plain on edge of King Leopold Sandstone in black peaty sand, Calder River.

Grewia polygama Roxb. WVF 1455.

Much-branched shrub to 1 m, flowers small, white, fruit reddish brown. In sand over limestone, Mt Daglish. Fl. and Fr. Aug.

Triumfetta pentandra A. Rich. DJE 17, 33; AVM s.n..

Woody herb 1 m, flowers yellow, seed burr-like. Abundant on raised sandbank above river floodplain and on edge of forest below a rugged, boulder-strewn plateau of King Leopold Sandstone, in light brown sandy skeletal soil, Charnley River and at edge of gallery forest by Calder River. Fl. and Fr. May.

Triumfetta plumigera F. Muell. AVM 204.

Shrub to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder-strewn plateau of King Leopold Sandstone, 10 m above level of river in pale sandy skeletal soil, Charnley River.

Triumfetta sp. F Kimb. Flora AVM 200.

Shrub to 1 m. In open woodland of *Adansonia gregorii* and other species over open spinifex on rough-and-tumble boulder-strewn plateau of King Leopold Sandstone, 10 m above level of river in pale sandy skeletal soil, Charnley River.

Triumfetta sp. M Kimb. Flora KFK 10911.

Sub-shrub, flowers yellow. In alluvial sand on edge of gallery forest at mouth of Isdell River. Fl. Jan.

Triumfetta sp. S Kimb. Flora KFK 11149

Shrub to 1 m, flowers yellow. Amongst sandstone outcrop at mouth of Isdell River.

ULMACEAE

Celtis philippensis Blanco DF 9; KFK 8775.

Tree to 8 m, bark silver-grey. On edge of gallery forest fringing an unnamed creek flowing from a sandstone gorge, in black peat soil. Also found frequently in forest with *Ficus* sp., *Pandanus* and *Flagellaria* in alluvial deposition area at base of sandstone outcrop, over sandstone, in black peaty soil, Calder River.

Trema tomentosa (Roxb.) Hara var. *viridis* (Brongn.) Hewson AVM 180.

Shrub 2-3 m, ripe fruit small, black shiny. Occasional in mixed forest patch in valley at foot of sandstone scarp over basalt in red-brown loam, gorge of Neville Creek. Fr. May.

VERBENACEAE

Callicarpa candicans (Burm.f.) Hochr. JJA & GJK 1384; AVM 116, 164.

Shrub 1-2 m, fruits small, dull, purple when ripe. Occasional in mixed forest in brown skeletal soil in narrow gorge strewn with large boulders, and frequent in mixed forest of shady, large boulder-strewn ephemeral watercourse below sandstone scarp over basalt, in gorge of Neville Creek, and common in deciduous vine thicket by Mt Daghish. Fr. May, June.

Clerodendrum tomentosum (Vent.) R.Br. var. *lanceolatum* (F. Muell.) Munir WRE 1006.

Small tree. Walcott Inlet. Fl. Sept.

Premna acuminata R.Br. KFK 10458; AVM 90.

Shrub 2 m. Occasional in forest with *Adansonia gregorii* and other mixed species on raised sandbank above floodplain of river and below rugged sandstone boulder plateau in brown sand, Charnley River, and mouth of Isdell River and in Mt. Daghish vine thicket.

Vitex acuminata R. Br. JJA s.n.

Small tree in Mt. Daghish vine thicket.

VIOLACEAE

Hybanthus aurantiacus (F.Muell. ex Benth.) F.Muell. DD 12; DJE 45, 49; KFK 8714.

Woody herb to 40 cm, flowers yellow. In alluvial sand on wet river bank, and on rocky sandstone cliff in grey sand, Calder and Charnley Rivers. Fl. May.

Hybanthus enneaspermus (L.) F.Muell. DJE 47.

Small herb above flooded bank, Calder River. Fl. May.

VITACEAE

Ampelocissus acetosa (F. Muell) Planchon KFK (SR); AVM 48.

Scrambling vine, flowers deep maroon with darker centre, fruits green turning purple black. In vine thicket at mouth of Isdell River. Fl. May.

Cayratia trifolia (L.) Domin BH 21212 V; KFK 10462.

Tendrill climber to 20 m. In vine thicket at mouth of Isdell River.

Cissus adnata (Wallich) Roxb. AVM 69.

Climbing shrub or woody herb to 1 m, ripe fruits shiny dark purple-black. Occasional in woodland with *Adansonia gregorii* and other mixed species on a rugged boulder plateau of sandstone near river, in yellow sand, Charnley River, and on boulder scree slope over basalt in brown loam, Calder River. Fr. May.

Key to collectors and symbols used.

JJA	Jenny Alford	GJK	Greg Keighery
DD	David Dale	KFK	K.F.Kenneally
CD	Consett Davis	JRBL	J.R.B.Love
DJE	D.J.Edinger	AVM	A.V.Milewski
WRE	W.R.Easton	WMM	W. M. Molyneux
DF	David Fell	s.n.	No number
WVF	W.V.Fitzgerald	(SR)	Sight Record
CAG	C.A.Gardner		
BH	Bernie Hyland (V = vine, RFK = Rainforest Key)		