

ACACIA SEEDLINGS, PART X.

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[With Plates XII.-XV.]

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SYNOPSIS:

VITALITY OF SEEDS IN SEA-WATER.

PERIOD BETWEEN FLOWERS AND RIPE PODS.

DESCRIPTION OF SEEDLINGS.

Vitality of Seeds in Sea-Water.

A seed of *Acacia podalyriæfolia* germinated after having been immersed in sea-water for five years.

A seed of *Acacia melanoxylon* from Jenolan Caves was placed in boiling water and planted after having been immersed in sea-water for seven and a half years. At the end of two weeks the seed was taken out of the soil and examined, and as it was found to be perfectly hard it was again placed in boiling water and planted, after which it germinated. This latter instance is regarded as a record for this experiment.

Period between Flowers and Ripe Pods.

Although *Acacia* flowers may be found all the year round, a great many species flower in the winter and early spring, and in these cases the fruits commonly ripen in four or five months. There are some species, however, which flower in midsummer, about November, December and January, and it is remarkable that the seeds of some of these species do not ripen for about twelve months, so that the last year's ripe pods are seen on the trees among the flowers of the following year.

Among those species which take about a year to ripen their pods are:—*A. cyclopis*, *A. elata*, *A. mollissima* and *A. pauciglandulosa*.

A. cyclopis flowers about December and the resultant pods ripen in the following November and December.

A. elata flowers in December and January and the pods ripen one year later.* A tree of this species in full flower at Mittagong in the middle of January was also laden with ripe pods, which were falling. By the following June the young pods were about one inch long, but no flower buds had developed. Late in October the pods were up to four and a half inches long, though still quite green, and the flower buds were present. By the end of December the pods were ripe and the tree was in bloom.

Similar conditions were noted on a tree of *A. mollissima* at Mittagong, except that the various stages were reached about a month earlier than in the case of *A. elata*, and the pods, which do not attain the size of those of *A. elata*, were up to about three inches long in October.

Early in August, trees of *A. pauciglandulosa*, which flowered early in the year, and are growing near the Biological Survey Station, National Park, had green pods about two inches long, but no flower buds. Ripe pods have been gathered at the end of December from trees of this species which were flowering at Jervis Bay.

Description of Seedlings.

UNINERVES—(*Brevifoliæ*).

ACACIA ANCEPS, D C.—Seeds from Yorkes Peninsula, South Australia (Dr. R. H. Pulleine). (Plate XII., Numbers 1 to 3.)

* See "Botany for Australian Students, p. 204, by Agnes A. Brewster and Constance M. Le Plastrier.

Seeds, dark brown, oblong-oval to obovate, 4 to 5.5mm. long, 3mm. broad, 1.5mm. thick.

Hypocotyl terete, light brown above soil, spreading into a flange at base, 1 to 2.7cm. long, 2 to 3mm. thick at base, about 1mm. at apex.

Cotyledons sessile, auricled, oblong to oblong-obovate, apex rounded, 5.5 to 6mm. long, 3.5 to 4mm. broad, upperside green, underside brownish-green, with a few longitudinal lines.

Stem at first angular, becoming terete except where affected by decurrent leaf-stalks, green on shady side, greenish-brown on side exposed to the sun, glabrous. First internode 0.5mm.; second 0.5 to 2mm.; third 1 to 3mm.; fourth to sixth 1mm. to 1cm.; seventh to ninth 2mm. to 1.5cm.

Leaves—No. 1. Abruptly pinnate, petiole 2 to 6mm., glabrous; leaflets three to four pairs, oblong-acuminate, 3 to 7 mm. long, 1 to 2mm. broad, upperside green, underside pale green; rachis 6 to 8mm., with terminal seta; stipules reduced to scales.

No. 2. Abruptly bipinnate, petiole 3 to 6mm., glabrous, with terminal seta; leaflets two to three pairs, oblong-acuminate, apical pair obovate, about 3mm. long, 1 to 1.5mm. broad, upperside green; rachis 3 to 7mm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole 5mm. to 1.3cm., glabrous or sometimes with a few scattered hairs; leaflets three to six pairs, 3 to 5mm. long; rachis 5mm. to 1cm.; stipules reduced to flat acuminate scales 1mm. long.

Nos. 5 to 7. These may be phyllodes, or abruptly bipinnate, petiole 8mm. to 2cm., sometimes, in the case of No. 7, dilated to 2mm. broad, the midrib below the centre

of the lamina, the margins nerve-like; leaflets five to six pairs; rachis 6mm. to 1.8cm.

Nos. 8 to 12. Obovate phyllodes, mucronate, 1.5 to 4.5cm. long, 5mm. to 1.3cm. broad, the midrib slightly below the centre of the lamina, especially in Nos. 8 to 10, penniveined, the margins nerve-like.

On a plant one foot high the upper lanceolate-obovate to almost oblong phyllodes may be up to 7cm. long, 1.6cm. broad, with a gland on the upper margin at about 1 to 1.5cm. from the base.

UNINERVES—(Racemosæ).

ACACIA FALCIFORMIS DC. (*A. penninervis* Sieb. var. *falciformis* Benth.) Seeds from Jenolan Caves. Plate XII., Numbers 4 to 6.)

Seeds black, oblong-oval to oval, 5 to 7mm. long, 3 to 4.5mm. broad, about 2mm. thick.

Hypocotyl terete, reddish-brown above soil, 1.3 to 2.5cm. long, about 2.5mm. thick at base, 1 to 1.5mm. at apex, glabrous.

Cotyledons sessile, sagittate, oblong, apex rounded, 6mm. long, 4mm. broad, soon becoming revolute and cylindrical, upperside green to greenish-red, underside brownish-red.

Stem terete, brownish-red, becoming green when the plant reaches a few feet high, glabrous. First internode 0.5 to 1mm.; second 1 to 5mm.; third 3 to 5mm.; fourth to sixth 3 to 8mm.; seventh 7mm. to 1.2cm.

Leaves—No. 1. Abruptly pinnate, petiole 3 to 5mm., often with gland, brownish-red, glabrous; leaflets five to seven pairs, oblong-acuminate, often mucronate, 7mm. to 1cm. long, 1.5 to 2.5mm. broad, upperside reddish-green, underside brownish-red; rachis 1.2 to 1.7cm., with terminal seta.

No. 2. Abruptly bipinnate, petiole 5 to 7mm., reddish-brown, usually with gland, glabrous, with terminal seta; leaflets four to five pairs, up to 6mm. long, 3mm. broad, the basal pair sometimes very small, underside reddish-brown; rachis 7mm. to 1.4cm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole 1.3 to 1.9cm., sometimes vertically dilated to 2mm. wide in the case of No. 4, with a strong nerve along lower margin, gland towards base on upper margin; leaflets five to nine pairs; rachis 1 to 2.8cm.

Nos. 5 and 6. Abruptly bipinnate, sometimes with two pairs of pinnæ, petiole 1.8 to 3.7cm., vertically dilated in some cases to 8mm., the midrib below the centre of the lamina, gland on upper margin; leaflets nine to twelve pairs; rachis 2 to 3.2cm.

No. 7. This may be a phyllode, or abruptly bipinnate, petiole 3 to 3.7cm., vertically dilated to 1.2cm. broad; leaflets ten to twelve pairs.

Nos. 8 to 12. Lanceolate—falcate, greyish-green phyllodes up to 7cm. long, 2cm. broad, with the midrib above the centre of the penniveined lamina, margins nerve-like, gland towards base.

UNINERVES—(Racemosæ).

ACACIA NOTABILIS F.v.M. var. Seeds from Mount Babbage, Flinder's Range, South Australia (Dr. W. G. Woolnough). (Plate XII, Numbers 7 to 9.)

Seeds dull black, obovate to almost orbicular, 5 to 7mm. long, 4 to 5mm. broad, 2 to 3mm. thick.

Hypocotyl terete, reddish to red above soil, spreading into flange at root, 2 to 3cm. long, 2mm. thick at base, 0.8 to 1mm. thick at apex.

Cotyledons sessile, auricled, oblong-oval, upperside green, underside greenish-red, with raised centre line, 7 to 8mm. long, 4 to 5mm. broad, becoming revolute and in some cases cylindrical.

Stem terete, green to reddish-green, glabrous. First internode 0.5 to 1mm.; second 1 to 3mm.; third 3 to 6mm.; fourth and fifth 6mm. to 1.1cm.

Leaves—No. 1. Abruptly pinnate, petiole 2 to 5mm., glabrous; leaflets five to six pairs, oblong-acuminate, often mucronate, 4mm. to 1cm. long, 2 to 3mm. broad, upperside green, underside paler; rachis 1 to 2.4 cm., glabrous, with terminal seta.

No. 2. Abruptly bipinnate, petiole 1 to 1.3cm., very slender, or sometimes slightly dilated in middle portion, up to 0.5mm., rarely with small gland, glabrous, with terminal seta; leaflets three to four pairs, usually mucronate, smaller than those of No. 1; rachis 9mm. to 1.3cm., with terminal seta.

Nos. 3 to 5. Lanceolate—falcate, greenish-grey, penni-veined phyllodes, 3 to 7cm. long, 7mm. to 1.5cm. broad, margins nerve-like. A gland was not noticed on the early phyllodes, but it may be seen on subsequent ones.

Seedlings came up in one week after seeds were planted in January, and the No. 3 leaf developed into a phyllode up to 1cm. long in two weeks later or three weeks from the time the seed was planted. As the result of growing in a hot climate with a low and uncertain rainfall, this species has evidently developed the character of being able to quickly establish itself once the seed gets sufficient moisture to cause it to germinate.

This is the eighth seedling described in this series where the No. 3 leaf may be reduced to a phyllode, the previous cases being *A. alata*, *A. aspera*, *A. Bancrofti*, *A. excelsa*, *A. flexifolia*, *A. Oswaldi* and *A. tetragonophylla*.

It is not certain that this plant has been correctly identified, and reference will be made to the matter in a later paper.

UNINERVES—(Racemosæ).

ACACIA LIGULATA A. Cunn. (*A. salicina* Lindl. var *Wayæ* Maiden). Seeds from Botanic Gardens, Sydney (J. H. Maiden). (Plate XII, Numbers 10 to 12.)

Seeds dull black to brownish-black, oblong-oval to ovate, 3.5 to 4.5mm. long, 2 to 3mm. broad, about 1.5mm. thick.

Hypocotyl terete, pale green, 8mm. to 1.5cm. long, 1 to 1.3mm. thick at base, about 0.7mm. at apex.

Cotyledons sessile, oblong, apex rounded, 5 to 6mm. long, 2mm. broad, upper side brownish-green, underside brown to puce, sometimes slightly furrowed, usually remaining erect and falling early.

Stem terete, glabrous. First internode 0.5 to 1mm.; second 0.5 to 5mm.; third 1 to 7mm.; fourth to seventh 2mm. to 1.5cm.

Leaves—No. 1. Abruptly pinnate, forming an opposite pair, petiole 1 to 5mm., glabrous; leaflets three pairs, oblong-acuminate, often mucronate, about 3mm. long, 1 to 2mm. broad, upper side green, underside paler, margins often red, with sometimes a few scattered hairs; rachis about 5mm., with terminal seta.

No. 2. Abruptly bipinnate, petiole 3mm. to 1cm., with terminal seta; leaflets three to four pairs, oblong to obovate, sometimes with a few scattered hairs along the margins, up to 3mm. long, 1.5mm. broad; rachis 6 to 7mm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole 7mm. to 2.3cm., slender, glabrous; leaflets four to five pairs; rachis 7mm. to 1.6cm.

Nos. 5 to 7. Abruptly bipinnate, petiole 1 to 3.2cm., sometimes vertically dilated up to 1mm. broad, the midrib slightly below the centre of the lamina; leaflets four to seven pairs; rachis 8mm. to 2cm.

Nos. 8 and 9. Although No. 9 may be a phyllode, both may be abruptly bipinnate, petiole 3 to 4.7cm., dilated up to 2 and 3mm. broad; leaflets seven to eight pairs, up to 5mm. long; rachis 1.7 to 2.4cm.

Nos. 10 to 12. Lanceolate phyllodes, 3 to 4cm. long, 3 to 4mm. broad, with central nerve.

UNINERVES—(Racemosæ).

ACACIA LEPTOPETALA Benth. Seeds from Nindigully via Thallon, southern Queensland (Miss I. Tosh). (Plate XIII, Numbers 1 to 3.)

Seeds dull black, obovate-oval, 4 to 5mm. long, 3 to 4mm. broad, 1.5 to 2mm. thick.

Hypocotyl terete, pale, 1.7 to 3.2cm. long, 1.3 to 2mm. thick at base, about 1mm. at apex.

Cotyledons sessile, slightly auricled, obovate-oblong, 6 to 7mm. long, 3 to 4mm. broad, upperside green, underside yellowish with reddish tint towards apex, to brownish-green and reddish-brown, often with a few longitudinal lines.

Stem at first angular, becoming terete, brownish-red. First internode 0.5mm.; second 0.5 to 2mm.; third to ninth 1mm. to 1cm.

Leaves—No. 1. Abruptly pinnate, forming an opposite pair, petiole 3 to 5mm., glabrous; leaflets two pairs, oblong-acuminate, the apical pair sometimes obovate, 4 to 6mm. long, 1.5 to 3mm. broad, venation fairly distinct, upperside green, underside paler; rachis 3 to 5mm.; with terminal seta.

No. 2. Abruptly bipinnate, petiole 5mm. to 1.2cm., with terminal seta; leaflets two to four pairs, oblong-acuminate to obovate, 2 to 5mm. long, up to 2mm. broad; rachis 5 to 8mm., with terminal seta.

Nos. 3 to 5. Abruptly bipinnate, petiole 6mm. to 1.2cm.; leaflets two to five pairs; rachis 5mm. to 1.5cm.

Nos. 6 to 8. Abruptly bipinnate, petiole 7mm. to 2.3cm.; leaflets four to six pairs; rachis 8mm. to 2.3cm.

Nos. 9 to 12. Abruptly bipinnate, petiole 7mm. to 5.3cm., sometimes dilated up to 1mm. in the case of No. 9, and 7mm. in No. 12; leaflets four to eight pairs; rachis 8mm. to 2.6cm.

Nos. 13 to 20. These may be phyllodes, or abruptly bipinnate, petiole from 1 to 5cm., sometimes dilated up to 7mm. broad, the margins nerve-like, the midrib near the lower margin; leaflets four to six pairs, often mucronate; rachis 7mm. to 1.7cm.

Nos. 21 to 25. Usually lanceolate phyllodes, 5 to 6cm. long, about 6 to 7mm. broad, narrowed towards the base, the midrib either slightly below or in the centre of the lamina which is obscurely penniveined, the margins nerve-like.

PLURINERVES—(Nervosæ).

ACACIA COMPLANATA A. Cunn. Seeds from Eidsvold, Queensland (Dr. T. L. Bancroft, per J. H. Maiden). (Plate XIII, Numbers 4 to 6.)

Seeds brown, oblong-oval, areole distinct, 4mm. long, 2.5 to 3mm. broad, 2mm. thick.

Hypocotyl terete, pale green to pinkish-green above soil, 1.5 to 2cm. long, 2mm. thick at base, about 0.8 to 1mm. at apex.

Cotyledons sessile, auricled, oval to obovate, 5 to 6mm. long, 3 to 4mm. broad, upperside green, underside red.

Stem angular, reddish-brown, glabrous. First internode 0.5mm.; second 1 to 2mm.; third 2 to 3mm.; fourth to fifth 3mm. to 1cm.; sixth to eighth 4mm. to 1.2cm.

Leaves—No. 1. Abruptly pinnate, petiole 3 to 5mm., glabrous; leaflets one to two pairs, oblong-acuminate to obliquely obovate, sometimes mucronate, 3 to 7mm. long, 1 to 4mm. broad, upperside green to reddish-green, underside red; rachis 2 to 3mm., with terminal seta; stipules 1mm. long.

No. 2. Abruptly bipinnate, petiole about 6 to 7mm., with terminal seta; leaflets two pairs, usually obovate, mucronate, up to 4mm. long, 3mm. broad, upperside green, underside reddish to red; rachis 3 to 5mm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole up to 1.2cm., in some cases No. 4 may be dilated to 1mm. broad, glabrous; leaflets two pairs, up to 6mm. long, 4mm. broad; rachis about 5mm.

Nos. 5 to 9. Phyllodes oblong to oval, obtuse, 1 to 4cm. long, 4mm. to 1.4cm. broad, with from three to five prominent longitudinal nerves, and a few fine veins between them, often with a faint gland towards the base.

JULIFLORÆ—(Falcatæ).

ACACIA DORATOXYLON A. Cunn. Seeds from Denman (J. H. Maiden), Cobar (Archdeacon F. E. Haviland), and Wyalong. (Plate XIV, Numbers 1 to 3.)

Seeds black, oblong, 3 to 5mm. long, 2mm. broad, 1 to 1.5mm. thick.

Hypocotyl terete, brownish-red above soil, about 1.5cm. long, 1mm. thick at base, about 0.5mm. at apex.

Cotyledons sessile, auricled, oblong, apex rounded, 5mm. long, 2mm. broad, upperside green, underside pale green to red.

Stem at first slightly angular, soon becoming terete, greenish-grey to brown, at first slightly tomentose, becoming glabrous. First internode 0.5mm.; second 1 to 2mm.; third to fifth 1 to 4mm.; sixth to ninth 2 to 8mm.

Leaves—No. 1. Abruptly pinnate, petiole 2 to 4mm., green to reddish-brown; leaflets two pairs, oblong-acuminate, 3 to 7mm. long, 1.5 to 3mm. broad, upperside green, underside pale pink to red; rachis 2 to 5mm., brownish-green, with terminal seta.

No. 2. Abruptly bipinnate, petiole 4mm. to 1.4cm., with terminal seta; leaflets two to three pairs, oblong-acuminate, the apical pair often obovate, 4 to 5mm. long, 2 to 3mm. broad; rachis 3 to 6mm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole 1.3 to 2.7cm., sometimes pilose; leaflets two to four pairs; rachis 5mm. to 1cm.

Nos. 5 and 6. Abruptly bipinnate, petiole 1.5 to 3.5cm., dilated to 1mm. broad in the case of No. 5, and 3mm. in No. 6; leaflets four to five pairs, margins ciliate; rachis 6mm. to 1.1cm.

Nos. 7 to 10. Lanceolate, slightly falcate, sometimes linear phyllodes, often with a recurved point, 3 to 8cm. long, 3 to 5mm. broad, with a fairly prominent central nerve and numerous fine parallel veins, one on each side of the central nerve usually being slightly more conspicuous than the rest.

JULIFLOREÆ—(Dimidiatæ).

ACACIA HUMIFUSA A. Cunn. Seeds from Stanley Island, Flinders Group, north Queensland (C. Hedley).
(Plate XIV, Numbers 4 to 6.)

Seeds black, oblong, 4 to 5mm. long, 2 to 2.5mm. broad, about 1.5 to 2mm. thick.

Hypocotyl terete, brownish-red above soil, 1.5 to 2.2cm. long, 2mm. thick at base, about 1mm. at apex.

Cotyledons sessile, auricled, oblong, apex rounded, 6 to 6.5mm. long, 3 to 3.5mm. broad, upperside green, underside brownish-green to reddish-brown and red, sometimes with a warty protuberance.

Stem at first slightly angular, becoming terete, ashy grey, tomentose. First internode 0.5mm.; second 1 to 3mm.; third to fifth 1 to 5mm.; sixth to ninth 4mm. to 1.8cm.

Leaves—No. 1. Abruptly pinnate, petiole 2 to 3mm., glabrous or with a few scattered hairs; leaflets three pairs, oblong-acuminate, 4 to 6mm. long, 2 to 3.5mm. broad, upperside green, underside paler; rachis 3 to 5mm., with terminal seta; stipules about 1mm. long.

No. 2. Abruptly bipinnate, petiole 4 to 8mm., pilose to hirsute, with terminal seta; leaflets three to four pairs, upperside green, underside paler, venation distinct, margins ciliate; rachis 3 to 6mm., with terminal seta; stipules about 1mm. long.

Nos. 3 and 4. Abruptly bipinnate, petiole 4mm. to 1.2cm., hirsute; leaflets three to five pairs, oblong-acuminate, margins ciliate; rachis 4mm. to 1.1cm., pilose.

Nos. 5 and 6. Abruptly bipinnate, petiole 8mm. to 2.7cm., pilose to hirsute, sometimes vertically flattened from 1 to 2mm. broad in the case of No. 5, and up to 6mm. in the case of No. 6, with a strong nerve along or near the lower margin, and a finer one concave to it above; leaflets four to seven and rarely eight pairs; rachis 6mm. to 1.6cm.

Nos. 7 and 8. These may be phyllodes, or abruptly bipinnate, petiole from 2.3 to 5.2cm. long, and up to 1.5cm. broad, usually with two longitudinal veins, the lower

one the more prominent and not far from the lower margin, the upper vein not always reaching the apex, but sometimes terminating in several veinlets, pilose to hirsute, particularly along the edges, the margins nerve-like; leaflets five to seven pairs; rachis 1 to 1.7cm.

Nos. 9 to 12. Obliquely ovate somewhat falcate phyllodes, tomentose especially towards the base, with usually three prominent nerves starting from the lower margin at the base but not confluent at the apex.

BIPINNATÆ—(Botryocephalæ).

ACACIA CARDIOPHYLLA A. Cunn. Seeds from Wyalong, New South Wales. (Plate XV, Numbers 1 to 3.)

Seeds black, oblong, apex rounded, 5 to 6mm. long, 2.5mm. broad, 1.5 to 2mm. thick.

Hypocotyl terete, brownish-pink to brownish-red above soil, 1.5 to 2.5cm. long, 1 to 2mm. thick at base, 0.7 to 1mm. at apex.

Cotyledons sessile, auricled, oblong, apex rounded, about 7mm. long, 3mm. broad, upper side green to brownish-green and brown, underside from yellowish-green to brown and brownish-red, sometimes with a raised centre line, becoming horizontal, revolute and cylindrical in a few days.

Stem terete, hirsute to pubescent, greyish-green. First internode 0.5mm.; second 1 to 2mm.; third 2 to 4mm.; fourth 3 to 7mm.; fifth to sixth 4mm. to 1cm.; seventh to eighth 6mm. to 1.2cm.

Leaves—No. 1. Abruptly pinnate, petiole 2 to 3mm.; leaflets three to five pairs, oblong-acuminate, 5 to 6mm. long, 1.5 to 2mm. broad, upper side green, underside paler; rachis 6 to 9mm., with terminal seta.

No. 2. Abruptly bipinnate, rarely with two pairs of pinnæ, petiole 4 to 8mm., with terminal seta; leaflets three to seven pairs; rachis 3mm. to 1cm., with terminal seta.

In one case No. 2 appeared as an apparent tripinnate leaf, but with the terminal seta present.*

No. 3. Abruptly bipinnate, often twice pinnate, common petiole up to 1.2cm., pilose; leaflets up to nine pairs on the terminal pair of pinnæ; rachis 7mm. to 1.5cm.; stipules about 1mm. long.

Nos. 4 and 5. Abruptly bipinnate, with from two to four pairs of pinnæ, common petiole 7mm. to 3cm., hirsute; leaflets five to eleven pairs, oblong-acuminate to sometimes ovate, the apical pair obovate, mucronate, 2 to 4mm. long, 0.7 to 2mm. broad, venation distinct on underside, the margins ciliate; rachis up to 1.8cm.

Nos. 6 to 9. Abruptly bipinnate, with from three to eleven pairs of pinnæ, common petiole 1.2 to 4.5cm., hirsute; leaflets six to thirteen pairs; rachis up to 1.5cm.

Leaf No. 14 may have up to seventeen pairs of pinnæ, leaflets up to twelve pairs, ovate, 1.5 to 2mm. long, 0.6 to 1mm. broad. A mature plant may have up to twenty-one pairs of pinnæ, and sometimes fifteen pairs of leaflets.

BIPINNATÆ—(Pulchellæ).

ACACIA GILBERTI Meissn. Seeds from Western Australia (E. E. Pescott). (Plate XV, Numbers 4 to 6.)

Seeds shiny black to brownish-black, oval to oblong-oval and ovate, about 4mm. long, 2 to 2.5mm. broad, 1.5mm. thick.

Hypocotyl terete, red above soil, 1.6 to 3.2cm. long, about 1.5mm. thick at base, 0.5 to 0.7mm. at apex.

* See Proc. Roy. Soc. N.S.Wales, 1917, Vol. LI., p. 393.

Cotyledons sessile, oblong to oblong-oval, 5 to 6mm. long, 3mm. broad, upper side green, under side yellowish-green to pinkish-green and brownish-red, remaining erect and soon falling.

Stem at first angular, becoming terete, greyish-brown to reddish-brown, glabrous. First internode 0.5mm.; second to fourth 3mm. to 1.6cm.; fifth to sixth 4mm. to 1.7cm.; seventh to tenth 6mm. to 2.2cm.

Leaves—No. 1. Abruptly pinnate, forming an opposite pair, petiole 3 to 7mm., glabrous; leaflets two pairs, oblong-acuminate to obovate—lanceolate, 4 to 9mm. long, 2 to 3mm. broad, upper side green, under side paler; rachis 2 to 3mm., with terminal seta.

No. 2. Abruptly bipinnate, petiole up to 1.1cm., with terminal seta; leaflets two to three pairs, oblong-acuminate to obovate-lanceolate; 4 to 9mm. long, 2 to 4mm. broad; rachis 5mm. to 1cm., with terminal seta.

Nos. 3 and 4. Abruptly bipinnate, petiole 4 to 8mm., sometimes with gland at base of pinnæ, glabrous; leaflets three to five pairs; rachis 1 to 2.2cm.

Nos. 5 to 8. Abruptly bipinnate, petiole 5 to 8mm., usually with gland at base of pinnæ; leaflets three to seven pairs, obovate-lanceolate, up to 1.1cm. long, 4mm. broad; rachis 7mm. to 3.5cm.

Nos. 9 and 10. Abruptly bipinnate, sometimes with two pairs of pinnæ, common petiole up to 2cm., with a gland at the base of the first and sometimes the second pair of pinnæ; leaflets five to six pairs; rachis 1.5 to 2.8cm.

On a plant one foot high there may be a few leaves with three pairs of pinnæ, and a leaflet may be rarely 1.6cm. long, and 9mm. broad.

In one case an apparent tripinnate leaf was noticed, but the terminal seta was present.

EXPLANATION OF PLATES.

PLATE XII.

Acacia anceps DC.

1. Cotyledons. Yorkes Peninsula, South Australia, (Dr. R. H. Pulleine).
2. Seeds.
3. Pinnate leaf, bipinnate leaves and phyllodes.

Acacia falciformis DC.

4. Cotyledons. Jenolan Caves, N.S. Wales.
5. Pinnate leaf, bipinnate leaves and phyllodes.
6. Portion of pod and seeds.

Acacia notabilis F.v.M. var.

7. Cotyledons and pinnate leaf. Mount Babbage, Flinders Range, South Australia, (Dr. W. G. Woolnough).
8. Pinnate leaf, bipinnate leaf and phyllodes.
9. Portion of pod and seeds.

Acacia ligulata A. Cunn.

10. Cotyledons and opposite pair of pinnate leaves. Botanic Gardens, Sydney, (J. H. Maiden).
11. Opposite pair of pinnate leaves, bipinnate leaves and phyllodes.
12. Pod and seeds.

PLATE XIII.

Acacia leptopetala Benth.

1. Cotyledons and opposite pair of pinnate leaves. Nindigully via Thallon, southern Queensland, (Miss I. Tosh).
2. Pinnate leaves (detached), bipinnate leaves, and phyllodes.
3. Pod and seeds.

Acacia complanata A. Cunn.

4. Cotyledons and pinnate leaf. Eidsvold, Queensland, (Dr. T. L. Bancroft).
5. Pinnate leaf, bipinnate leaves and phyllodes.
6. Seeds.

PLATE XIV.

Acacia doratoxylon A. Cunn.

1. Cotyledons and pinnate leaf. Wyalong, N.S. Wales.
2. Pinnate leaf, bipinnate leaves and phyllodes.
3. Pod and seeds.

Acacia humifusa A. Cunn.

4. Cotyledons and pinnate leaf. Stanley Island, Flinders Group, north Queensland, (Charles Hedley).
5. Pinnate leaf, bipinnate leaves and phyllodes.
6. Pod and seeds.

PLATE XV.

Acacia cardiophylla A. Cunn.

1. Cotyledons and part of pinnate leaf. Wyalong.
2. Pinnate leaf and bipinnate leaves.
3. Pod and seeds.

Acacia Gilberti Meissn.

4. Cotyledons. Western Australia, (E.E. Pescott).
 5. Opposite pair of pinnate leaves and bipinnate leaves.
 6. Seeds.
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Cambage, Richard Hind. 1924. "Acacia seedlings, Part X." *Journal and proceedings of the Royal Society of New South Wales* 58, 213–229.

<https://doi.org/10.5962/p.359879>.

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