

grass downs. Also in N.T., W.A., Indonesia and southern Asia; widespread in Africa.

*Notes:* A palatable species with high content of crude protein. Overseas work shows it can be quite highly productive. Seed production difficult due to uneven ripening and shedding. Nodulates, self- or cross-pollinating.

*References:* 3, 16, 17, 21, 46, 50, 90, 132, 136, 141, 146, 147, 148, 155, 168, 208, 228, 256.

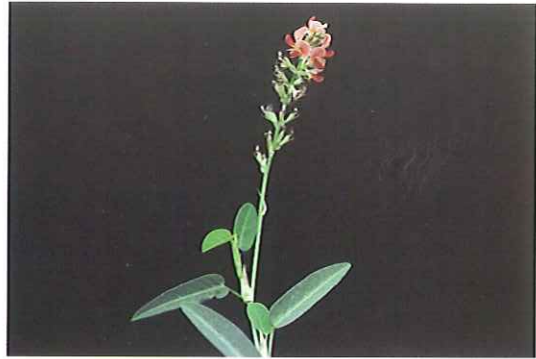
*Alysicarpus vaginalis*

(figure 2E)

Alyce clover

Erect or spreading perennial herb with stems to 0.6m long. Stems hairless or sparsely covered with loosely adpressed hairs. Stipules 5-12mm long, 1-1.5mm wide at the base, papery, more or less adpressed, persistent. Petiole 4-12mm long, stipels minute. Leaflets 5-50mm long, 3-20mm wide, very variable in shape even within the one plant, the lower ones shorter and rounder, the upper ones more elongate, commonly broadest about the mid-point, rounded towards the base and rounded or tapering towards the minutely mucronate tip, sparsely covered with adpressed hairs on the lower surface.

Inflorescence a dense 20-90mm raceme borne on a 5-40mm terminal or leaf-opposed peduncle. Flowers in pairs, each on a 0.5-2mm pedicel within the axil of a broad 3-8mm deciduous bract. Calyx 3.5-6mm long, the two dorsal sepals joined for  $\frac{3}{4}$  their length, the sepals otherwise joined for less than  $\frac{1}{2}$  their length, the teeth not overlapping at the base. Standard pink, c. 5mm tall, 5mm wide. Wings c. 5mm long, orange,



*Alysicarpus vaginalis*, Rockhampton, 23°38'S, 150°39'E, Cult.

becoming dark purple, the same length as the pink keel (yellow-, orange- and red-flowered plants have also been collected in Queensland).

Pod 5-25mm long, c. 2mm wide, with 2-7 articles, well exerted from the calyx, covered with minute hooked hairs, not constricted between the articles which are inconspicuously and reticulately ridged, dark brown and breaking up at maturity. Seeds c. 2mm long, 1.5mm wide, kidney-shaped, flattened, yellow sparsely flecked with brown.

*Distribution:* Co., Lei., N.K., P.C., S.K. Also N.T. A native species commonly found in damp situations. Also widespread in tropical Africa, southern Asia, Indonesia and P.N.G.

*Notes:* Readily eaten by cattle and horses and used overseas in pasture improvement. A potentially productive species in the N.T. Nodulates, self-pollinating.

*References:* 3, 12, 16, 17, 21, 46, 50, 70, 121, 136, 141, 146, 155, 168, 228, 306.

## *Aotus*

Shrubs with simple alternate or whorled leaves without stipules or stipels. Flowers largely yellow. Bracteoles lacking. Stamen 10, the filaments free. Pods containing 2 seeds. An endemic Australian genus.

### *Key to species*

- |   |                     |
|---|---------------------|
| 1. Upper leaf surface covered with white hairs  | <i>A. mollis</i>    |
| Upper leaf surface hairless or almost hairless  | 2                   |
| 2. Standard all yellow  | <i>A. lanigera</i>  |
| Standard yellow, with red or purple markings  | 3                   |
| 3. Stems covered with rust-coloured hairs, keel yellow (coastal wallum distribution)    | <i>A. ericoides</i> |
| Stems covered with white, silky hairs, keel purple (inland, granite or sandstone areas) | <i>A. subglauca</i> |

*Aotus ericoides*

Common aotus

Woody shrub to about 2m tall, with stems densely covered with minute usually rust-coloured hairs. Leaves in irregular whorls of 3, or paired or single, intervals between nodes usually shorter than the leaves. Petiole c. 1mm long. Leaf blade 5-20mm long, c. 1mm wide, the margins parallel, rolled downward, hairless except for adpressed hairs along the mid-rib on the underside.



*Aotus ericoides*, Coolum, 26°31'S, 153°05'E.

Flowers single or several in upper leaf axils, each borne on a 1-2.5mm pedicel within the axil of a deciduous bract. Calyx 3-4mm long, densely covered with short adpressed hairs, the two dorsal sepals joined for  $\frac{3}{4}$  their length, the teeth blunt, ending abruptly, the sepals otherwise joined for c.  $\frac{1}{2}$  their length. Standard c. 5mm tall, 7mm wide, yellow, strongly veined on the back with reddish purple. Wings c. 7mm long from base of calyx, yellow, the same length as the keel.

Pod 4-6mm long, 3-4mm wide, flattened, borne on a short stalk above the calyx, covered with white silky hairs, dark brown when ripe. Seeds kidney-shaped, flattened, 2.5mm long, 1.5mm wide, purplish black, the surface dull.

*Distribution:* Mo., P.C., W.B. Also in N.S.W., Vic., Tas., S.A. A relatively common plant on infertile sandy coastal soils of south-east Queensland.

*Notes:* Of no grazing significance.

*References:* 23, 26, 97, 100, 111, 154, 193, 283, 287, 298.

*Aotus lanigera*

Woody shrub up to 1.5m, rarely to 3m tall.

Stems densely covered with long, spreading, usually dark-coloured hairs. Leaves alternate or in irregular pairs or whorls of 3. Petioles 1-2mm long. Leaf blades 6-20mm long, 1-2.5mm wide, the margins rolled downwards, parallel, or more often broadest below the mid-point and tapering to the tip, hairless or with occasional long hairs on the upper surface, hairy along the mid-vein on the lower surface.

Flowers 1-several in upper leaf axils, each borne on a 1-2mm pedicel within the axil of a deciduous bract. Calyx 3-5mm long, densely covered with long, spreading hairs, the 5 sepals joined for about  $\frac{1}{2}$  their length. Standard yellow, c. 8mm tall, 7mm wide. Wings 8-13mm long, yellow, the same length as the yellow keel.

Pod 7-8mm long, 5mm wide, flattened, densely covered with 2mm long, white hairs. Seeds kidney-shaped, flattened, black, the surface dull.

*Distribution:* D.D., Mo., P.C., W.B. Also N.S.W. Found commonly in wallum heath and also near Wyberba (D.D.) on infertile sandy soils.

*Notes:* Of no grazing significance. Nodulates.

*References:* 3, 17, 23, 26, 50, 97, 100, 154, 193, 287, 298, 324.

*Aotus mollis*

Woody shrub to 1m tall with slender branches, often arching, densely covered with a mat of short often rust-coloured hairs. Leaves simple, usually in whorls of 3, stipels lacking. Petiole c. 1mm long. Leaves 5-20mm long, 1-2mm wide, the margins rolled downward, more or less parallel or tapering to either end, densely covered with a mat of short hairs on both surfaces, the lower surface rust-coloured.

Flowers in groups of 1-4 in upper leaf axils, each borne on a 1mm pedicel within the axil of a deciduous bract. Calyx densely hairy, c. 3mm long, the two dorsal sepals joined for  $\frac{3}{4}$  their length, the sepals otherwise joined for a little over  $\frac{1}{2}$  their length. Flowers about 8mm long, the standard yellow, dark purple along the veins. Wings yellow, keel dark reddish purple.

Pod c. 6mm long, 4mm wide, flattened, densely covered with white hairs, shortly and indistinctly stalked above the calyx, ginger-brown when ripe. Seeds c. 2.5mm long, 1.5mm wide, kidney-shaped, flattened, black, the surface textured and shiny.



*Distribution:* D.D., Lei., Ma., Wa. Also N.S.W., infertile soils developed on sandstone.

*Notes:* Of no grazing significance.

*References:* 17, 26, 287, 298.

### *Aotus subglauc*

Wild wallflower

An open woody shrub to c. 1m tall. Branches more or less erect, densely covered with short hairs. Leaves dark green, usually in whorls of 3. Petioles c. 1.5mm long. Leaf blades 7-30mm



*Aotus subglauc* var. *subglauc*, Helidon, 27°31'S, 152°10'E.

long, 1-3mm wide, the margins rolled downwards, parallel, hairless or with sparse hairs on the upper surface, densely hairy along the mid-vein on the lower surface.

Flowers borne singly or in pairs in upper leaf axils, hence resulting in clusters of up to 6 flowers in a whorl, each flower borne on a 1.5mm pedicel within the axil of a deciduous bract. Calyx c. 4mm long, densely covered with long, white hairs, the 5 sepals similarly joined for more than ½ their length, the teeth similar, pointed. Flowers 5-9mm long, the standard yellow, deep purple-black on the centre back and along the veins, c. 6mm tall, 8mm wide. Wings yellow, the same length as the purple-black keel.

Pod 5-7mm long, 4mm wide, flattened, shortly stalked above the calyx, densely covered with long, white hairs, ginger-brown when ripe.

#### *Key to varieties*

Leaves 1-3mm wide	var. <i>subglauc</i>
Leaves c. 1mm wide	var. <i>filiformis</i>

*Distribution:* D.D., Lei., Ma., Mo. Also N.S.W.; occurs on infertile soils developed on granite or sandstone.

*Notes:* Of no grazing significance. Occasionally yellow-flowered plants have been collected.

*References:* 26, 193, 287, 298.

## *Arachis*

Herbaceous annual. Leaves pinnate, with 4 leaflets, lacking stipels. Pod buried underground after flowering, indehiscent.

### *Arachis hypogaea*

Pea-nut

Bushy annual to about 0.5m tall. Stems sparsely covered with 2mm spreading hairs. Stipules 20-40mm long, attached to the petiole for the lower 8-15mm, tapering to a fine point, sparsely hairy along the margins. Petiole 25-70mm long, rachis 5-15mm long, both sparsely covered with spreading hairs. Leaflets dark green, 15-55mm long, 15-30mm wide, the lower pair slightly smaller than the upper, broadest above the mid-point, more or less tapering to the base and rounded at the tip, hairless except for a few hairs along the margins, mucronate.

Flowers solitary or with two in a spike in leaf axils. Bracteoles narrow. Calyx tube long and



*Arachis hypogaea*, Dunk Is., 17°55'S, 146°09'E.

slender, the four upper sepals joined for most of their length, the lower tooth distinct. Petals