RACOSPERMA DELTOIDEUM (CUNN. EX. G.DON) PEDLEY (LEGUMINOSAE: MIMOSOIDEAE) AND RELATED SPECIES IN NORTHERN AUSTRALIA

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Summary

New combinations are Racosperma deltoideum, R. adenogonium, R. froggattii, R. stipulosum and R. sublanatum, based on Acacia deltoidea Cunn. ex G.Don, A. deltoidea var. pungens Benth., A. froggattii Maiden, A. stipulosa F.Muell. and A. sublanata Benth., respectively. All species are described. Notes on their geographic ranges and habitats in the extreme north of Western Australia and in the Northern Territory and a key to their identification are given. A. deltoidea is lectotypified.

If the treatment of Acacia Miller sens. lat. proposed by Pedley (1986) is accepted then species currently referred to Acacia subg. Phyllodineae Seringe will have to be transferred to Racosperma Martius. Though it would be desirable to make the transfers en masse, practical considerations dictate a piecemeal approach. As the results of revisionary studies are published individual authors will have to decide whether to include Racosperma in Acacia or to treat it as a distinct genus. Having argued for the latter course, I therefore make new combinations under Racosperma. Names are available for all the described taxa under Acacia, though in the case of one species only at varietal rank.

The species treated here constitute, with *Racosperma pravifolium* (F.Muell.) Pedley and *R. amblygonum* (Cunn. ex Benth.) Pedley, the Triangulares group of *Acacia* section *Plurinerves* in the classification of Pedley (1978). They have usually setaceous stipules and plurinerved broadly falcate-ovate or triangular phyllodes. The flowers are in globular heads, rarely spikes, on peduncles solitary in the axils. Maslin (1978) dealt with the 4merous members of the Triangulares group of *Acacia* section *Phyllodineae* and summarised the various ways Bentham had treated *Triangulares*. The type species of Bentham's original *Acacia* subseries *Triangulares* is the uninerved *Acacia biflora* R.Br. (syn. *A. triangularis* Benth.) (Pedley 1980). If the plurinerved species are considered to constitute a subseries different from the subseries *Triangulares* with uninerved species, then it has no legitimate name. No attempt will be made to name or typify it here. A detailed infrageneric classification of *Racosperma* would be of considerable value and interest but requires an appraisal of approximately 750 species. Little can be achieved in taking a group of only five of these in isolation.

Relationships of *R. deltoideum* and its immediate allies are not clear. The lobing of the calyxes and the striate corollas of some species, and the stipules of some suggest an affinity with species of *Racosperma* section *Lycopodiifolia*. The calyxes of *R. adenogonium* and *R. deltoideum* are similar, for example, to those of *R. lycopodiifolium* (Cunn. ex Hook.) Pedley and *Acacia adoxa* Pedley (see Fig. 1d & g, Pedley 1972). The characters may be the result of convergent evolution rather than an indication of true affinities but, as the affinities of the *Lycopodiifolia* are not at all obvious, the possibility of a relationship should not be dismissed.

Maiden (1920) when describing Acacia froggattii referred A. stipulosa to A. deltoidea and accepted A. luehmannii. Bentham (1864) had identified some specimens of Robert Brown, allegedly collected in southern Australia, as A. sublanata, to which he referred A. pravifolia. Court (1972) pointed out that Brown's specimens came from northern Australia and that A. sublanata and A. luehmannii were conspecific.

Distributions of species are given using the numbers of the map sheets of the 1:250 000 Topographic Map Series R502 produced jointly by the Divison of National Mapping and the Royal Australian Survey Corps.

Key to Species

 Leaves crowded on branchlets, narrowly oblong and obliquely curved or somewhat triangular-ovate, the upper margin curved but not abruptly so
Leaves not crowded, triangular, the lower margin ± straight, the upper with an abrupt curve or angle
 Corolla 2.7-4 mm long, calyx 2.3-3 mm long, both irregularly lobed with up to 11 lobes
Corolla less than 2 mm and calyx less than 1 mm long, regularly 5- merous
 Branchlets with indumentum of white crisped hairs to 1 mm long. Pods linear, narrowed between the seeds, to 12.5 cm long, glabrous. Calyx almost truncate
Branchlets with straight hyaline hairs and shorter glandular ones. Pods not narrowed between the seeds, to 6 cm long, with some long multicellular hairs. Calyx with linear lobes as long as or up to twice as long as the corolla
 4. Phyllodes with gland at the angle conspicuously extruded, hairs not glandular. Calyx lobes with spreading hairs along the whole length. Seeds ±longitudinal in the pod
Phyllodes with gland at the angle usually not conspicuously extruded, some hairs glandular. Calyx lobes with glandular hairs at tip only. Seeds transverse in pod 1. R. deltoideum
1. Racosperma deltoideum (Cunn. ex G.Don) Pedley, comb. nov. Acacia deltoidea Cunn. ex G.Don. Gen. Hist. 2: 401 (1832): Bentham. El. Austral
Acucia achonaca Cann. ex G.Don, Och. 111st. 2. 401 (1852), Dentham, 11. Austral

Acacia deltoidea Cunn. ex G.Don, Gen. Hist. 2: 401 (1832); Bentham, Fl. Austral.
 2: 378 (1864). Lectotype (designated here): Montague Sound, 3rd Voyage of Mermaid, in 1820, *Cunningham* 293 (holo: BM *n.v.*; iso: K, PERTH, photographs of both).

Shrub to 3 m high. Branchlets with indumentum of gland-tipped hairs and longer (to 0.4 mm) straight hyaline hairs. Stipules 1.5 mm \times ca 0.5 mm, indurated, acute with a distinct midrib, often horizontally orientated. Phyllodes \pm sessile, triangular, the lower margin usually only slightly curved, produced into a pungent point, the upper with a definite angle, a gland, usually inconspicuous and rarely projecting, at the angle, rather thick, 3 longitudinal veins and some coarsely anastomosing ones not conspicuous, truncate or slightly concave on the margin between the gland and the point, 3-12(-20) mm \times 1.6-5.6 mm, 1-3.5 times as long as wide, measured across the phyllode from the gland, the point 0.4-1.2 mm long, moderate indumentum similar to that of the stem. Heads of 30-40 flowers on peduncles 6-9(-16) mm long, single in the axils, the receptacle sometimes slightly elongate, pubescent; bracteoles long-pointed, bent a little below the middle sometimes projecting beyond the buds. Flowers 5-merous. Calyx 1 mm long, the tube ribbed, the ribs produced into lobes about as long as the tube, membranous between the ribs, hairs \pm restricted to the tips of the lobes. Corolla *ca* 1.6 mm long, with hyaline hairs in the upper half. Stamens 3.5 mm long. Ovary minutely pubescent. Pod 6-8-seeded, flat, oblong, to 4 cm long, 8-10 mm wide on a stipe 4 mm long, indumentum of moderately dense, stiff, multicellular hairs to 0.9 mm long and much finer ones *ca* 0.3 mm long. Seeds arranged transversely, oblong, *ca* 5 mm \times 2.5 mm; areole central closed, *ca* 2 mm \times 0.4 mm; funicle cream, thickened and folded twice beneath the seed. Fig. 2J-N.

Specimens examined. Western Australia. Above headwaters of Helby River, 14°41'S, 128°04'E, Mar 1978, Hartley 14819 (BRI,CANB,PERTH); Euro Gorge, Drysdale River Nat. Park, 15°08'S, 126°44'E, Aug 1978, Kenneally 4363 (PERTH); Boomerang Bay, Bigge Is., Jun 1972, Marchant 72/116 (PERTH); Gorge, Lawley River, Jul 1921, Gardner 996 & 1496 (PERTH), & s.n. (NSW); Montague Sound, Sep 1820, Cunningham (K,PERTH, photo); Boongaree Is., S side of Prince Frederick Harbour, 15°45'S, 125°10'E, Jul 1973, Wilson 11372 (PERTH); Talbot

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Bay, 23 km SE of Cockatoo Is., 16°15'S, 123°44'E, May 1983, Fryxell & Craven 3893 (BRI,CANB); Hidden Is., Buccaneer Arch., 16°15'S, 123°29'E, Jun 1982, Kenneally 8365 (PERTH); Sunday Is., Buccaneer Arch., 16°25'S, 123°11'E, Jun 1982, Kenneally 8302 (PERTH), Nov 1906, ex Herb. Fitzgerald (NSW); Lachlan Is., Buccaneer Arch., 16°38'S, 123°29'E, Jun 1982, Kenneally 8326 (BRI, PERTH); Stewart River valley, ca 82 km NNE of Derby, 16°34'S, 123°29'E, Jul 1977, Telford 6310 & Butler (NSW); Manning Gorge, ± 16°39'S, 125°55'E, Jun 1977, Maloney (NSW), George 15176 (PERTH); 40km SW of 'Mt Barnett' Stn, Phillips Range, 16°55'S, 125°48'E, Sep 1976, Guymer 601 (NSW); Plain Creek, W of 'Beverley Springs' H.S., Aug 1974, George 12228 (PERTH), Kenneally 1988 (PERTH); Fitzroy River, in 1879, Forrest (NSW,PERTH); Kings Sound, in 1869, Hughes (MEL,NSW); N.W. Coast, Cunningham (K).

Distribution: Western Australia in Gardner Botanical District, on shallow soil derived from limestone (1:250 000 map sheets: D51-12,16; D52-9,10; E51-3,4).

Lectotypification of the name Acacia deltoidea is necessary. Don's description of the species was probably based on a number of Cunningham's collections at the British Museum (Natural History), including one now referred to Racosperma adenogonium. As the protologue could apply to either species the lectotype is chosen to ensure that the generally accepted application of the name Acacia deltoidea is unchanged. The Forrest specimen cited above, which originated from the National Herbarium of Victoria (MEL), was determined there as Acacia stipulosa. The determination was later confirmed by C.A.Gardner who annotated the PERTH sheet 'Acacia stipulosa FvM/Agrees with the type'. This specimen or a duplicate may have been the source of the widespread belief that A. stipulosa and A. deltoidea on the basis of the specimen 'comm. Dr.F.Stoward'. Stoward who was botanist with the Department of Agriculture of Western Australia from 1911 to 1917 (Hall 1978) probably passed on to Maiden part of the specimen received from Melbourne.

Gardner 996 & 1496 appear to constitute a single collection. They were collected at the same place on the same day. Their phyllodes (2 cm long) are about twice as large as those of other specimens but certainly should be referred to *R. deltoideum. Kenneally* 8365 and *Fryxell & Craven* 3893 have a conspicuous projecting gland similar to that of *R. adenogonium*, but the floral structure and indumentum suggest that they should be placed in *R. deltoideum*. Another collection, *Fitzgerald* 1421 (Edkins Range, Aug 1905 – see Fig. 1J & K) is more aberrant. Its phyllodes are small, though within the normal size range, with a somewhat projecting gland, and can scarcely be described as triangular. Because of its glandular hairs it is placed in *R. deltoideum*. Its flowers are too immature to be of value in identification.

2. Racosperma adenogonium Pedley, nom. et stat. nov.

Acacia deltoidea var. pungens Bentham, London J. Bot. 1: 333 (1842). Type: Western Australia: Greville Is., Cunningham (holo: K).

Dense shrub to 2 m high. Branchlets with indumentum of moderate to dense spreading hairs, sometimes with some shorter glandular hairs, occasionally the indumentum becoming sparse and the glandular hairs conspicuous. Stipules indurated, curved upwards, 2.5-5.5 mm long, united at the base sometimes for a quarter of their length. Phyllodes \pm sessile, similar in shape to those of *R. deltoideum* but not as thick, the gland at the angle often conspicuously extruded, 3-6 longitudinal nerves prominent, scarcely any anastomoses between them, 3-15 mm × 1.6-7 mm, 1.5-3 times as long as wide, the point 0.5-2 mm long, indumentum of non-glandular hairs densest on veins. Heads of 40-60 flowers on peduncles 5-10 mm long, single in the axils, receptacle pubescent; bracteoles bent about one-third their length, narrowed into a long point with long hairs (0.2 mm long). Flowers 5-merous. Calyx 0.6-0.8 mm long, the tube glabrous, membranous with distinct ribs, the ribs produced into lobes as long as, or twice as long as the tube, hispidulous with hairs *ca* 0.3 mm long. Corolla 1.6-1.7 mm long, lobed to the middle, the lobes with a distinct midrib and hairs in the upper half. Stamens *ca* 3.5 mm long. Ovary minutely pubescent. Pod to *ca* 10-seeded, \pm flat though raised over the seeds, to 6 cm long, 8 mm wide, indumentum of sparse erect multicellular hairs to 0.7 mm long and denser finer ones about one-third as long. Seeds arranged \pm longitudinally, oblong, 5.5-6 mm \times 3-3.5 mm; areole central, closed, pale, 2-3 mm \times 0.6-0.8 mm; funicle cream, markedly thickened, folded twice beneath the seed. **Fig.1E-I.**

Specimens examined. Western Australia. Camden Harbour, *Maitland Brown* (MEL); Unwin Is., Brunswick Bay, 15°18'S, 124°48'E, Jul 1973, *Wilson* 11445 (PERTH); Augustus Is., 15°25'S, 124°35'E, May 1972, *Wilson* 10702 & s.n. (sterile) (PERTH); Regents River, Voyage of Bathurst, in 1821–2, *Cunningham* 323 (BM, *n.v.*, PERTH, photo); Gibb River road, \pm 17 miles [27 km] N from turn-off to 'Mt House' Homestead, Jul 1974, *Willis & Beauglehole* (MEL,NSW,PERTH).



Fig. 1. Racosperma stipulosum: A. flowering branchlet $\times 1$. B. flower $\times 12$. C. phyllode and stipules $\times 6$. D. pod $\times 1$ (all Latz 5329). R. adenogonium: E. flowering branchlet $\times 1$. F. flower $\times 12$. G. pod $\times 1$. H. seed $\times 4$. I. phyllode $\times 6$. (all Kenneally 1988). R. deltoideum (aberrant individual): J. branchlet $\times 1$. K. phyllode $\times 6$ (both Fitzgerald 1421).

Distribution: Western Australia in Gardner Botanical District, on sandy soil, usually on sandstone (1:250 000 map sheets: D51-16; E51-4).

3. Racosperma stipulosum (F.Muell.) Pedley, comb. nov.

Acacia stipulosa F.Muell., J. Proc. Linn. Soc., Bot. 3: 119 (1859). Type: Upper Victoria River, Mueller 71 (holo: MEL; iso: K).

Intricately branched shrub to 3 m high. Branchlets with indumentum of stiff spreading multicellular hairs and shorter gland-tipped ones. Stipules about two-thirds as long as the phyllodes, indurated, subulate, united for one-third to half of their length. Phyllodes crowded, \pm sessile, \pm triangular, the lower margin straight, produced into a pungent point, the upper curved or angled with a gland about midway or at the angle, sometimes projecting, thick, 4–6 longitudinal nerves apparent, 6–8 mm × 3–5 mm, 1.5–2.5 times as long as wide, the point 0.5–2 mm long, sparse indumentum similar to that of the

stems. Heads of 30-40 flowers on peduncles about as long as the phyllodes, single in the axils; receptacle pubescent; bracteoles long-pointed, linear lanceolate, bent somewhat about the middle, projecting slightly beyond the open flower. Flowers with irregularly lobed calyx and corolla. Calyx 2.3-3 mm long, cartilaginous, ribbed, with stiff \pm spreading hairs *ca* 0.2 mm long particularly in upper half, lobes 8-11, 0.5-1 mm long. Corolla 2.7-4 mm long with 7-8 uninerved lobes 0.6-0.8 mm long, up to half as long again as the calyx, with short stiff spreading hairs on the back of the lobes. Stamens *ca* 4.5 mm long. Ovary glabrous. Pod up to 10-seeded, flat but raised slightly over the seeds, straight, obliquely veined, up to 8 cm long, 5-6 mm wide, with straight multicellular gland-tipped hairs, many of them 3 mm long. Seeds arranged obliquely, *ca* 4 mm long, 2 mm wide; areole closed, central, \pm square with a pale pleurogram; funicle folded 2-3 times, thickened into a basal aril. **Fig. 1A-D**.

Specimens examined. Northern Territory. VICTORIA RIVER DISTRICT: 74 km SW of 'Victoria River' Homestead, 16°47'S, 130°39'E, Jun 1978, Latz 5439 (BRI, PERTH); 26 miles [42 km] S of Hookers Creek-Birrindudu-Tanami Junction, Jul 1973, Maconochie 1741 (BRI, CANB, K, PERTH); 101 km from Tanami towards 'Gordon Downs', 19°26'S, 129°05'E, Aug 1971, Gittins 2375 (BRI, MEL); 25 miles [40 km] S of Hookers Creek Mission, Jun 1952, Perry 2916 (CANB); 34 miles [54 km] SW of Hookers Creek, Jul 1956, Chippendale NT 2257 (CANB, MEL); 37 miles [59 km] SW of Hookers Creek, May 1971, Maconochie 1120 (MEL).

Distribution: Northern Territory in Victoria River District, on shallow soil on sandstone (1:250 000 map sheets: E52–4,12,15).

4. Racosperma froggattii (Maiden) Pedley, comb. nov.

Acacia froggattii Maiden, J. & Proc. Roy. Soc. New South Wales 53: 204 t.14 (8-16) (1920). Type: Woollybutt Creek near Phillips Range, May 1905, *Fitzgerald* 981 (iso: MEL,PERTH).

Shrub to ca 1 m high. Branchlets terete with indumentum of moderately dense spreading hyaline hairs to 0.3 mm long, most of them gland-tipped. Stipules ca 1 mm long, brown setaceous with a few long hairs. Phyllodes crowded, often subfascicular on the branchlets, ± sessile, narrowly oblong and obliquely curved or somewhat triangular-ovate, contracted into a short point, the upper margin curved with a small gland, with a narrow rim, at about the middle, but no abrupt angle at the gland, the margins nerve-like with about three other longitudinal nerves \pm conspicuous, 3.5-5.5 mm \times 1.2-2.6 mm, 1.2-3.3 times as long as wide, the point 0.5-0.7 mm long, moderate indumentum similar to that of the stems. Heads of 30-40 flowers on peduncles 1-1.5 cm long, single in the axils; bracteoles with long pointed narrowly ovate laminas at an angle to the claws, about as long as the buds. Flowers 5-merous. Calyx 0.8-1 mm long, the tube ribbed, the ribs produced into setaceous lobes about as long as the tube, hairs confined to the lobes. Corolla 1.4–1.5 mm long, thick, striate, with hyaline hairs on the lobes. Stamens ca 3.5 mm long. Ovary glabrous. Pod with about 5 seeds, slightly raised over the seeds, linear, curved, 3.5-4 cm long, 4-5 mm wide, indumentum of moderately dense multicellular glandular hairs to 1 mm long and finer ones to 0.3 mm long. Seeds arranged longitudinally, oblong-cylindrical ca 6 mm \times 2.5 mm; areole central, closed with a double pleurogram, $ca \ 2 \ mm \times 0.5 \ mm$; funicle whitish, thickened and folded twice beneath the seed. Fig. 2A-E.

Specimens examined. Western Australia. Artesian Ra. between Charnley River gorge and head of Walcott Inlet, Aug 1943, *Davis* (PERTH); Woollybutt Creek near Phillips Range, May 1905, *Fitzgerald* 981 (MEL, PERTH); 16 miles [26 km] SW of 'Mt House' Stn, Jul 1959, *Lazarides* 6450 (BRI,CANB,MEL,PERTH). Northern Territory. 5 miles [8 km] ENE of 'Coolibah' Stn, Aug 1949, *Perry & Lazarides* 2699 (BRI,CANB,MEL, NSW,PERTH); near Fitzroy east of Timber Creek, Jun 1977, *Beswick* B104 (BRI).

Distribution: Western Australia in Gardner Botanical District and the Northern Territory in the Victoria River District on shallow sandy soil derived from sandstone (1:250 000 map sheets D52–16; E51–4,8).

5. Racosperma sublanatum (Benth.) Pedley, comb. nov.

Acacia sublanata Benth. in Endlicher et. al., Enum. Pl.142 (1837); Court, Muelleria 2: 159 (1972). Type: Australia, Bauer Herb. Mus. Vind. 1837 (holo: K).
Acacia luehmannii F.Muell., Fragm. 11: 116 (1881), Iconog. Austral. Acacia, Decade 7 (1887). Type: Liverpool River, B.Gulliver (holo: MEL; iso: K).

Spindly shrub to 2.5 m high, often much shorter and compact, reported to be semiprostrate in exposed situations near the sea. Branchlets terete with indumentum of white crisped



Fig. 2. Racosperma frogattii: A. flowering twig (Perry & Lazarides 2699) \times 5. B. inflorescence \times 5. C. flower \times 6. D. pod \times 1, E. seed \times 4 (B,C,D,E Lazarides 6450). R. sublanatum: F. flowering branchlet \times 1. G. phyllodes \times 1. H. flower \times 6. I. pod \times 1 (all Maconochie 1592). R. deltoideum: J. flowering branchlet \times 4. K. flower \times 12. L. gland on phyllode \times 25. M. pod \times 1. N. seed \times 4. (J,K,L Kenneally 2081; M,N Kenneally 4363).

hairs to 1 mm long, occasionally dense and hiding the stems. Stipules setaceous, brown, 3-nerved at the base, 1(-2.5) mm long. Phyllodes sessile, deltoid, shining, glabrous or pubescent with hairs similar to those of the stem, 2.5-11 mm \times 1.5-9 mm, 0.9-1.4times as long as wide, the margins thickened, yellow, with 3-5 longitudinal nerves with some anastomoses between them, the lower margin straight or curved, produced into a point (0.5-)1-2 mm long, the upper margin \pm straight parallel to the stem then abruptly curved through more than 90° then straight again to the point, a small gland on the margin on or slightly below the abrupt curve. Heads usually of about 30 flowers but occasionally only 10 and rarely elongating into a dense spike ca 10 mm long, on peduncles with hairs similar to those of the stem, 7-10(-20) mm long; bracteoles bent in the middle, cuneate at the base with a point longer than the flower buds. Flowers 5-merous. Calyx 0.7–0.9 mm long, rather membranous but with 5 ribs extending into short obtuse lobes, glabrous or sometimes with some hairs on the margin of the lobes. Corolla 1.5-1.8 mm long, glabrous. Stamens ca 3.5 mm long. Ovary densely pubescent. Pod with ca 10 seeds, straight, linear, convex over the seeds, and somewhat narrowed between them, glabrous, 12.5 cm long, 4 mm wide. Seeds arranged longitudinally, oblong, ca 6 mm long, 2.5 mm wide; areole central, open, 4.5 mm × 1 mm; funicle whitish, thickened and folded 2-3 times beneath the seed. Fig. 2F-I.

Specimens examined. Northern Territory. 88 km from Pine Creek, UDP Falls road, Jul 1973, Gittins 2667 (BRI); Gorge near Plumtree Creek, ca 47 miles [75 km] ENE of Pine Creek, Mar 1965, Lazarides & Adams 171 (BRI,CANB,MEL); Deaf Adder Basin, Jun 1972, Schodde A79 (BRI,CANB); East Alligator River, 12°47'S, 133°21'E, Jul 1972, Lazarides 7647 (BRI,CANB); ca 16 km S of Oenpelli Mission, 12°29'S, 133°03'E, Jul 1973, Adams & Dunlop 2974 (BRI); 10 miles [16 km] W of Goomadeer turn, Oenpelli-Mangarida road, Jun 1974, Jacobs 1899 (CANB); 7 miles [11 km] E of Rum Bottle Creek, 12°04'S, 133°48'E, Jun 1972, Maconochie 1592 (BRI,CANB,MEL,PERTH); 5 miles [8 km] SW of BHP camp airstrip, 12°52'S, 135°15'E, Jun 1972, Maconochie 1489 (BRI,MEL,PERTH); 21 miles [33 km] E of Lake Evella, 12°45'S, 136°35'E, Jun 1972, Maconochie 1519 (BRI,MEL); Mt Saunders, Gove, Oct 1971, Hinz in NT 33630 (BRI,MEL); Yirrkala, 12°12'S, 136°47'E, Jul 1948, Specht 758 (BRI,CANB,MEL); Groote Eylandt, Jul 1948, Specht 668 (BRI).

Distribution: The extreme northern part of the Northern Territory on sandy soils, sometimes shallow, usually on sandstone but recorded also from coastal dunes $(1:250\ 000\ map\ sheets:\ D53-1,2,3,4,5,8)$.

Bentham (1864) referred Acacia pravifolia to A. sublanata and recorded it as 'South Coast, R.Brown'. Court (1972) clarified the matter after examining types and Brown material from northern Australia. A. pravifolia has straight hairs, smaller heads on shorter peduncles and obtuse broad-based bracteoles. In R. sublanatum there is considerable variation in the size of phyllodes from plant to plant but indumentum and floral characters show only a small range of variation, and there are no grounds for recognising infraspecific taxa.

The occurrence of plants with flowers in spikes rather than in heads is an example of how closely allied *Acacia* section *Plurinerves* and *A*. section *Juliflorae* are. These two sections have been combined as *Racosperma* section *Plurinervia* (Pedley 1986).

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