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Conostephium wonganense, *Dielsiodoxa altimontana* and *Styphelia blackallii* – three rare, new epacrids (Ericaceae: Epacridoideae) from Western Australia

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SHORT COMMUNICATION

Conostephium wonganense Hislop, *sp. nov.*

Typus: east of Konnongorring, Western Australia [precise locality withheld for conservation reasons], 13 September 2005, *M. Hislop* 3514 (*holo*: PERTH 07420463; *iso*: CANB, K, MEL, NSW).

Erect *shrubs* to *c.* 1.2 m high and 1.2 m wide, multi-stemmed at ground level with a fire-resistant rootstock. Young *branchlets* with a moderately dense to dense indumentum of patent to shallowly antrorse, straight or distinctly curved hairs, of mixed lengths, the longest to *c.* 1 mm long. *Leaves* antrorse, usually steeply so; apex long-mucronate, rather coarsely pungent, the mucro 0.6–0.9 mm long, straight to slightly inflexed; base cuneate or less often attenuate; petiole moderately well-defined, 0.4–1.0 mm long, usually sparsely hairy throughout; lamina usually linear, occasionally very narrowly elliptic or very narrowly triangular, 9–21 mm long, 1.0–2.3 mm wide, adaxially convex, margins strongly recurved to revolute, longitudinal axis ± straight; surfaces markedly discolorous; adaxial surface mostly glabrous or with a few hairs towards the base and about the apex, venation usually obvious, manifesting as sunken lines; abaxial surface much paler with 7–9 raised primary veins, ± openly grooved between, the midrib not differentiated, sparsely hairy throughout to ± glabrescent; margins ciliate with hairs to *c.* 0.5 mm long, although these often obscured by the revolute margins. *Inflorescence* axillary, pendulous or sub-pendulous; axis 2.2–3.0 mm long, hairy, in large part obscured by imbricate bracts. *Axis bracts* 5–10, grading upwards from depressed-ovate to broadly ovate, the two uppermost, 2.0–3.2 mm long, 1.5–3.0 mm wide. *Floral bracts* 3–4, broadly ovate, 3.0–5.4 mm long, 2.3–3.7 mm wide, obtuse, mucronate, often coloured dark purple towards the apex. *Bracteoles* ovate, 4.8–7.0 mm long, 3.0–3.8 mm wide, obtuse, mucronate; abaxial surface hairy with a dense indumentum of spreading hairs, mostly straw-coloured, but often becoming dark purple towards the apex, multi-veined and striate; adaxial surface glabrous; margins ciliate. *Sepals* ovate to narrowly ovate, 6.1–8.4 mm long, 2.7–3.5 mm wide, the apices grading from obtuse and mucronate in the outer sepals to subacute or acute in the inner; abaxial surface hairy with a dense indumentum of spreading hairs, mostly straw-coloured, often becoming dark purple towards the apex, multi-veined and striate; adaxial surface glabrous; margins ciliate with hairs to 0.2 mm long. *Corolla* shed soon after anthesis. *Corolla tube* ± actinomorphic, essentially fusiform, the widest part (the bulge) at *c.* the middle, 9.5–12 mm long, 2.8–3.5 mm wide, exposed portion dark purple; external surface glabrous or with a few appressed hairs,

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rugose in the coloured portion; internal surface densely hairy (with a mixture of antrorse and retrorse hairs) from the base of the lobes to the top of the ovary, the densest and longest hairs (1.0–1.5 mm long) arising from the tube below the bulge and coalescing into several ± well-defined longitudinal bands of hair, these overlapping with the base of the anthers. *Corolla lobes* white, erect basally and then spreading in the upper half, 0.4–1.0 mm long, 0.4–0.5 mm wide at base, internal surface glabrous apart from a few antrorse hairs towards the base, hairs not visible at the connivent bases of adjoining lobes. *Filaments* 1.7–2.0 mm long, 0.35–0.50 mm wide, flattened, hairy on the adaxial surface below the connective, the connective abruptly and prominently thickened, dark brown, attached *c.* 1/2 above anther base, adnate to tube at *c.* the middle. *Anthers* 3.0–4.1 mm long, the lobes 1/3–1/2 the length of the anthers. *Nectary* annular, very shallowly lobed, 0.1–0.2 mm long. *Ovary* ovoid to ± globose, 1.2–1.6 mm long, 1.1–1.6 mm wide, glabrous, 5-locular. *Style* 10.3–12.8 mm long, glabrous. *Fruit* broadly ovoid, 5.5–6 mm long and 5.5–6 mm wide (refer comment under notes below), apex obtuse, surface prominently rugose in dried specimens; endocarp ± smooth. (Figure 1A)

Diagnostic characters. *Conostephium wonganense* can be distinguished from all other members of the genus by the following character combination: inflorescence axis 2.2–3.0 mm long; upper corolla tube dark purple; internal corolla tube densely hairy (hairs longest about the base of the anthers), forming more or less well-defined longitudinal bands extending from the base of the bulge to a point adjacent to the top of the ovary; corolla lobes 0.4–1.0 mm long; filaments adnate to the tube at about the middle; anther connective abruptly and prominently thickened, dark brown.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 4 Sep. 1982, *J.H. Ross* 2762 (MEL, NSW, PERTH); Aug. 1970, *Mrs B.H. Smith s.n.* (PERTH); Sep. 1970, *B.H. Smith s.n.* (PERTH); 1 Sep. 1978, *B. & M. Smith s.n.* (PERTH).

Distribution and habitat. Known only from the Wongan Hills area of the Avon Wheatbelt bioregion. At the type locality the species is growing in yellow sandy loam in open mallee over medium density shrubs. Associated species include *Eucalyptus pyriformis*, *Leptospermum erubescens*, *Verticordia eriocephala* and *Callitris pyramidalis*. At least six other drupaceous epacrids also occur at this site, including *Conostephium preissii*.

No site information was recorded for the various *Smith* collections, but *J.H. Ross* 2762 is said to have been collected from ‘sandy loam in *Eucalyptus salmonophloia* woodland’. This statement appears rather problematic in that *E. salmonophloia* usually occurs in soils that are heavier than ‘sandy loam’ and within the author’s experience no epacrids are associated with typical Salmon Gum woodlands.

Phenology. All collections have been made in August or September and all, apart from one, are in late flower, suggesting that peak flowering is likely to be in the period June to August. The exception is *B.H. Smith s.n.*, which consists of mature fruit only.

Etymology. The epithet is derived from the place name Wongan Hills and *-ensis* (native of). The fact that many species now bear this epithet is indicative of the importance of the area as a centre of botanical diversity in the Western Australian wheatbelt.

Conservation status. To be listed as Priority One under the Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). Known from very few collections, south and east of Wongan Hills. Efforts by the author to relocate the species in the latter area, where all the older collections are from, have been unsuccessful. The locality statements associated with these specimens are rather vague but

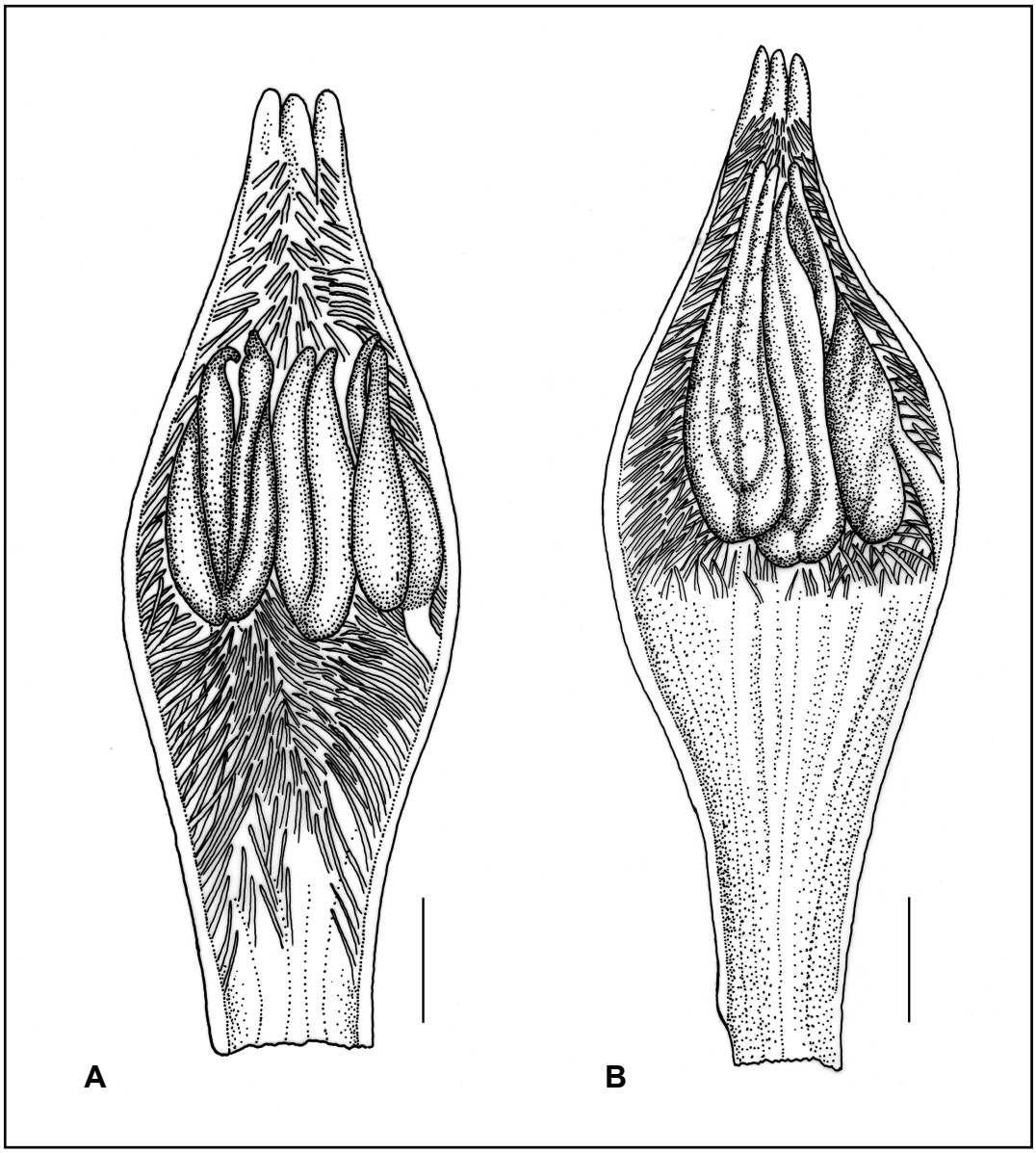

Figure 1. Longitudinal corolla sections showing internal surfaces. A – *Conostephium wonganense*; B – *C. hortiorum*. Scale bars = 2 mm. Vouchers *M. Hislop* 3514 (A), *F. Hort, J. Hort & L.W. Sage* 597 (B). Drawings by Skye Coffey.

it is clear that the collection sites are close to one another, and it is even conceivable that all were made in the same bush block. The type locality is a small area of remnant bushland south of Wongan Hills.

This plant occurs in a part of the wheatbelt that is relatively well-known botanically and the fact that so few collections have been made gives strong indication that it is likely to be rare. Short-range endemism is well-known among Western Australian epacrids and it may well be the case that the species was already very restricted geographically when this part of the state was cleared for agriculture.

Conostephium wonganense is much in need of further survey work in an effort to establish whether it persists anywhere on the conservation estate in the Wongan Hills area.

Affinities. The possibility that an undescribed taxon, similar to *C. hortiorum* Hislop, might occur in the Wongan Hills area was discussed briefly under the notes heading in the description of that species (Hislop 2013: 322). At the time of writing the author was only aware of one collection (*M. Hislop* 3514) from south of Wongan Hills. Not long after publication however, other older collections from east of the town became available. These had the same morphological attributes as *M. Hislop* 3514 and strengthened the case that a new species did indeed need to be recognised.

Conostephium wonganense is one of a group of species characterised by fragrant flowers, dark purple corolla tubes, strongly thickened, brown anther connectives and the presence of very short nectaries (the remaining species are without nectaries), the others being *C. hortiorum*, *C. pendulum* Benth., *C. prolatum* Hislop and *C. roei* Benth. Among this group it is closest morphologically and geographically to *C. hortiorum* and *C. pendulum*.

In gross morphology *C. wonganense* appears closest to *C. hortiorum*. The most significant difference between the two relates to the internal corolla tube indumentum. In *C. wonganense* the hairs extend from the base of the lobes to a point adjacent to the top of the ovary and coalesce into more or less, well-defined, longitudinal bands below the base of the bulge. The hairs are longest (1–1.5 mm long) about the base of the anthers and overlap with those, becoming distinctly shorter towards the ovary (Figure 1A). The hairs are more restricted in *C. hortiorum*, usually extending only as far as the base of the bulge or occasionally with sparse, short hairs below the bulge to a point about halfway to the ovary (Figure 1B).

There are also differences between the two species in the size of some floral parts (measurements for *C. hortiorum* given in parentheses): corolla lobes 0.4–1.0 mm long in *C. wonganense* (*cf.* 1.2–2.4 mm); sepals 6.1–8.4 mm long (*cf.* 8.5–10.8 mm); anthers 3.0–4.1 mm long (*cf.* 3.8–5.6 mm); inflorescence axis 2.2–3.0 mm long (*cf.* 2.8–5.2 mm). The two can also be distinguished by a difference in the indumentum of the abaxial leaf surface. In *C. wonganense* this indumentum mostly consists of rather sparse, long hairs (occasionally ± glabrescent), whereas in *C. hortiorum* it is noticeably denser with a predominance of short hairs, especially within the grooves.

Conostephium wonganense can be readily distinguished from *C. pendulum* by its obviously shorter inflorescence axis, 2.2–3.0 mm long, compared to 5.4–10.2 mm in *C. pendulum*. There is also an important difference between the two in regard to the internal corolla tube indumentum. In contrast to the hair distribution of *C. wonganense*, described above, *C. pendulum* has five more or less discrete hair tufts situated towards the base of the tube adjacent to ovary. The surfaces between the base of the bulge and the hair tufts are shortly and sparsely hairy or more or less glabrous.

Notes. The description of the fruit given above is based on a single collection and must therefore be regarded as provisional.

Identification. The new species can be accommodated in Hislop's (2013) key by the addition of an extra couplet:

13. Branchlet indumentum very short, uniform in length, to *c.* 0.1 mm long; leaves obovate, narrowly obtriangular or occasionally linear; sepals 4.8–7.5 mm long; corolla lobes 0.4–0.6 mm long (Fitzgerald River National Park) ..... **C. prolatum**

13: Branchlet indumentum of mixed lengths, the longer hairs, 0.5–1.2 mm long; leaves linear, very narrowly triangular or very narrowly elliptic; sepals 6.1–10.8 mm long; corolla lobes 0.4–2.4 mm long

14. Internal corolla tube densely hairy from the base of the lobes to a point adjacent to the top of the ovary, the hairs coalescing into ± well-defined longitudinal bands below the base of the bulge; inflorescence axis 2.2–3.0 mm long; sepals 6.1–8.4 mm long; corolla lobes 0.4–1.0 mm long; anthers 3.0–4.1 mm long (Wongan Hills area) ..... **C. wonganense**

14: Internal corolla tube densely hairy from the base of the lobes to the base of the bulge, usually glabrous below the bulge or occasionally with sparse hairs extending to a point *c.* halfway between the bulge and the top of the ovary; inflorescence axis 2.8–5.2 mm long; sepals 8.5–10.8 mm long; corolla lobes 1.2–2.4 mm long; anthers 3.8–5.6 mm long (eastern Darling Range) ..... **C. hortiorum**

Dielsiodoxa altimontana Hislop, *sp. nov.*

Typus: Stirling Range National Park, Western Australia [precise locality withheld for conservation reasons], 19 February 2021, *D.A. Rathbone* DAR 1061 (*holo*: PERTH 09332219).

Low, spreading *shrubs*, to about 20 cm high and 30 cm wide, from a fire-sensitive rootstock. Young *branchlets* with a sparse to moderately dense indumentum of variably orientated, straight or curved hairs, to *c.* 0.3 mm long; leaf abscission scars 0.1–0.2 mm wide. *Leaves* spirally arranged, mostly steeply antrorse, densely imbricate, readily abscising, often only a cluster of terminal leaves retained on dried specimens; apex attenuate, very fine, with one or sometimes two terminal hairs; base attenuate; petiole absent; lamina thin-textured, very narrowly ovate, very narrowly elliptic to ± linear, 2.5–5.5 mm long, 0.2–0.8 mm wide (l:w ratio 6–16: 1), usually slightly concave adaxially or ± flat, longitudinal axis gently to strongly incurved; surfaces pale green, ± concolorous, slightly shiny; adaxial surface glabrous or with a few long hairs present, the midvein usually obscurely evident; abaxial surface glabrous or with a few long hairs present, the midvein and sometimes a vein on either side, usually evident, shallowly grooved between the veins; margins ciliate with hairs to 0.5 mm long. *Inflorescence* axillary, erect to ± spreading, 1–3-flowered, axis 0.8–1.6 mm long, glabrous or with very few hairs, either terminating at a flower or produced into a very short, blunt projection; flowers erect, pedicellate above the bracteoles, with a short, thick pedicel, *c.* 0.2 mm long. *Fertile bracts* narrowly ovate to ovate, 0.25–0.35 mm long, 0.20–0.25 mm wide, with 2 or 3 sterile bracts on the lower part of the axis. *Bracteoles* ovate, broadly ovate to ± orbicular, 0.2–0.4 mm long, 0.2–0.3 mm wide, obtuse; abaxial surface glabrous; margins ciliolate. *Sepals* ovate to broadly ovate, 0.40–0.55 mm long, 0.3–0.5 mm wide, obtuse to subacute; abaxial surface green, becoming white towards the margins, glabrous, the mid-vein usually prominent; adaxial surface glabrous; margins ciliolate with hairs to *c.* 0.05 mm long. *Corolla tube* white, shallowly funnelform, clasping the base of the ovary, *c.* as long as the sepals, 0.7–0.8 mm long, 0.8–0.9 mm wide, glabrous throughout. *Corolla lobes* white, longer than the tube, 1.0–1.1 mm long, 0.5–0.6 mm wide, spreading widely from the base, glabrous throughout, with 3 veins prominent. *Filaments* terete, 0.5–0.6 mm long, attached to anther *c.* 1/2 above anther base, adnate to tube just below sinuses. *Anthers* well-exserted from the tube, 0.20–0.25 mm long. *Nectary* partite, the scales minute, narrowly ovate to narrowly elliptic, 0.15–0.25 mm long, *c.* 0.1 mm wide, glabrous. *Ovary* obovoid to ellipsoid, 0.6–0.8 mm long, 0.4–0.5 mm wide, 2-locular, with prominent, elongate papillae (to *c.* 0.1 mm long) in the upper half, glabrous below. *Style* 0.3 mm long, glabrous; stigma prominently 2-lobed. Mature *fruit* not seen. (Figures 2A, 3)

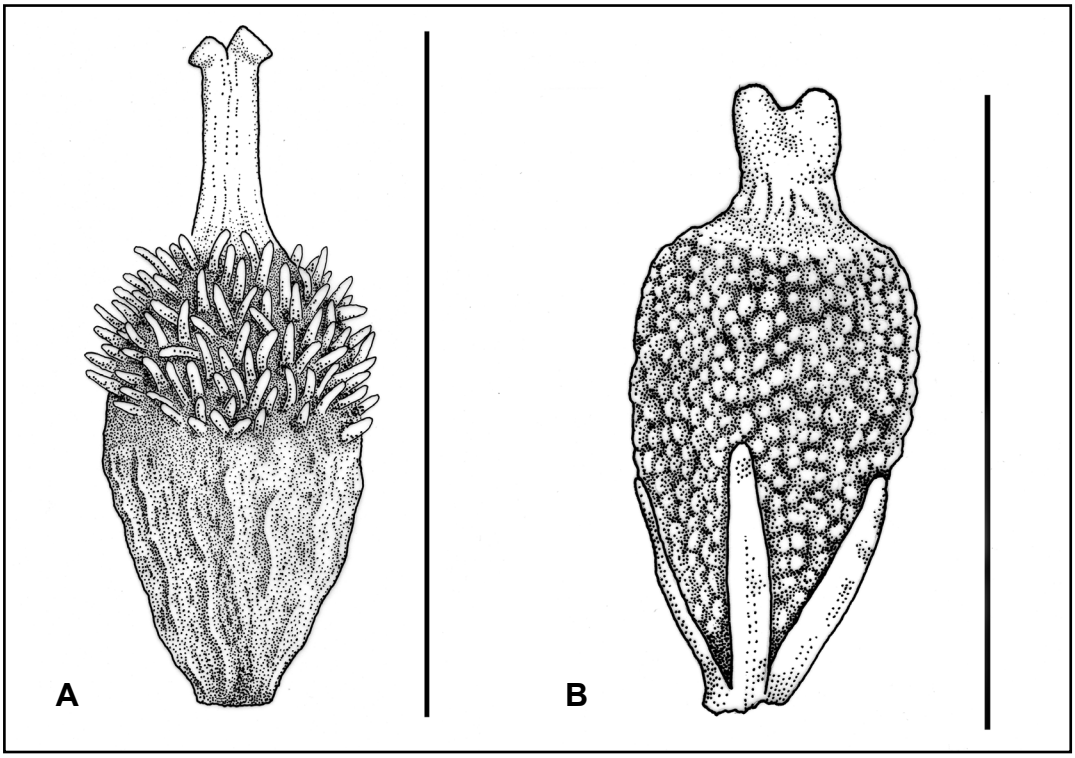

Figure 2. Comparison of gynoecium features. A – *Dielsiodoxa altimontana* with nectary scales removed; B – *D. lycopodioides* with nectary scales. Scale bars: A = 1 mm; B = 0.8 mm. Vouchers *D. Rathbone* DAR 1061 (A), *R.J. Cranfield* 14877 (B). Drawings by Skye Coffey.

Diagnostic characters. Readily distinguished within the genus by the following character combination: leaves very narrowly ovate, very narrowly elliptic to ± linear, 2.5–5.5 mm long, 0.2–0.8 mm wide, ciliate with hairs to 0.5 mm long and terminating in 1 or sometimes 2 hairs; flowers pedicellate above the bracteoles with a short thick pedicel, *c.* 0.2 mm long; ovary with prominent, elongate papillae, to *c.* 0.1 mm long; style 0.3 mm long.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 3 Nov. 2021, *M. Dilly & S. Barrett* SB 2324 (PERTH); 4 Nov. 2021, *M. Dilly & S. Barrett* SB 2326 (PERTH); 12 Nov. 1961, *A.S. George* 3127 (PERTH); 13 Nov. 1944, *R.J. Moir s.n.* (PERTH).

Distribution and habitat. Occurs in a small part of the eastern Stirling Range in the far west of the Esperance Plains bioregion where it grows on upper mountain slopes, usually in damp, sheltered sites, in loam over quartzite (Figure 3). Some associated species include, *Goodenia brendannarum*, *Actinotus rhomboideus*, *Platysace* sp. Stirling (J.M. Fox 88/262) and *Drosera monticola*.

Phenology. All specimens were collected in late spring or summer and are at various stages of flowering, with some immature fruit present in *A.S. George* 3127.

Etymology. From the Latin *altus* (high) and *montanus* (pertaining to a mountain), a reference to the fact that the species occurs only in the highest parts of the Stirling Range.

Figure 3. *Dielsiodoxa altimontana*. Young plants *in situ.* Voucher *M. Dilly & S. Barrett* SB 2324. Photograph by Megan Dilly.

Conservation status. To be listed as Priority Two under the Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). This species is known with certainty only from the upper slopes of two neighbouring mountain peaks in the eastern Stirling Range, where there are at least many dozen plants, although following recent fire, most of those are young (Sarah Barrett *pers. comm.*). Threatening processes include the confirmed presence in these general areas of the root-rot pathogen, *Phytophthora cinnamomi* and possibly grazing pressure from quokkas, as the plant has been observed to be preferentially grazed by the small marsupial (Megan Dilly & Sarah Barrett pers. comm.).

Affinities. Under the notes heading in their treatment of *Dielsiodoxa lycopodioides* Albr., Albrecht and Hislop (2011) discussed two geographically disjunct and morphologically anomalous specimens (*R.J. Moir s.n.* and *A.S. George* 3127), which they tentatively referred to that species. At the time it was felt that because the specimens were old (the most recent of the two then 50 years old) and fragmentary, it was desirable to see better material before a final decision was taken on their taxonomic status. The recent rediscovery of the same morphotype has enabled a proper comparison between it and *D. lycopodioides* and it is now quite clear that the two cannot be considered conspecific.

Dielsiodoxa lycopodioides is a locally common species with a somewhat disjunct distribution in the wettest parts of the south-west of Western Australia, around Walpole, Denmark and Mount Manypeaks. It

shares with *D. altimontana* relatively long and narrow leaves and narrow leaf abscission scars. However, the two species differ in respect to several significant floral characters. Maybe the most interesting of these is the presence in *D. altimontana* of a short, thick pedicel between the bracteoles and the base of the sepals. This is a unique feature within the genus, with all other species having sessile flowers. Another clear difference is in the texture of the ovary. Whereas *D. altimontana* has elongate papillae (to *c.* 0.1 mm long) arising from the ovarian surface in the upper half (Figure 2A), in *D. lycopodioides* the surface is minutely pustulate throughout (Figure 2B). A further difference in the gynoecium between the two is the noticeably longer style of *D. altimontana* (0.3 mm long), compared to 0.1–0.2 mm in *D. lycopodioides*. There is also a rather unexpected leaf character that sets *D. altimontana* apart from *D. lycopodioides* and all other congeners. Where the leaf apices of the other species either terminate in a short thickened mucro or else entirely lack a mucro, in *D. altimontana* the leaves terminate in one or sometimes two hairs that are indistinguishable in texture from the marginal cilia.

Two other taxa of *Dielsiodoxa* occur in the Stirling Range, *D. tamariscina* (F.Muell.) Albr. and *D. leucantha* subsp. *obtusa* Hislop & Albr. Neither of those taxa have pedicellate flowers, ovaries with elongate papillae or leaves that terminate in hairs. In addition, *D. tamariscina* can be readily distinguished by the presence of hairs on the corolla tube and lower surfaces of the corolla lobes. *Dielsiodoxa tamariscina* grows in close proximity to *D. altimontana* at one of the known localities of the new species. *Dielsiodoxa leucantha* subsp. *obtusa* is further distinguished from *D. altimontana* by its shorter leaves (to 3 mm long, *cf.* 2.5–5.5 mm in *D. altimontana*), that are essentially ovate or elliptic (*cf.* very narrowly ovate, very narrowly elliptic to ± linear) and have minutely ciliolate margins with hairs rarely as long as 0.1 mm (*cf.* cilia to 0.5 mm long).

Notes. In early 2021 the author mentioned the subject of the aberrant *Dielsiodoxa* specimens to Albany-based Flora Conservation Officer, Sarah Barrett, during correspondence regarding the potential appearance of unfamiliar plants in recently burnt country in the Stirling Range. Given the age of the *Moir* and *George* specimens and the fact that *Phytophthora cinnamomi* had spread rapidly in the national park in the intervening decades, I was not confident that the plant still survived. Sarah forwarded the information to Damien Rathbone, another local botanist who knows the range well and shortly afterwards he retrieved an image taken during survey work that conclusively showed that it was indeed still extant.

Identification. The new species can be accommodated in Albrecht and Hislop's (2011) key by the modification of couplet 3 and the addition of a new couplet, 3a:

3. Ovary and fruit pustulate or with elongate papillae; mature leaves ± linear, narrowly ovate, narrowly elliptic, ovate or narrowly rhombic, 0.8–5.5 mm long, 0.2–1.1 mm wide, with l:w ratio of 2–13: 1; 1–7 veins weakly visible on the abaxial leaf surface; raised abscission scars 0.10–0.35 mm wide

3a. Flowers pedicellate above the bracteoles, with short, thick pedicels; ovary and fruit with prominent, elongate papillae; style 0.3 mm long (eastern Stirling Range) ..... **D. altimontana**

3b. Flowers sessile; ovary and fruit pustulate; style 0.1–0.2 mm long (Walpole area, Denmark area and Mt Manypeaks) ..... **D. lycopodioides**

3: Ovary and fruit smooth or with minute, dense, slightly raised, elongate surface cells; mature leaves ovate, elliptic, depressed-ovate or rhombic-elliptic, 1.3–3.0 mm long, 0.9–2.5 mm wide, with l:w ratio of 0.7–2.1: 1; 7–13 veins visible on the abaxial surface; raised abscission scars (0.3)0.4–0.7 mm wide..... **4**

Styphelia blackallii Hislop, *sp. nov.*

Typus: Tarin Rock, Western Australia [precise locality withheld for conservation reasons], 12 December 2018, *M. Hislop* 4786 (*holo*: PERTH 09154493; *iso*: CANB, CNS, MEL, NSW).

Styphelia sp. Tarin Rock (W.E. Blackall 1315), Western Australian Herbarium, in *Florabase*, https://florabase.dpaw.wa.gov.au/ [accessed 21 April 2022].

Dense, tangled *shrubs* to *c.* 100 cm high and 120 cm wide, multi-stemmed at the base but apparently with a fire-sensitive rootstock. Young *branchlets* with a moderately dense to dense indumentum of ± patent, straight to decurved hairs, to *c.* 0.2 mm long. *Leaves* spirally arranged, variably orientated, from steeply antrorse to shallowly retrorse; apex acute, shortly mucronate, non-pungent, the mucro 0.1–0.2 mm long; base attenuate to cuneate; petiole 0.3–0.7 mm long, ± hairy throughout, or the abaxial surface glabrous; lamina narrowly to broadly obovate or narrowly to broadly elliptic, 3–7.2 mm long, 1.2–2.8 mm wide, from concave adaxially to distinctly convex, longitudinal axis varying from slightly incurved to slightly recurved; surfaces ± concolorous, or the abaxial surface slightly paler; adaxial surface slightly shiny, sparsely hairy, at least in the lower half, venation obscure; abaxial surface matt, sparsely hairy, with 5–7 primary veins, rather narrowly grooved between the veins; margins obviously ciliolate on younger leaves with hairs to 0.1 mm long. *Inflorescence* axillary, erect, usually 1-flowered, less often up to 4-flowered, axis 0.2–1.0 mm long when 1-flowered (up to at least 3 mm long if multi-flowered, but mature multi-flowered inflorescences not seen), ± terete, with a dense indumentum, bud-rudiment absent in 1-flowered inflorescences, but usually present when multi-flowered; flowers erect, sessile above the bracteoles. *Fertile bracts* present only in multi-flowered inflorescences, narrowly ovate, *c.* 1 mm long and 0.5 mm wide, sterile bracts absent. *Bracteoles* narrowly ovate, 1.1–1.8 mm long, 0.5–0.6 mm wide, attenuate; abaxial surface with spreading hairs; margins ciliolate. *Sepals* narrowly ovate, 2.2–3.0 mm long, 0.6–0.7 mm wide, long-attenuate, the apices filiform, ± recurved; abaxial surface pale green, with a sparse to moderately dense indumentum of spreading hairs, venation obscure to well-defined (refer notes below); adaxial surface with a few hairs towards apex and sometimes also at the base; margins ciliate with hairs to *c.* 0.1 mm long. *Corolla tube* white, narrowly ellipsoid, shorter than the sepals, 1.5–2.2 mm long, 1.0–1.3 mm wide, glabrous externally, internal surface with an apical band of hairs, otherwise glabrous. *Corolla lobes* white, usually longer than, or occasionally ± equal to the tube, 2.0–2.5 mm long, 0.5–0.6 mm wide at base, erect in the lower 1/3–1/2 and then spreading and recurved, glabrous externally, internal surface with a dense indumentum of ± terete, ornamented hairs. *Filaments* terete, 0.4–0.5 mm long, attached to anther 3/4 above anther base, or a little above, adnate to tube just below sinuses. *Anthers* partially exserted from the tube (by 1/3–2/3 of their length), 0.7–1.1 mm long, apex shallowly emarginate. *Nectary* partite, the scales 0.3–0.4 mm long, 0.2–0.3 mm wide, glabrous. *Ovary* whitish-green, narrowly ovate in outline, 0.6–0.8 mm long, 0.3–0.4 mm wide, glabrous, 2-locular, slightly compressed. *Style* 1.5–2.2 mm long, minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex that tightly envelops, but is free from, the style base (i.e. the base is countersunk below the level of the ovary apex), exserted from corolla tube to a point a little above the anther apices; stigma distinctly expanded. *Fruit* narrowly obovate to narrowly elliptic in outline, 4.5–5.0 mm long (inclusive of gynophore), 1.7–2.0 mm wide, much longer than the sepals, strongly compressed (linear to very narrowly elliptic in TS), with a glabrous gynophore; surface dry, with 5–7 raised longitudinal veins; style early deciduous. (Figure 4)

Diagnostic characters. Within the *S. blepharolepis* group (or Group XI *sensu* Puente-Lelièvre *et al.* 2016) distinguished by the following combination of characters: leaves narrowly to broadly obovate to narrowly to broadly elliptic with attenuate to cuneate bases; leaf apex shortly mucronate, the mucro

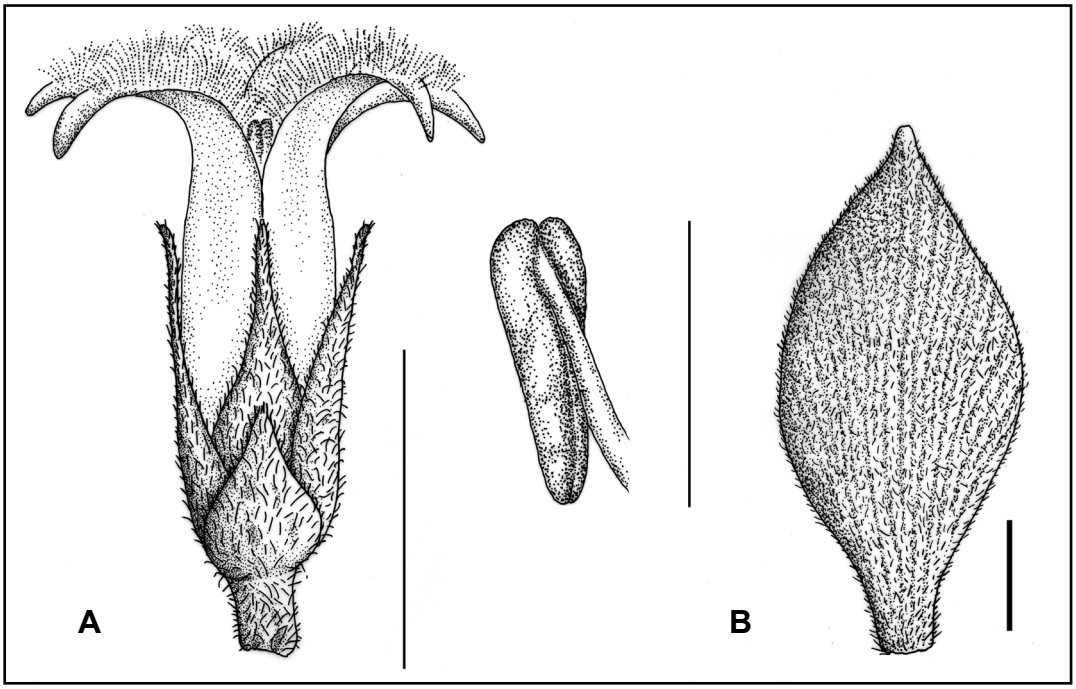

Figure 4. *Styphelia blackallii*. A – 1-flowered inflorescence, stamen; B – leaf, abaxial view. Scale bars: A = 2 mm (inflorescence), 0.8 mm (stamen); B = 1 mm. Voucher *M. Hislop* 4787. Drawings by Skye Coffey.

0.1–0.2 mm long, non-pungent; sepals hairy, long-attenuate, at least as long as the corolla tube, with filiform ± recurved apices; nectary scales glabrous; gynophore glabrous.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 11 Nov. 1931, *W.E. Blackall* 1315 (PERTH); 12 Dec. 2018, *M. Hislop* 4787 (HO, K, PERTH).

Distribution and habitat. Known with certainty only from the Tarin Rock area, west of Lake Grace, in the far west of the Mallee bioregion. At the type locality the plant is growing in heath and open mallee woodland in white or very pale-yellow sand. Associated species include *Eucalyptus dorrienii*, *Eremaea pauciflora*, *Melaleuca subtrigona*, *Leptospermum roei* and *Petrophile ericifolia*.

Phenology. The only collections so far have been made in November and December and peak flowering is likely to be in late spring and early summer. However, in common with other members of the *Styphelia blepharolepis* group some flowers and/or fruit are likely to be present for much of the year.

Etymology. The epithet honours the major contribution made by William Edward Blackall (1876–1941) towards a better understanding and appreciation of the highly diverse flora of south-western Australia. Although he did not live to see his project to publish illustrated keys to Western Australian plant families come to fruition, it was taken up after his death by the late Brian Grieve, then professor of botany at the University of Western Australia. The resultant series of books, How to Know Western Australian Wildflowers (1954–1998), have been the primary introduction to the Western Australian flora for thousands of plant enthusiasts (amateur and professional alike) ever since.

The name is also appropriate because until its rediscovery in 2018, this species was only known from Blackall's 1931 collection.

Conservation status. Currently listed as Priority Two under Conservation Codes for Western Australian Flora under the name *Styphelia* sp. Tarin Rock (W.E. Blackall 1315) (Western Australian Herbarium 1998–). Since its original listing the species has been rediscovered by botanist Jolanda Keeble, during survey work of nature reserves in the Tarin Rock area. However, it is still only known with certainty from a single restricted population, albeit a healthy one consisting of reasonably good plant numbers.

Affinities. Based on a highly distinctive combination of morphological characters, *S. blackallii* can be confidently assigned to the small *S. blepharolepis* group. This group is characterised in large part by a strongly compressed, prominently veined fruit, partite nectaries, and 2-locular ovaries. It keys out at the first lead of couplet 17 in the recently published interim key to the species groups of Western Australia *Styphelia* (Hislop 2021).

Within the *S. blepharolepis* group, *S. blackallii* is morphologically most similar to *S. capillaris* Hislop & Puente-Lel., another rare species from the Darling Range south-west of York. The two are assumed to be close relatives and share a distinctive sepal character in which the apices are long-attenuate and filiform. *Styphelia blackallii* differs from *S. capillaris* in the following ways: leaves (on the same plant) narrowly to broadly obovate to narrowly to broadly elliptic with an attenuate to cuneate base (*cf.* narrowly ovate to narrowly elliptic with a cuneate to rounded base in *S. capillaris*); petioles well-defined, 0.3–0.7 mm long (*cf.* poorly defined, 0.1–0.3 mm long); sepals hairy (*cf.* glabrous).

Notes. There are some noteworthy differences between the Blackall collection and those from the type locality even though Blackall's notes make it clear that they were collected within a few kilometres of each other. In comparison to plants at the type locality, *Blackall* 1315 has leaves that are thicker and tending to be narrower. In addition, the inflorescences are largely restricted to the axils of bract-like, 'early seasonal leaves' (*sensu* Powell *et al.* 1997: 16) rather than regular, mature leaves, the sepal venation is more prominent and the anthers less exserted from the corolla tubes. The significance of these differences is difficult to judge given the very small sample size, but pending the discovery of additional populations, the two morphotypes are assumed to represent infraspecific variation only.

In late October 2021 the author collected a plant (*M. Hislop* 4876) belonging to the *S. blepharolepis* group from a nature reserve about 50 km to the west of the type population of *S. blackallii*. While the material is closer to *S. blackallii* than to any other known member of the group it differs in several ways that may be taxonomically significant. Compared to *S. blackallii* the leaves of *M. Hislop* 4876 are broader (to 4 mm wide *cf.* to 2.8 mm in *S. blackallii*) and the apex is a very short and broad callus tip rather than being clearly mucronate, with a 0.1–0.2 mm long mucro. The sepals and corollas are also generally larger: sepals 1.2 mm wide (*cf.* 0.6–0.7 mm wide); corolla tube 2.5 mm long by 1.8 mm wide (*cf.* 1.5–2.2 mm by 1.0–1.3 mm). In addition, while both *S. capillaris* and *S. blackallii* grow in deep, white or very pale-yellow sand, *M. Hislop* 4876 was growing in grey clay-loam. Unfortunately, despite a lengthy search only a single specimen was found at the new locality and so at this stage there is no way of knowing how representative it is of plants in the area more generally. In these circumstances it has not been included in the above description and will be referred to *S. aff. blackallii*, pending the availability of further collections.

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I am very grateful to Damien Rathbone, Sarah Barrett, and Megan Dilly, without whose contributions I would not have been in a position to describe *Dielsiodoxa altimontana*. Similarly, without the fruitful search effort of Jolanda Keeble the status of *Styphelia blackallii* may well have remained in abeyance.

I would also like to thank Skye Coffey for the excellent illustrations, the vigilant Dave Albrecht who in his capacity as reviewer highlighted some inconsistences between the descriptions and the illustrations, and Kelly Shepherd who helped to remedy those inconsistencies.

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