

275. BIARUM DITSCHIANUM

Peter Boyce

The genus *Biarum* comprises 21 species of tuberous-stemmed perennial herbs distributed from central Portugal to western Iran. In nature they occur usually in areas subjected to a hot, dry summer. Most species produce foul-smelling, deep purple to brownish inflorescences of which the most conspicuous element is the expanded spathe limb. A notable exception to this inflorescence type is found in *Biarum ditschianum* Bogner & P.C. Boyce, illustrated here.

Biarum ditschianum was first collected in spring 1987 in south-western Turkey by Friedrich Ditsch, a student at Bonn University, Germany. A single tuber was cultivated at Bonn and flowered in May that year but unfortunately the plant died soon after flowering and no voucher specimen was preserved. Attempts to re-collect the species in October 1987 failed but in April 1988 Manfred Koenen of Bonn Botanical Garden succeeded in locating it and re-introduced it to cultivation. The plants flowered at Bonn in May 1988 and, from these, herbarium vouchers and specimens in spirit were prepared; these subsequently formed the basis for a description of this previously un-named species (Bogner & Boyce, 1989).

Biarum ditschianum has an extraordinary appearance in flower compared with most other *Biarum* species. The spathe limb is reduced to a narrow rim on the spathe tube and the most notable feature is the relatively massive, dark yellow spadix appendix. Two other *Biarum* species have unusual inflorescences; *B. davisii* (Turrill, 1938; Boyce, 1987) has pinkish white spathes, a purple spadix appendix and produces a sweet, not foul, odour at anthesis, while *B. auranticum* (Mouterde, 1966) has a greenish white spathe and a yellow spadix. The odour produced by the inflorescence of the latter is unknown. Both of these species lack a zone of sterile flowers (pistillodes) on the interstice separating the male and female flower zones, a characteristic which is also true of *B. ditschianum*.

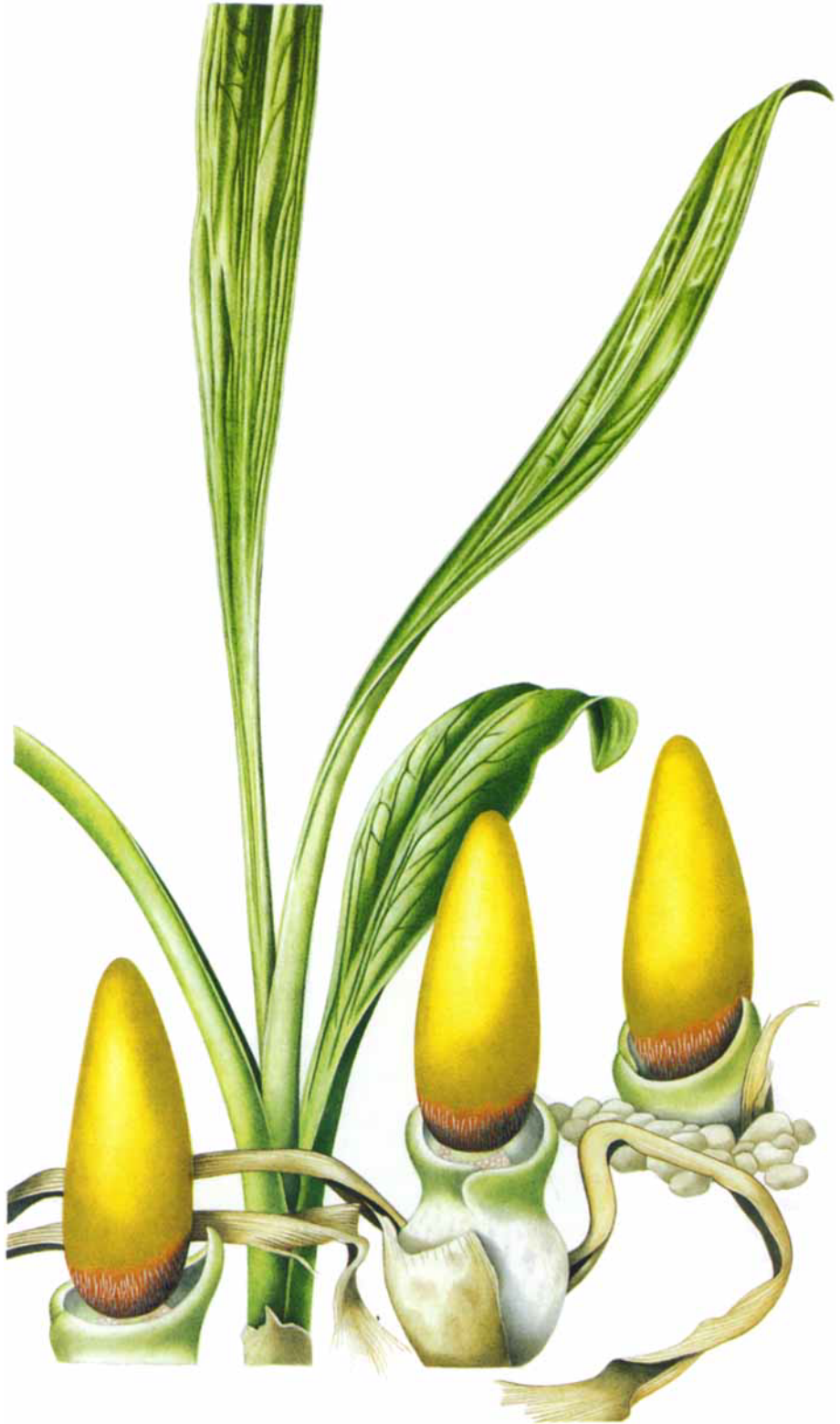
Perhaps the most unusual feature of *B. ditschianum* is the presence of hair-like processes on the base of the spadix appendix. Such structures are otherwise unknown in the genus and are uncommon in the Araceae; their function is not clear, although it is possible that they play a role in the pollination process. The inflorescence is also notable for being exceptionally foul smelling and produces a powerful odour of carrion and excrement which attracts carrion flies.

Experiments undertaken in Bonn have shown that the spadix appendix absorbs UV light, suggesting that, to carrion flies, which are known to perceive mainly objects which are illuminated by UV light, it contrasts well against the surrounding limestone in its natural habitat; to this type of fly the appendix is possibly the most visible part of the whole inflorescence.

CULTIVATION. Plants grown at Bonn, Munich, Kew and in a number of private collections in Germany and the UK have succeeded best in relatively narrow but deep clay pots in a compost of equal parts sterilized loam, humus and sharp grit. When growth begins in autumn water should be given sparingly until the plant is growing well since excess water early on can result in root loss. Under glass the plants should be given as much light as possible during the winter to prevent leaf etiolation. Ventilation must be given on all but the coldest days and water applied regularly but carefully since moisture remaining lodged in the leaf sheaths can result in rotting. The plant should continue growing throughout the winter and a balanced feed should be applied once a week to maintain vigour. Towards early spring growth will slow down and by mid-June the leaves will turn yellow and wither. At this time watering should cease, although the potting soil should be kept just moist by plunging the pot to the rim in sand and keeping the sand damp. The inflorescence will emerge soon after the foliage dies. Once flowering is finished the soil should be allowed to dry out and the plant given a period of rest. During this time care should be taken not to allow the pot to become too hot, as this can cause desiccation of the tuber. Repotting should be carried out annually in July or early August. Propagation is best effected by seed, although older plants do occasionally produce offsets which can be removed during repotting and grown separately.

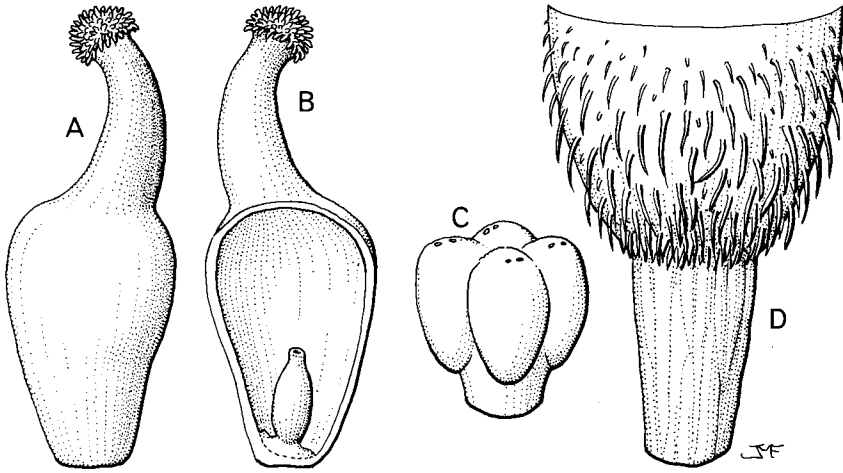
Biarum ditschianum Bogner & P.C. Boyce in *Willdenowia* 18: 409 (1989). Type: Turkey, Antalya, Xanthos hill, 24 April 1988, *Koenen* Bonn 22592 (holotype K!; isotypes B!, BONN!, K!, M!).

DESCRIPTION. *Tuberous, perennial herb.* *Tuber* 2.5–3 cm wide, 1.5–2 cm high, depressed-globose to subglobose. *Roots* produced in an apical ring, white, of two types; contractile roots few, c. 9–12 mm diam., fusiform; feeding roots numerous, c. 1.4–2 mm diam., cylindrical. *Cataphylls* 5–10 cm long, linear-lanceolate, acute, membranaceous, whitish. *Leaves* 2–5, hysteroanthous, 6–15(–20) cm long, 0.6–3(–3.5) cm wide, earliest leaves oblanceolate, subsequent leaves linear, narrowly elliptic or lanceolate, apex acute to obtuse,



Biarum ditschianum

ANN FARRER



Biarum ditschianum. A, ovary, $\times 20$; B, ovary, longitudinal section, $\times 20$; C, stamen, three quarter view, $\times 20$; D, spadix appendix base and stipe, side view, $\times 4$. Drawn by Mark Fothergill.

base cuncate, decurrent; lamina with 4–7 primary lateral veins on each side, mid-green, veins paler, somewhat prominent. *Petioles* 8–20 cm long, 1.5–3 mm wide, channelled, laterally compressed, mid-green, sometimes reddish-tinged distally. *Inflorescence* solitary, appearing in late spring, smelling very strongly foetid, base enclosed by 5–6 cataphylls, 1.5–6(–7) cm long, c. 1.5 cm wide, these at first membranous, whitish, soon withering to become papery and brown, the longest equalling the spathe; peduncle subterranean, 2–5 cm long, 3.5–5 mm wide, whitish. *Spathe* 4–5 cm long; limb much reduced, 1.8–2 cm long, c. 2 cm wide, subtriangular, terminating in a c. 2 mm long mucro, exterior greenish to light green, sometimes with a reddish tinge, interior purplish red; spathe tube c. 3 cm long, 1.8–2 cm wide, margins connate proximally for c. 2.5 cm, exterior whitish, sometimes slightly reddish-tinged, interior reddish purple. *Spadix* 7–8 cm long; male flowers arranged in an oblong zone 5–6 mm long, 7–9 mm wide; female flowers arranged in a 2–2.5 mm high hemispherical cluster; male and female flower zones separated by an interstice 1.3–3.5 cm long, 2.5–3.5(–4) mm wide which is light purple, fading to creamy white above, apically purple; spadix appendix 4–4.5 cm long, 7–11 mm wide, elongate-conoid to somewhat subcylindric, shortly stipitate, apex obtuse, base rounded, the basal 7–10 mm furnished with 1–2.5 mm long, 0.1–0.25 mm wide, reflexed, filiform, acuminate, transparent white hair-like processes, appendix dark yellow except for the reddish purple basal 7–10 mm; stipe 5–6 mm long, 3–4 mm wide, cream. *Flowers* unisexual, naked. *Stamens* 1.5–3 mm high, 1–2 mm wide, subsessile, yellow

proximally, purple-red distally, occasionally entirely yellow. *Gynoecium* c. 1 mm diam.; ovary bottle-shaped, purplish red, occasionally pale cream; styles and stigmas curved outwards, style 1.2–1.3 mm long, c. 0.4 mm wide, purplish, colour intensifying towards the ovary, occasionally cream, stigma subcapitate, 0.5–0.6 mm diam., yellow. *Infructescence* 3–3.5 cm wide, c. 2 cm high, depressed-globose, consisting of c. 50 berries. *Berries* 6–10 mm long, 4–7 mm wide, obovoid, whitish with a slight reddish tinge proximally. *Seed* 5.5–7.5 mm long, 4–5.5 mm wide, obovoid, testa with the upper part very slightly and irregularly reticulate, lower part smooth.

DISTRIBUTION. South-western Turkey.

HABITAT. Low to middle-high garrigue, in partly loam-filled chimneys or crevices in limestone; 30–60 m.

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