Zaluzianskya microsiphon (O. Kuntze) K. Schum. in Just, Jahresb. 26: 365 (1900); Hiern in Thiselton-Dyer, Fl. Capen. 4(2): 344 (1904); Hilliard & Burtt in Notes Roy. Bot. Gard. Edinb. 41: 9 (1983). Type: Natal, van Reenen's Pass, 1,800 m, 20 Mar. 1894, *Kuntze* (holotype K!).

Nycterinia microsiphon O. Kuntze, Rev. Gen. Pl. 3(2): 238 (1898).

Z. maritima Walp. var. *breviflora* Hiern in Thiselton-Dyer, Fl. Capen. 4(2): 336 (1904). Lectotype: Natal, Van Reenen's Pass, 6,000 ft, 5 Mar. 1895, *Schlechter* 6988 (lectotype K!).

Z. maritima var. *atro-purpurea* Hiern, loc.cit. Lectotype: Natal, East Griqualand, mountains around Kokstad, 5,500 ft., Feb. 1883, *Tyson* 1354 (lectotype K!).

Z. maritima var. *grandiflora* Hiern, loc.cit. Type: Natal, East Griqualand, Mount Currie, 5,200 ft, Feb. 1884, *Tyson* 1733 (BOL, NBG, PRE, not seen).

REFERENCES

Eisnerova, V. (1976) in C.C. Gillispie (ed.) *Dictionary of Scientific Biography* 14: 586. New York.

Hiern, W.P. (1904) in W.T. Thiselton-Dyer, *Flora Capensis, Scrophulariaceae* 4(2): 344.

Hilliard, O. & Burtt, B.L. (1983). Zaluzianskya (Scrophulariaceae) in South Eastern Africa and the correct application of the names Z. capensis and Z. maritima. *Notes Roy. Bot. Gard. Edinb.* 41: 1–43.

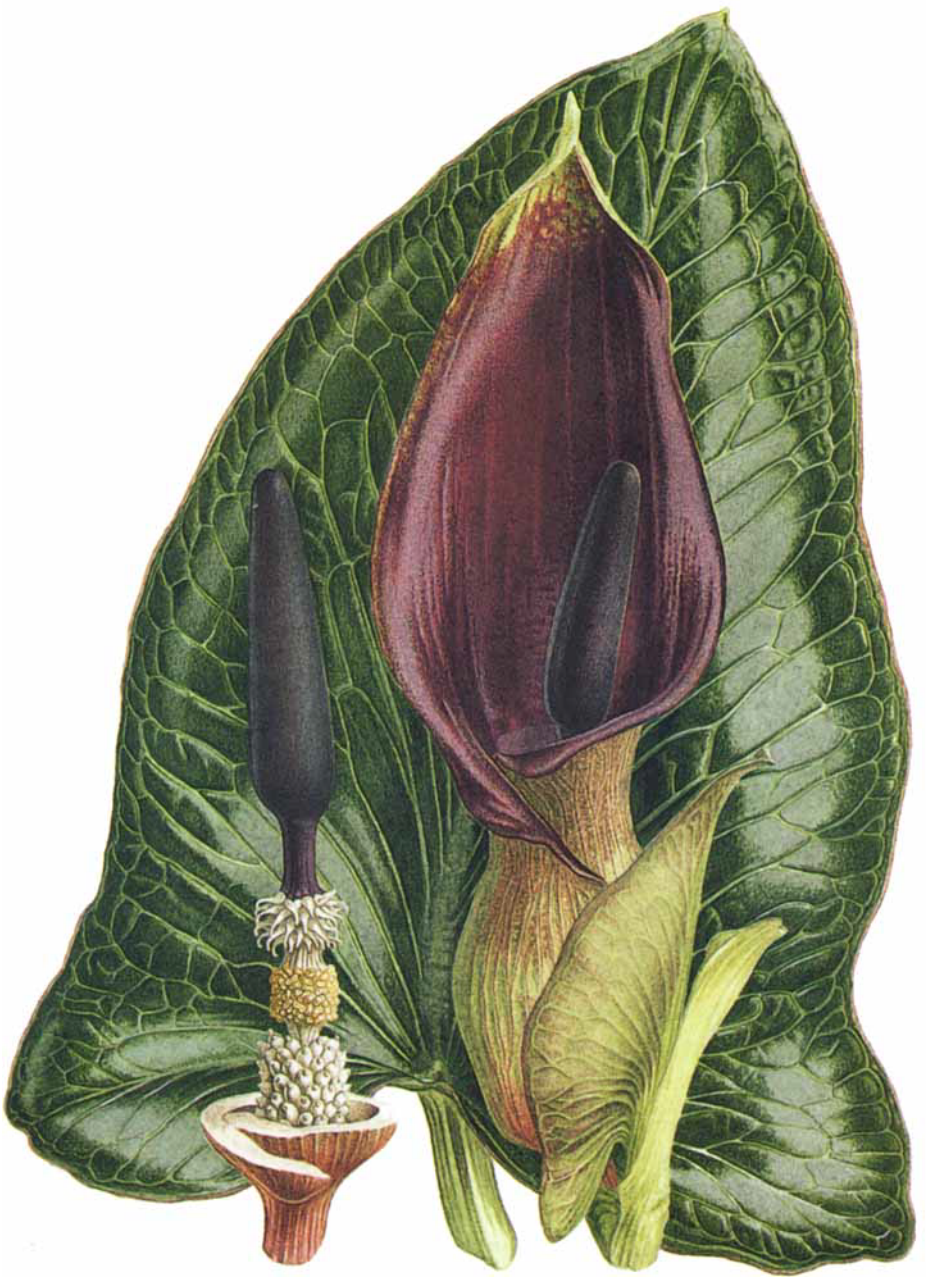
102. ARUM PICTUM

Araceae

Peter Boyce

For many the primary attraction in the genus *Arum* is the unique structure of the inflorescence coupled with its often rich coloration. Only occasionally is the foliage mentioned as a further source of interest. *Arum pictum* L. fil. is one of the two notable exceptions, the other being *A. italicum* Mill. The leaves of *A. pictum* display a variety of colours, depending on the stage of development reached. On first emerging they are a deep, shiny, metallic green, with the margins, and to a certain extent the lamina, tinged with purple. As the leaf expands the purple lamina coloration fades while the main and lateral veins become slightly paler; the margin however retains its coloration. As the season progresses the lamina loses its sheen but the veins continue to lighten until late spring, when they stand out as a creamy-white to silvery-grey network. The late season coloration of *A. pictum* leaves is similar to the silver-grey veining of many forms of

Plate 102



Arum pictum

PANDORA SELLARS

A. italicum, although the leaf shape is very different. In view of this similarity it is hardly surprising that these two plants have been much confused in the past. In addition to its attractive foliage, *A. pictum* produces spathes at the start of the growth period in the autumn, a flowering pattern which is unique to this species.

In flower the species resembles the spring-blossoming *A. nigrum* Schott, except that the peduncle is far shorter in *A. pictum* and the spathe-limb has a much more pronounced sheen. Close inspection of the spadix will reveal only a single zone of sterile filaments, situated above the staminate flowers. In *A. nigrum* there are always two zones of filaments. Additionally the spathe of *A. nigrum* is produced from the petiole-sheath of the terminal leaf at the completion of the growth period, usually in April or May. The inflorescence of *A. pictum* emerges just before or with the leaves at the commencement of the growth period. At first glance it appears that the spathe grows from cataphylls (basal sheaths) that surround the newly emerging shoot with the vegetative shoot emerging beside it. Dissection of this growth shows that in fact the flowering shoot emerges through a petiole-sheath as in the other species of *Arum*, the only significant difference being that at this stage the leaf is in a partially immature state. Just what advantage this gives *A. pictum* over spring-flowering species has still to be discovered.

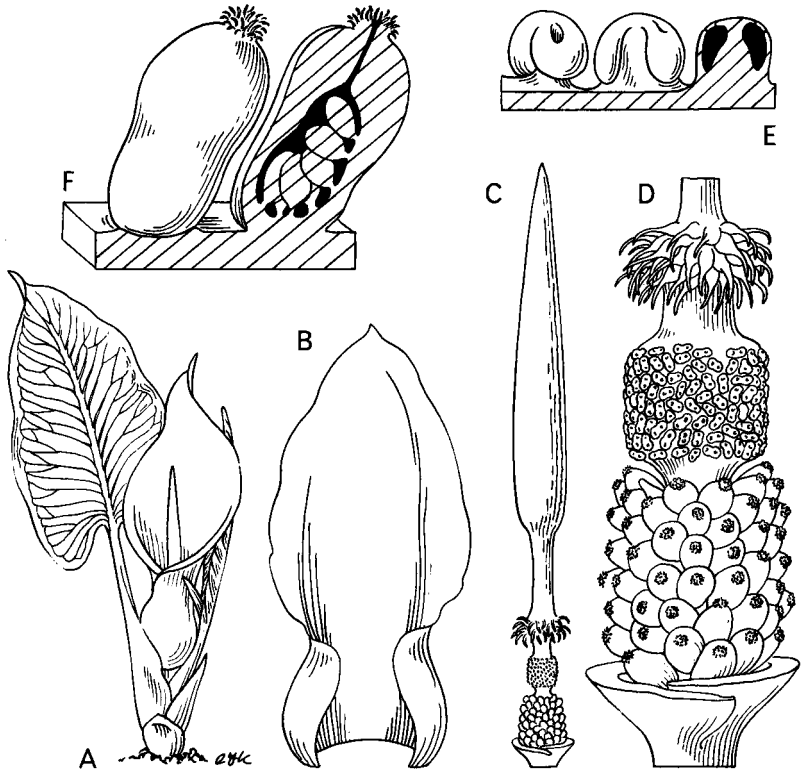
The origin of the confusion surrounding the correct application of the epithet 'pictum' is difficult to trace. For many years the white-veined form of *A. italicum* has been offered by nurserymen under the name 'pictum'. However the name has never been validly published in connexion with this taxon and if retained must be clearly stated to be a cultivar. Thus the correct name for this plant is *A. italicum* Mill. subsp. *italicum* 'Pictum'.

Arum pictum was first described by Linnaeus the younger from material gathered on Corsica, where it occurs in stony or rocky places or beneath low scrub. Later Schott (1855) published the species as a new genus, *Gymnomesium*, the separation being based on the presence of a single zone of sterile filaments together with the autumn-flowering habit. However this genus was not widely accepted and many botanists still retained the species within *Arum*. Engler (1879, 1920) adopted *Gymnomesium* as a sectional name within the genus. In my forthcoming revision of *Arum* (Boyce, in prep.) Engler's section is raised to subgeneric level in order to emphasize the distinct features of *A. pictum*.

As well as flowering in the autumn, *A. pictum* has a unique infructescence. In *Arum* this typically consists of an oblong-cylindric cluster of pulpy, orange-red berries held aloft on a stout peduncle, and is adapted for seed dispersal by birds. However in *A. pictum* the infructescence is composed of a globular head of much drier, silvery-lilac berries at ground level. The dispersal mechanism of *A. pictum* is unknown, but in the genus *Biarum*, similarly coloured berries are apparently linked to seed dispersal by ants (pers. obs.).

CULTIVATION. *Arum pictum* is easily grown either in a large pot under glass or, in favourable positions, out-of-doors in a sunny, sheltered spot; it should be noted, however, that a severe winter will kill this species. The tubers should be potted either singly in a 15 cm pot or with up to three in a 30 cm pot. A loamy compost with a reasonable humus content and a generous quantity of added grit is most suitable. The tubers need to be covered with about 5 cm of compost and the pot then top-dressed with a further 2 cm of grit. Generally growth commences in late September, usually starting with the production of the flowering shoots. Before the spathes fade the leaves will be reasonably well developed and a regular supply of water and feed will be necessary. Generally arums are heavy feeders and amply repay a generous feeding regime. The growth phase continues until late May by which time the leaves will have started to turn yellow. Watering should then be severely reduced and feeding stopped to encourage the new tubers to ripen properly. Once dormant the pots should be kept warm but not allowed to become either very hot or desiccated since, as with all arums, the tubers do not tolerate being completely dried out during the resting period.

DESCRIPTION. *Perennial herb* up to 50 cm tall with a naked, discoid-vertical tuber up to 7 cm in diameter, 2.5 cm thick, bearing a central growth point and peripheral adventitious buds; roots sprouting from the base of the growth-point. *Leaves* up to 10, petiolate, the bases enclosed by 2 or 3 triangular cataphylls, the lamina ovate to ovate-cordate, 9–25 cm long, 6–18 cm wide, acute to obtuse with short, rounded, lateral lobes, shiny deep metallic green tinged with purple especially along the margins when first expanded, later dull, deep green with a purple tinge and creamy-white to silvery-grey midrib and lateral veins; petioles up to 25 cm long, 12 mm wide, semi-terete, with a conspicuous, 2–3 cm long triangular basal sheath with narrow incurved margins, dull metallic green with slight purple staining basally. *Inflorescence* appearing before or with the leaves. *Peduncle* absent above ground, or rarely up to 2 cm (visible if growing in deep shade), terete, pale green. *Spathe-tube* oblong-cylindric, 2.5–5.5 cm long, 2.5–3 cm wide, constricted at the apex, margins free, the exterior off-white below



Arum pictum. A, habit, $\times \frac{1}{4}$; B, spathe, $\times \frac{1}{3}$; C, spadix, $\times \frac{1}{2}$; D, fertile part of spadix, $\times 2$; E, male flowers, $\times 10$; F, female flowers, $\times 10$.

ground, pale green flushed and spotted with purple above ground, the interior dirty white with purple staining along the margins. *Spathe-limb* elliptic, 9–16 cm long, 4–6.5 cm wide, shortly acuminate, the exterior mid-green with deep purple staining, especially along the margins and at the apex, the interior rich deep purple, the apex occasionally mottled mid-green. *Spadix* 8–16 cm long, *c.* 2/3 as long as the spathe-limb, the appendix cylindrical-clavate, 6–12 cm long, 7–15 mm across, long-stipitate, contracting abruptly at the stipe, deep black-purple with a satin sheen, smelling strongly of horse dung. *Sterile filaments* present only above the staminate flowers, arranged in 3 cycles, subulate, deflexed, *c.* 3 mm long, the bases slightly swollen, smooth, pale cream, darker below. *Staminate flowers* in an oblong to globose band 5–7 mm long and wide, separated from the sterile filaments by a 2–3 mm long, longitudinally-ridged, off-white interstice; individual flowers consisting of 2 naked pale cream anthers with off-white connectives, the locule dehiscing by a rounded, sub-apical, slit; pollen pale yellow. *Pistillate flowers* arranged in a globose-oblong cluster, 11–13 mm long, 10–11 mm wide, separated from the staminate flowers by a

1–2 mm long, longitudinally deeply sulcate, cream interstice; individual flowers consisting of a single naked pistil; ovary oblong, 2.5–3 mm long, 1.5–2 mm wide, tapering basally, pale cream; stigma capitate, sessile, papillose, yellow. *Fruiting head* borne at ground level, globose, 2.5–3 cm long, 2–2.5 cm wide, berries oblong-cylindrical, 4–5 mm long, 3–3.5 mm wide, silvery-lilac, containing 1 or 2 spherical, reticulate, pale brown seeds.

DISTRIBUTION. Balearics (Majorca), Corsica, Sardinia.

Arum pictum L.fil., Suppl. 410 (1781); Engler in A. & C. DC., Monog. Phanerog. 2: 582 (1879); Engler, Pflanzenr. 73 (iv. 23F):69–70 (1920); Prime in Fl. Europaea 5: 270–271 (1980); Grey-Wilson & Mathew, Bulbs 196, pl. 35 (1981); Pinatti, Flora d'Italia 3: 626–627 (1982). Type: Corsica, 'A. S. Galliae Rege Ludovico xvi' (Hb. Linn.).

Arum balearicum Buc'hoz, Dec. 8: t.11 (1778), nom. nud.

Arum corsicum Lois., Fl. Gall. 1, 2: 617 (1807).

Gymnomesium pictum Schott in Oesterr. Bot. Wochenbl. 5: 17 (1855); Schott, Syn. Aroid. 8 (1856); Schott, Prod. Syst. Aroid. 73 (1860).

CONFUSING CASSIAS

Susyn Andrews and Sabina Knees

The genus *Cassia* contains several hundred species, a number of which are widely cultivated throughout the tropics and subtropics. However, relatively few cassias are grown in temperate European gardens and among those that are, several have been confused.

Many of these attractive, yellow-flowered shrubs are native to South America and it was with relief that one noted the long awaited publication of a paper by Irwin & Barneby in 1982. This massive work divides the large genus *Cassia* into three separate genera, *Cassia* L., *Senna* (K. Bauhin) Miller and *Chamaecrista* (Breyne) Moench.

The species with which we were concerned fall into the genus *Senna* (K. Bauhin) Miller sect. *Chamaefistula* (Coll.) Irwin & Barneby ser. *Coluteoideae* (Coll.) Irwin & Barneby. Ser. *Coluteoideae* comprises 20 species and is characterized by leaves with 2–11 pairs of leaflets, a zygomorphic corolla, a chamaefistula androecium (see diagram) and numerous (28–150) ovules.

To aid the identification of these four taxa (three species and a hybrid) which are found in cultivation, we have produced a simplified key to the vegetative characters by which the species can easily be separated.