

## BIARUMS FOR PLEASURE

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Among the general run of "bulbs" the genus *Biarum* undoubtedly falls into the "curiosity" category. With their low-slung inflorescences, glossy black-purple spathes and, let's face it, pretty powerful stench, the unwary lover of the more courtly *Narcissus* or *Crocus* is liable to recoil from the earthier appeal of *Biarum* with what must be reluctantly accepted as distaste, or in extreme cases, disgust.

That such unreasonable reactions should be caused by what are really highly interesting plants is a source of some consternation to me at Kew. Colleagues encouraged to examine a flowering specimen on my desk always seem to approach as though it were a scorpion, or perhaps a poisonous spider that might jump up suddenly.

Nothing could be further from the truth. Careful surgery performed on a fresh *Biarum* inflorescence reveals a superb display of minute floral detail, accompanied by an equally wide range of odour. The admittedly pungent aroma of the black terminal appendix turns unexpectedly to a sweet, gentle fragrance when the bolder nose investigates the more basal regions of the spadix. The rich velvety black purple of the spathe becomes a pure translucent white below, against which the cluster of tiny purple pistils is contrasted, each tipped with a shock of minute stigmatic papillae. Truly it may be said that aroids are not for the faint-hearted,

and yet what rich rewards await the curious.

*Biarum* is a small genus of some 12 or 13 species that occur around the Mediterranean and in the Near East, Turkey being the area richest in species. The genus is closely related to the familiar European *Arum* and less closely to the common Jack-in-the-Pulpit of the USA (*Arisaema triphyllum*). As in *Arum*, the stem is reduced to a squat, round tuber and the spadix has a long, smooth upper section like a rat's tail (more solemnly referred to by taxonomists as a 'sterile terminal appendix'). At the base of the spadix are the female flowers, a group of flask-shaped, naked pistils, followed by a section bearing variously-shaped projections ('sterile filaments') according to the species. This is followed by the male flowers, a cylinder of densely-packed stamens, and above that the spadix consists entirely of rat's tail, except in one species, *B. tenuifolium*, in which there is a section of sterile filaments above the stamens as well.

The easy distinction between *Biarum* and *Arum* lies in the leaves, which in the former are always oval, obovate or strap-shaped, whereas in *Arum* they are always sagittate (arrow-shaped) or cordate (heart-shaped).

The association of black-purple inflorescence and nasty smell is one which occurs commonly in the Araceae, and it is related to the pollination mechanism. There is no

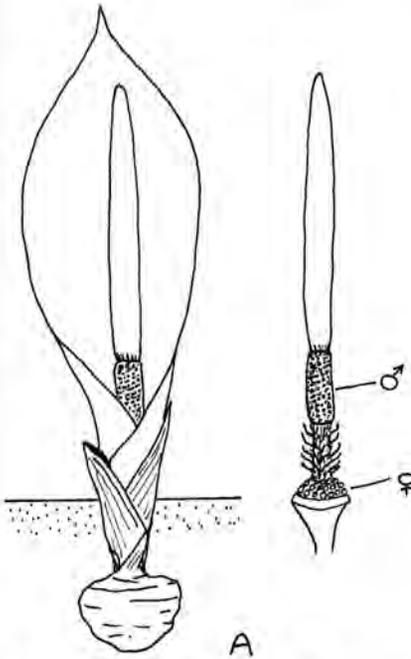


Figure 1: Inflorescence of *Biarum eximium*.

point in beating about the bush with aroids, and as in other areas of natural history (e.g. insect ecology) the dawning of understanding is frequently accompanied by a certain feeling of revulsion, and I would be the last to deny this having experienced it myself on watching the larvae of some parasitic wasp boiling around inside a hapless caterpillar. Beauty is, however, in the eye of the beholder, and to the truly curious the revelation that the ripe *Biarum* inflorescence is in fact imitating a piece of dung is as fascinating as it is obvious in retrospect. The insects which pollinate the inflorescence are probably dung and carrion flies as in *Arum nigrum*, though I have no firm confirmation of this from field observations. The

long, erect rat's tail tip of the inflorescence clearly plays a key role in distributing the attractive odour over a wide area, probably because it raises the smell up into more turbulent layers of the air. I can certainly vouch for the fact that my own plants of *Biarum tenuifolium* can be quite distinctly smelt at a distance of 60 feet when in flower. This is the more remarkable when one considers that the inflorescence, not more than about 6 inches high, sits on a stalk so short that the base of the spathe rests just at the soil surface, and sometimes below it.

In Turkey, biarums grow naturally on rocky hillsides, often among crocuses with which their cultivation has much in common. Biarums flower in the autumn (fall) usually just before the leaves emerge. The foliage then lasts through the winter, dying off in late spring, when the plant enters a dormant phase. In terms of its natural environment this behaviour is quite intelligible since the warm moist winters of the Mediterranean and Near East offer the most favourable growing conditions while the baking hot, dry summers are best spent in "resting". The summer baking is in fact a necessary requirement to really successful cultivations of biarums, and once the leaves die off, plants in pots are best left alone in a hot dry place and not watered again until the tips of the first shoots of the new season's growth appear.

Despite this, I have successfully managed to grow (with my wife's help I must confess) *B. tenuifolium* planted out in a well-drained spot in our rather cool suburban garden in London. Here,



Figures 2 & 3: 2. *Biarum tenuifolium* in flower in our garden in Chiswick, London. Note *Arisaema candidissimum* leaves on the left. 3. *Biarum tenuifolium* foliage with *Sisyrinchium brachypus* on right. Our garden, Chiswick, London.

without assistance of any kind, it has increased greatly vegetatively and now forms a neat clump next to our concrete cat. Another group of this species grows next to my *Arisaemas* and flowered well this year.

At Kew the *Biarum* collection is kept mostly in clay pots under glass and they are particularly useful in Alpine displays during the autumn. Figure 4. shows a pot of *B. tenuifolium* from the Alpine House. Pot cultivation should be as for alpine, an important point being to make sure the compost is well-drained. John Innes is quite suitable, particularly with a little extra sharp sand, and the picture shows the "top dressing" of chippings used at Kew which prevents compaction from watering and gives an attractive "finish".

Most *biarums* seem to increase vegetatively without difficulty by the budding off of small tubers, and after 2 or 3 years a single tuber will have produced quite a cluster. This makes them more attractive as a display both in flower and in leaf.

Some species are quite spectacular, like the large *B. pyrami* from Asia Minor and Iran. In this species the velvet black spathes are up to 30 cm long, and the obovate leaves a beautiful deep glossy green with the veins delicately etched into the surface.

The fruits of *Biarum* are also noteworthy and illustrate a further important difference between this genus and *Arum*. The latter forms the well-known "Cuckoo Pint" fruiting head of bright scarlet glossy berries, borne on an erect stalk, and the seemingly sudden emergence of these colourful fruits after the apparent disappearance of the flow-



Figure 4: Flowering *Biarum tenuifolium* at Kew; note dressing of chips.

ering plants in spring is an excellent example of the alternating protection/display functions of the inflorescence so ably discussed by Mike Madison in an earlier issue of *Aroideana*.

*Biarum*, however, has quite a different way of dealing with the fruits. In *B. tenuifolium* at least, the spherical fruiting head is almost white, or greenish-purple where the tips of the berries are exposed to light, and sits half-buried in the ground. What creature distributes these fruits remains for the present a mystery - I'd be very interested to hear any suggestions.

#### Recommended Reading

Mathew, Brian. "Dwarf Bulbs." *Batsford & Royal Horticultural Society*, London (1973)