

Short Notes

A NEW SUBSPECIES OF *FESTUCA RUBRA* L.

Work carried out in this laboratory over the past 15 years has resulted in a new classification of the *Festuca rubra* L. group. The purpose of this note is to describe the only new taxon recognised.

***Festuca rubra* L. subsp. *scotica* S. Cunn. ex Al-Bermani, subspecies nova**

HOLOTYPE: Ardlamont Point, near Tighnabruaich, Argyllshire, v.c. 98, Scotland. *H. McAllister s.n.* Grown in University Botanic Garden, Leicester, 1983. *C. A. Stace F157 (LTR)*.

Planta rhizomatosa; culmi sparsim fasciculosi usque ad 70 cm alti; panícula densa ramis strictis; spiculae (ad apicem quarti flosculi) (8) 9.4–11.8 (12.5) mm longae; lemmata basalia (5.5) 6.1–7.9 (9) mm longa cum arista (0.3) 1.2–2.3 (3.7) mm longa; folia innovationum involuta, fasciculis sclerenchymae parvis discretis; chromosomatum numerus $2n=56$.

This subspecies is distinguished from most taxa within the *F. rubra* group by its long spikelets, rather long lemmas, and long awns. *F. rubra* var. *commutata* Gaudin (*F. nigrescens* Lam.) has equally long awns, but the spikelets and lemmas are shorter and the plant lacks rhizomes. *F. rubra* subsp. *multiflora* Piper (*F. diffusa* Dumort., *F. heteromalla* Pourret) has equally long spikelets and lemmas but the panicle is very diffuse, the culms usually much taller (often 1 m tall), and the leaf-blades are flat. *F. juncifolia* St Amans also has equally long spikelets and lemmas but the culms are not tufted, the rhizomes are much longer, and the innovation leaf-blades have continuous or nearly continuous abaxial sclerenchyma.

F. rubra subsp. *scotica* is a boreal taxon; outside Scotland we have seen material from Scandinavia (including Iceland), and it is likely to occur more widely. In Scotland it occurs in a range of grassy, usually wet, habitats, from near sea-level to at least 825 m in the mountains. It is found from the type locality in Argyllshire northwards to North Mainland, Shetland Isles, and Lewis, Outer Hebrides.

The only other taxon within the *F. rubra* group that has a similar distribution is *F. rubra* subsp. *arctica* (Hackel) Govoruchin (*F. richardsonii* Hook.), but the latter has shorter spikelets and lemmas which are usually glaucous and densely covered with white hairs and have usually very short (or no) awns, and is hexaploid ($2n=42$). *F. rubra* subsp. *scotica* is evidently either octoploid ($2n=56$) (type specimen; plant from Iceland) or decaploid ($2n=70$) (plant from Torridon, W. Ross).

This taxon was first recognised by C. E. Hubbard as characteristic of high altitudes in the Cairngorms (see Webster (1978, p. 489) and Hubbard (1984, p. 374), where it is called "subsp. (ex Cairngorms)"), but he did not name it. It was also recognised as a distinct taxon by S. M. Cunningham, working in Leicester in 1979–82, and he provisionally named it subsp. *scotica* and determined specimens from outside the Cairngorms (see Scott & Palmer (1987, p. 352)); he did not formally describe it. We have now grown it at Leicester for many years and confirmed its distinctness.

Further details of morphology, anatomy, cytology and distribution will follow in a later paper, as will the results of hybridisation experiments.

ACKNOWLEDGMENTS

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ABNORMAL FLOWERS IN *PLATANATHERA CHLORANTHA* (CUSTER) REICHENB.
 AND *GYMNADENIA CONOPSEA* (L.) R. BR. SUBSP. *CONOPSEA*

On 7 July 1989, a plant of *Platanthera chlorantha* (Custer) Reichenb. was found in flower near Dent in N. W. Yorks., v.c. 65. It had 19 flowers but only the uppermost one was abnormal. The height of the plant was 30 cm. The column, median outer perianth segment and lateral inner perianth segments of this abnormal flower were normal, but the lateral outer perianth segments were absent. The labellum was sepeloid, and without a spur. The dimensions of the labellum were 4.6 × 9.3 mm; it was shallowly deflexed, curled up at the distal end and trilobed. It was white with some light green at the tip and very light green veins.

The sepeloid nature of the labellum of this abnormal flower is of particular interest because it bears a striking resemblance to those featured in Plate 2 and Figs. 1A & B of McKean's (1982) description of the supposed intergeneric hybrid, × *Pseudanthera breadalbanensis* McKean (*Platanthera chlorantha* × *Pseudorchis albida* (L.) A. & D. Löve). In × *P. breadalbanensis* all the flowers are similar (McKean 1982), each having a labellum similar to that of the abnormal *P. chlorantha* flower found at Dent. In the author's opinion, × *P. breadalbanensis* is not a hybrid but an abnormal variant of *P. chlorantha*, for the following reasons. Firstly, the labella are similar to the labellum in the abnormal Dent flower. Secondly, the only morphological features of *Pseudorchis albida* evident in × *P. breadalbanensis* are the trilobed labellum and the flower length; the latter, however, merely reflects the former, and thus there are no intermediate features requiring a hybrid explanation. Thirdly, there is abundant evidence of the frequency of floral abnormalities in *P. chlorantha*. Hemsley (1907) wrote that in "*P. bifolia* in the broad sense, that is including *P. chlorantha*, many deviations from the typical floral structure are on record, . . .". This is borne out by Camus & Camus (1929). Only a few of the abnormalities observed in *P. chlorantha* need be mentioned. Flowers with no spur, two spurs and three spurs were found to be sufficiently frequent to be given names: *ecalcarata* (Druce 1921; Godfrey 1933), *bicalcarata* (Camus & Camus 1929) and *tricalcarata* (Hemsley 1907) respectively. These abnormalities were variously accorded the rank of variety, form and *lusus*. Hemsley (1907) reported that "True peloria of two kinds has been observed in *Platanthera*, namely lip-peloria and petal-peloria, in which the transformed organs, being of the petal series, are either like the lip or the lip takes the shape and colouring of the other two petals". Camus & Camus (1929) specifically referred to the former kind of peloria in *P. chlorantha*. Thus, types (a) and (b) peloria *sensu* Bateman (1985) have been observed in *Platanthera*. Interestingly, Henslow (1858) reported a plant of *P. chlorantha* in which only the lowest flower was abnormal, although only approximately half the inflorescence was expanded. The flower was abnormal in that the median outer perianth segment was united with one of the lateral outer perianth segments, and instead of the usual two anther-lobes, there were four. The fourth reason for preferring a peloric interpretation of × *P. breadalbanensis* derives from the five observations made by Bateman (1985). Fifthly, of the habitat of the alleged hybrid McKean (1982) remarked "A site with so many plants of *Platanthera chlorantha* as well as several specimens of *Pseudorchis albida* must be very rare in Britain." On 7 July 1985 at the Dent site over 200 flowering spikes of *P. chlorantha* were counted in the corner of the hilly pasture where the abnormal flower was found. On 28 June 1986, at the same site, six flowering spikes of *P. albida* were found just above this concentration. This is the only such site known to the author in Watsonian Yorkshire (v.c. 61–65 inclusive). That similar labella should appear at similar sites, one labellum undoubtedly not the product of hybridisation, would seem to be significant.

The mounted labellum of the abnormal flower of *P. chlorantha* found at Dent has been retained by the author.

The next example of an abnormal orchid flower illustrates the more common situation where all the flowers in an inflorescence are similarly and clearly abnormal.

A plant of *Gymnadenia conopsea* (L.) R.Br. subsp. *conopsea* with abnormal flowers was found on 14 July 1989, near Rievaulx in v.c. 62, N.E. Yorks. All the flowers in the inflorescence were abnormal in exactly the same way. The labellum, the inner lateral perianth segments and the outer median perianth segments were normal. The outer lateral perianth segments were abnormal in that they were folded forward, not spread horizontally or downwardly curved. Further, their margins were not revolute.

Clapham (1987) said of the genus *Pseudorchis* "Close to *Gymnadenia* but with the outer lateral perianth segments connivent with the outer median and the inner perianth segments into a hood so that the flower becomes almost campanulate". The plant found near Rievaulx thus had flowers with features common to both genera. To my knowledge, no other members of sub-tribe, *Gymnadeniinae* (which includes *Platanthera*, *Pseudorchis* and *Gymnadenia*) have been recorded from this site. However *G. conopsea* subsp. *densiflora* (Wahlenb.) G. Camus, Bergon & A. Camus is not uncommon here. Camus & Camus (1929) commented that abnormalities in *G. conopsea* are frequent.

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A NONRESUPINATE ABNORMALITY IN *ORCHIS PURPUREA* HUDSON

Rose (1948) described peloria in *Orchis purpurea* Hudson in Kent and various floral abnormalities have since been described. Ettlinger (1987) has drawn attention to a group of *O. purpurea* on a nature reserve in E. Kent (v.c. 15) displaying various degrees of peloria and nonresupination. We report a different nonresupinate abnormality without peloria, from the same nature reserve, of which we have been unable to find a previous description.

A single plant was observed in flower in 1986, 1987 and 1988 and was consistently abnormal in each year. It failed to appear in 1989 and 1990. Each flower was completely inverted; the peduncular ridges were not spiralled, showing that resupination had not occurred. The usual floral parts could be identified, including pollinia, but the flowers, the inflorescence and the rosette leaves were all narrower than in associated normal plants (Fig. 1 and Table 1). Seed capsules did not mature in any year. However, seed-set was patchy among normal plants on the reserve.

The complete failure to set seed might be due to the difficulty facing pollinating insects when attempting to settle on the inverted flowers and, in any event, they would probably fail to place the pollina from normal flowers on the stigmatic surfaces of the nonresupinate forms. The abnormality might be explained by the loss of a fragment of DNA carrying the gene for resupination and some accessory gene(s) controlling robust growth.

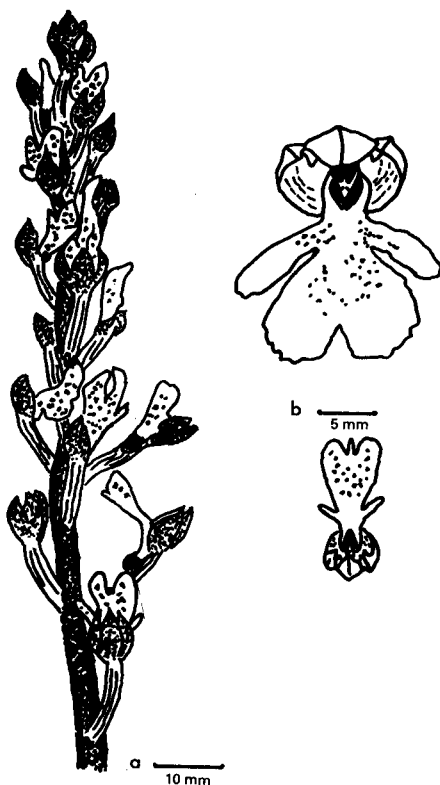


FIGURE 1. a) The flowering spike of the nonresupinate plant (traced from a photograph). Note the rectilinear peduncular ridges. b) Individual florets from a normal (above) and the abnormal plant. The abnormal flower was drawn from a specimen preserved in spirit.

TABLE 1. COMPARISON OF NORMAL AND NONRESUPINATE PLANTS OF *ORCHIS PURPUREA* HUDSON

Character ^a (dimensions in cm)	Nonresupinate plant	Normal plants on the same reserve			
		n	mean	range	S.D.
Height of flowering stem	35	8	47.3	39-56	5.87
Inflorescence					
height	12.5	8	14.1	10-22	3.73
diameter	2.5	8	5.3	4.5-7.0	0.76
no. of flowers	30	8	35.9	28-49	7.94
Width of flower ^b					
across 'arms'	0.9	12	1.38	1.0-2.0	0.33
across 'skirt'	0.5	12	1.28	0.9-1.7	0.26
Rosette leaves ^c					
length	13, 14, 13	16	15.3	11-19	2.23
width	3.5, 3.5, 3.5	16	5.0	4.3-6.3	0.52

^a Plants were measured when all but the top 2-3 flowers were fully open.

^b A single flower was measured on 12 different plants; dimensions appeared relatively constant for a given plant.

^c Three leaves were measured on the nonresupinate plant, but only two on each normal plant.

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HERBARIUM SHEETS OF THE RARE FERN \times *ASPLENOPHYLLITIS MICRODON*
(T. MOORE) ALSTON IN EDINBURGH

Two previously unknown Victorian herbarium sheets of the rare Guernsey Fern (\times *Asplenophyllitis microdon* (T. Moore) Alston) have recently come to light at the herbarium of the Royal Botanic Garden, Edinburgh. In excellent condition, the two sheets (both originally ex herb. Neill Fraser, from whom they were purchased in 1905) include at least five separate gatherings made between the years 1860 & 1865, containing a total of ten beautifully preserved fronds, varying from 15 to 26 cm in length.

This unusual intergeneric hybrid fern between Lanceolate Spleenwort (*Asplenium billotii* F. W. Schultz) and Hart's Tongue Fern (*Phyllitis scolopendrium* (L.) Newm.) has always been of limited wild occurrence. First found in Guernsey in 1855, it was subsequently known to occur in the mid-19th century sporadically in Cornwall, Devon and possibly Wales (Alston 1940), while more positive records of it came from Guernsey through the latter half of the 19th century, where it still survives (McClintock 1968, 1975). It is illustrated as silhouettes in Page (1982: 129), and as field photographs in Page (1988: 131 & 132). The two newly-found Edinburgh sheets appear to include specimens from both Guernsey and Cornwall.

As might be expected of a hybrid between two such morphologically differing parents, the frond form of the hybrid is variable between specimens. Previously-known original Victorian herbarium material (at BM and K) of this fern is sparse, and amounts to less in total than these new finds. The discovery of these well-preserved Edinburgh sheets thus not only doubles the amount of known herbarium material, but also helps add substantially to our knowledge of the variation pattern.

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A NEW SUBSPECIES OF *GYMNADENIA CONOPSEA* (L.) R.BR.

Gymnadenia conopsea (L.) R. Br. subsp. *borealis* (Druce) F. Rose, *comb. et stat. nov.*
Habenaria gymadenia Druce var. *borealis* Druce in *Rep. botl Soc. Exch. Club Br. Isl.* 5: 172 (1918).

Gymnadenia conopsea var. *borealis* (Druce) Godfrey, *Mon. Icon. Br. Orchidaceae* 143 (1933).
G. conopsea var. *insulicola* Heslop-Harrison in *Proc. Univ. Durham Phil. Soc.* **10**: 260 (1941).
G. odoratissima auct. angl., non (L.) Rich. (1817).

A compact plant with small, dark-pink to purple flowers; labellum about twice as long as broad, much less divided than in subsp. *conopsea*, though middle lobe broader than the lateral; sepals oval, acute. Flower scent strong, reminiscent of cloves. Flowering July and August.

Hill pastures up to 700 m, which may be acid, and apparently the predominant subspecies from Scotland southwards to Derbyshire, but also locally in Devon and Cornwall, and in the New Forest, Hampshire, in base-rich flushes, and one site in Ashdown Forest, Sussex.

A full account of the taxonomy of *G. conopsea* is in preparation.

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NEW NAMES AND COMBINATION FOR THREE HYBRIDS

Opinions differ over the use of names as opposed to formulae for interspecific hybrids, but where the hybrid has a distribution pattern independent of that of its parents, due to natural or man-assisted spread, it surely demands a name in its own right. The following fall into this category.

Atriplex × **taschereaui** Stace, **hybrida nova**

HOLORYPUS: Beckfoot, Cumberland, v.c. 70, England. Occasional on exposed coastal beach, 23 September 1978, P. M. *Taschereau s.n.* (LTR).

Hybrida fertilis inter *A. glabriuscula* Edmondston et *A. longipes* Drejer. Ab *A. glabriuscula* bracteolis nonnullis ad 20 mm longis, pedicellatis ad 10 mm, herbaceis apicibus differt. Ab *A. longipes* bracteolis connatis in dimidio inferiore, pedicellatis ad 10 mm differt. Ab *A. × gustafssoniana* Taschereau (*A. longipes* × *A. prostrata*) bracteolis connatis in dimidio inferiore differt.

Most plants are similar to *A. glabriuscula* in vegetative characters, but differ in at least some bracteoles being up to 20 mm long, herbaceous at the apex and with pedicels up to 10 mm long. The hybrid differs from *A. longipes* and other hybrids involving that species in having its bracteoles united at the base for up to half their length. *A. longipes* itself has even larger bracteoles (up to 25 mm) with longer pedicels (up to 25 (30) mm).

A. × taschereaui is named in honour of Dr Pierre Taschereau, who not only collected the holotype but has contributed much to our knowledge of this genus in Britain. Taschereau (1989) has provided a more detailed description and a drawing of this hybrid, which occurs on exposed beaches in Scotland, northern England and the Isle of Man, usually (but not always) with *A. glabriuscula* but usually without (and commoner than) *A. longipes*.

Mahonia × **decumbens** Stace, **hybrida nova**

HOLORYPUS: South of Newmarket to Cambridge road, West Suffolk, v.c. 26, England. In shady beech plantation, 2 July 1973, D. M. *McClintock s.n.* (BM).

Hybrida (? fertilis) inter *M. aquifolium* (Pursh) Nutt. et *M. repens* (Lindley) Don. A *M. aquifolium* foliolis (3–)7, hebetatis, minus quam duplo longioribus quam latis differt. A *M. repens* foliolis 4–8 cm longis, plus quam 1.5-plo longioribus quam latis differt.

This hybrid is closer to *M. repens* in habit, having procumbent, stoloniferous stems rarely more than 30 cm high and leaflets with a matt upper surface, but the leaflets are 4–8 × 2.4–4.5 cm (1.5 to 2 times as long as wide) with 8–11 teeth on each side.

This hybrid is a garden plant (often mis-named *M. repens*) to which several cultivar names refer.

Some untypified binomials might be applicable to this hybrid, but N. P. Taylor (Kew) has kindly advised me (in litt. 1989) “. . . if you really need a binomial I recommend you to publish a new name. The typification of the earlier names is too problematic and uncertain”. It is planted as ground cover, which is the origin of the Newmarket population, where it has been known for many years.

Doronicum* × *excelsum* (N.E.Br.) Stace, *comb. et stat. nov.

D. plantagineum var. *excelsum* N.E.Br. in *Gard. Chron.*, ser. 2, 20: 230 (1883).

This taxon is of garden origin, its most likely parentage being *D. columnae* Ten. × *D. pardalianches* L. × *D. plantagineum* L., as suggested by Leslie (1981).

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