THE FESCUE BLANKET OF RAT ISLAND

H. C. DAWKINS with help from ANN WESTCOTT

Walkers on Rat Island must always have noticed the thick, springy turf on the northern slope, where one almost fears to disappear onto some swallow-hole or cave lightly bridged over by matted vegetation. This natural thatching is formed almost entirely of red fescue (*Festuca rubra*), of phenomenal luxuriance and depth, doubtless resulting from years of freedom from grazing. So far as we know, after consulting Messrs. Gade, Dyke and Ogilvie, there have been no sheep or rabbits on the Rat for at least fifty years and probably longer, though there is a tradition that the Heavens may have cut fodder there occasionally.

In September 1973 a clumsily discharged flare caused a fire on the Western half of the island, which burnt the fescue blanket to ground level and opened the soil to the fascinating process of colonisation of bare ground by vegetation. But before recording how this has been happening, it is useful to look at the yet unburnt half of the Rat and its particular flora from which colonisers might most easily come.

One can distinguish clearly two dry-land sites on Rat Island—the top and the sides. The "top" slopes northwards from 5° to 20°, and is itself divisible into two, an unburnt NE and a burnt NW. The sides also divide into two, a very steep (60°-85°) south face and a much lower, wave-splashed northern cliff with seldom more than a 40° fall. Most of the flora can be found on all the sites if one looks hard enough, but differing greatly between them in frequency and luxuriance.

The NE top

It is here that red fescue forms its extraordinary blanket. We cut (and replaced) a couple of turves with a Millcombe carving-knife (also replaced), and dug around with bare hands in several other places. We found the green part of the grass sward to be sitting on top of a foot (30 cm) of its own past, densely interwoven like an expensive under-felt or a tightly packed hay-bale. Three layers could be distinguished:—

(1) a lower felted layer up to six inches (15 cm) thick, looking entirely dead like hay but containing numerous sinker roots connecting the living sward to mineral soil;

(2) a less dense middle layer about three inches thick composed of living stems and recently dead leaf-bases;

(3) an upper zone of green sward bringing the total height from mineral soil to flowering spikes up to about two feet (60 cm) in the most luxuriant places.

There is of course considerable variation in height, from the deepest soil and sward in some of the hollows to a much poorer grass mat on minor ridges and almost bare soil at the edge of the "top" site.

Scattered thinly throughout this *Festucetum* are the grasses yorkshire fog and white bent, with occasional seedlings, rosettes and clumps of kidney-vetch, sea beet, wild carrot, hogweed, cat's ear, sea campion and scentless mayweed (see fuller list at end of article). Also, making a not very effective take-over are two patches of bramble and honeysuckle, one near the summit and another near the central gulley. These form an ankle-catching thicket half a metre deep, the brambles often with thick and gnarled woody bases to the successive biennial shoots, borne on the top of the fescue felt and rooting down into it.

The NW top — the burn

The burn was obviously patchy but apparently destroyed the whole fescue blanket leaving bare soil over at least half the area, where only the deeper rooted perennials like bramble survived. The areas most severely burnt are now densely colonised by kidney-vetch, beet, sheeps-bit, stonecrop and cliff spurrey, with lesser quantities of almost all the remaining Rat Island species as listed later.

It appears that the kidney-vetch, stonecrop and spurrey got in first—but there are so many islets of lesser destruction with relics of the former festucetum that it is now too late to be sure of the earliest stages. There are already abundant seedlings of the grasses, plantains, vetch, yarrow and campion, so it will not be long before plant cover is entirely re-established, in a form much more varied than it was before the fire. This process will be worth watching—nowhere else on Lundy can it be seen to operate free of grazing.

The Sides

No part of this site was affected by the fire, nor does it differ noticeably from similar sites on the neighbouring Lametor peninsula. One find the usual plantains, samphire, stonecrop, thrift, wild carrot, sheeps-bit, yorkshire fog and red fescue—see the list given later.

The Problems

(1) The fescue blanket: how has this managed to accumulate without decay, and without any sogginess to produce anaerobic conditions? It is a little surprising to find so much "hay", so well provided with Lundy's rain, mists and spray, persisting in an apparently undecayed condition over more than half a century.

(2) The absentees: why no nettle or bracken—indeed why no bluebell, blackthorn nor Lundy cabbage? (Why "cabbage"? It's much more like a mustard and "Lundy mustard" sounds more stimulating and less banal).

(3) The bramble-honeysuckle thicket: small now, but is it spreading, static or retreating? A few fixed points or an accurate chart would settle this within a decade.

Distribution of species found.

(+) indicates present).	NE (Sward)	NW (Burnt)	N & S Cliffs
Grasses:—			
Agrostis stolonifera	+	−	−
Dactylis glomerata	+	+	−
Festuca rubra	+	+	+
Holcus lanatus	+	+	+
Forbs:—			
Achillea millefolium	−	+	−
Anthyllis vulneraria	+	+	−
Armeria maritima	+	−	+
Beta vulgaris subsp. maritima	+	+	−
Chenopodium album	−	−	+
Cirsium vulgare	+	−	−
Cochlearia danica	−	+	−
Crithmum maritimum	+	−	+
Daucus carota	+	+	+
Heracleum sphondylium	+	+	−
Hypochaeris radicata	+	−	−
Jasione montana	+	+	−
Lotus uliginosus	+	+	−
Plantago coronopus	−	+	+
Plantago lanceolata	−	+	+
Plantago maritima	−	−	+
Rumex acetosa	+	+	−
Sedum anglicum	−	+	+
Silene maritima	+	+	−
Sonchus asper	+	−	−
Spergularia rupicola	−	+	+

Distribution of species found.—contd.

Tripleurospermum maritimum	+	—	—
Vicia sativa subsp. angustifolia	—	+	—
Viola riviniana	—	+	—
Shrubs and climbers:—			
Lonicera peryclymenum	+	+	—
Rubus fruticosus	+	+	—
Fern:—			
Dryopteris dilatata	+	—	—

All names used in the sense of the Clapham, Tutin and Warburg Flora.

THE UGLY NANODRYMION

H. C. DAWKINS

As Elizabeth Hubbard has written—Lundy is far from being a wooded island—yet it possesses its own indigenous and elfin woodland, the dwarf (nano-) forest (-drymion) on the southern slope at Hangman's Hill below the Ugly. This community is an exquisite scale model of true high-forest. Canopy trees a metre in height bear epiphytes in their crowns and are festooned with perennial lianes. Beneath the "trees" is a scanty but distinct shrub understorey, and a rich herb layer and leaf litter covers the forest floor. Since this dwarf forest is new in the scale of vegetation change, and is apparently still changing, it seems worth while recording its present condition and speculating on its probable future.

The canopy consists mainly of blackthorn from ¼ to 1½ metres in height, much of it of tree form rather than shrub, having well defined trunks with apical branching rather than multiple branching from the base. Seedlings, saplings and poles abound so that the canopy appears to be maintaining itself. A typical mature tree 1·3 metres high, one of the largest, had seventeen growth-rings near the base, so the forest from which it was taken was at least of that age. In and around the dominants are occasional hawthorn and a lot of gorse, the latter apparently on the way out because one can find healthy young blackthorn beneath the gorse but no gorse—unless dead or stagnant—beneath blackthorn. Less frequent and usually taller are a few exotic *Veronica*, *Euonymus japonica*, *Escallonia* and *Pinus nigra*, and a few planted or possibly colonising holly, white-beam, turkey and English oak; however, these nowhere form more than isolated clumps and no seedlings were seen.

The epiphytes comprise several lichens, stupidly not collected and so unidentified (but see Noon and Hawksworth, Annual Report, 1972, p. 52).

The lianes—Honeysuckle is the only true liane present, but bramble is common, scrambling into the canopy but never retaining an upper position apparently because of frequent climatic damage to exposed overwintering shoots. The honeysuckle seems more robust and occasionally dominates. Ivy was seen only on the floor, never climbing.

The understorey: present but scantily represented by the evergreen wild madder and by bramble. All the remaining shade tolerant species except ivy were herbaceous, belonging to the next category.