

THE LUNDY CABBAGE

Although *Rhynchosinapis wrightii*, the Lundy Cabbage, is a frequent and readily recognisable plant on the cliffs and slopes around the neighbourhood of the landing beach, the unusual status of the plant, as one of Britain's relatively few island endemic species, remained unknown until comparatively recently, the plants being dismissed as forms of *Brassicella cheiranthos*, or, less plausibly, as Wild Cabbage, *Brassica oleracea*. In 1935, Dr. F. R. Elliston Wright, who had been studying the island flora, examined the population, and found that they did not correspond exactly with any of the known subspecies or varieties of these plants. Preserved specimens were sent to Professor O. E. Schulz, who named the Lundy plant *Brassicella wrightii* and wrote a description, published in the *Journal of Botany* for March 1936. In spite of the doubts expressed by Pugsley in the same year, the Lundy Cabbage has never been discovered elsewhere, and remains an indisputable island endemic, though, since this date, comparatively little studied. The species has since been placed in the genus *Rhynchosinapis*, by Dandy, based on its stalked leaves and certain floral characters.

Compared with the locally common *Rhynchosinapis monensis* (another endemic, confined to the west coast), the Lundy Cabbage may be readily differentiated by a more robust habit, up to three feet high, and a frequently purple stem, thickly clothed with simple deflexed hairs. Both the wide, pinnate basal leaves and the narrow stem leaves are also very hairy, a modification serving to counteract desiccation during the summer. The beautiful flowers are among the largest of the yellow Crucifers, being up to 2.5 cm in diameter, with 30-40 ovules in the hairy ovary, which are dispersed late in the season. Plants growing in dry rock clefts often lack basal leaves in the summer to prevent water loss, and they seem to be most pronounced in specimens growing in partial shade, and during the winter (Keble Martin calls them 'wet weather leaves'). The plant is a perennial of uncertain longevity (one marked plant was still flowering after five years), forming a rosette 'chamaephytic' form in the winter, similar to the rosettes produced by the immature plant. The flowers are self-fertile, but Coleoptera of the genus *Meligethes* are commonly found on the flowers, dusted with pollen, and I have found the plants frequently visited by flies and bees, so presumably cross-pollination does occur. The Lundy Cabbage is well-known for being the sole host plant of two endemic beetles, *Psylliodes luridipennis* Kuts and *Ceuthorrhynchus contractus* var. *pallipes* Crotch. Wright considered this to be evolutionary evidence of the plant's lengthy existence, probably dating from the early Pleistocene period. This theory envisages the separation of Lundy from the mainland for at least a million years and Neolithic man, known to have inhabited the island, apparently had to row or sail across. However island evolution can be relatively rapid, and it has been suggested that the Lundy Cabbage (2n8) is the natural tetraploid condition of *R. cheiranthos* (2n4). Nonetheless, specimens of the Lundy Cabbage transplanted into garden soil breed true, and its distinctive characteristics are retained.

My own notes on the Lundy Cabbage were taken during a week's visit to the island in June 1971, during which I was mainly preoccupied with seabirds, and are thus of a rather scanty nature. I was principally concerned with plotting the limits of the distribution of the plant and noting down the communities in which it grew. For the latter, I selected a series of sample areas, as representative as possible of the different localities in which the plant grew. The habitats of the Lundy Cabbage are the cliffs and steep slopes on the east side of Lundy, favouring exposed, generally open communities where the plants are subjected to high atmospheric humidity during the cooler months and great heat (at times) coupled with a high light intensity during the summer. Distribution appears to be governed by suitable cliff conditions for growth rather than any true maritime tendency, favouring south- and east-facing exposures, and rarely occurring on a north-facing slope. Though the plant is usually stated to be confined to the Devonian rocks in the south-east, this does not, in fact, appear to be the case, as a yellow Crucifer I have seen occurring sparingly and inaccessibly on the granite cliffs

near the Knight's Templar rock can only be this plant. The main centre of occurrence is, however, indubitably the south-eastern part of the island below the eastern granite/slate contact, where it grows on ledges and rocky slopes from below Miller's Cake to the Landing Beach (I have not seen the plant on the Lighthouse rock or Rat Island). Though the Lundy Cabbage is plentiful over most of this area, this quarter of a mile or so of cliff contains most of the world's population of the plant, and it is, perhaps, just as well that the plant looks superficially like certain common arable weeds, and is often ignored.

The broad areas where I briefly examined the plant together cover the majority of its locations, though, according to the residents of the island, numbers appear to vary from year to year (or more likely, flowering stems, as opposed to actual plants). I have recorded associated plants on a common/frequent/occasional/rare basis, as several of the localities were too inaccessible for recording with the more precise Domine cover scale.

Localities

1. Outcrops of granite cliff above a seaward slope, due south of the Knights' Templar rock. Here the plant is very local, probably confined to areas affording the maximum degree of shelter from the wind and rain. Unfortunately, due to highly inclement weather conditions, my own visit was very brief, and this area needs further investigation.

Associates on a narrow granite ledge with a thin layer of soil:

Sedum anglicum

Umbilicus rupestris

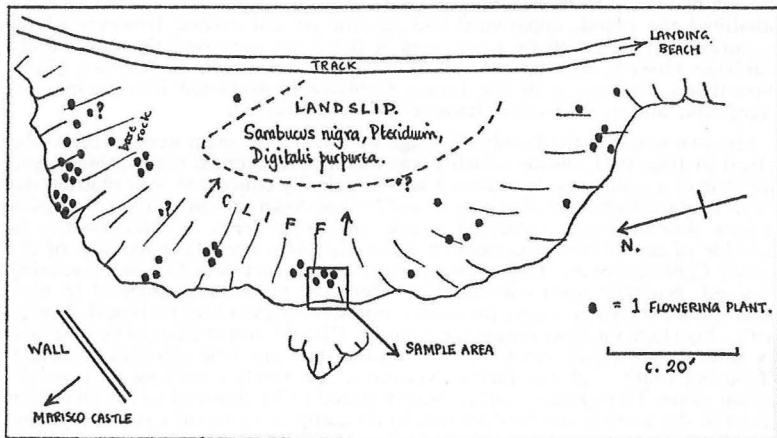
Holcus mollis

Rubus sp.

Spergularia rupicola

Lonicera periclymenum

2. Slate cliffs facing S.E., due east of Marisco Castle, cutting into the mainland following a series of landslips. Here the Lundy Cabbage is abundant, and I have plotted the distribution of plants by their basal rosettes, on an outline of the cliff. The plant favours the cliffs, slopes and ledges giving a maximum degree of exposure to light with a sheltered aspect. On the whole, a thin soil covering, frequently supporting a luxuriant vegetation, is preferred to crevices in the bare rock, and landslip scree where Elder and Foxglove grow are totally avoided.

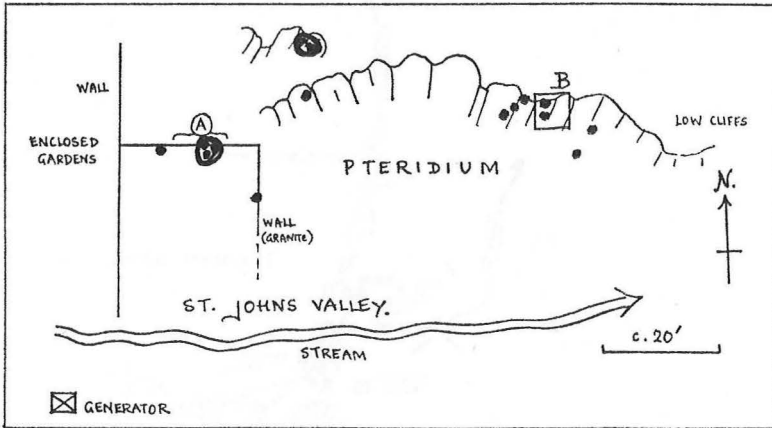


Associated vegetation:

<i>Dactylis glomerata</i>	c	<i>Urtica dioica</i>	o-f
<i>Festuca rubra</i>	c	<i>Digitalis purpurea</i>	o-f
<i>Rubus fruticosus</i> agg.	c	<i>Hedera helix</i>	f
<i>Chrysanthemum leucanthemum</i> f		? <i>Lamium purpureum</i>	o

The Lundy Cabbage shows a marked calcifuge tendency in all of its locations, which is unusual for a Crucifer, and avoids local calcareous outcrops such as the mortar in old walls where calcicoles such as *Anthyllis vulneraria* are sometimes found.

3. Small (less than 20 ft high) inland cliffs of Devonian slate, bordering the north side of the stream in St. John's Valley, to the south-east of Millcombe house. The Lundy Cabbage is locally frequent on the bare rock or, again, on ledges and slopes where a sparse vegetation grows on a thin soil profile. The plant has colonised old walls in the neighbourhood. In this area the plant is intolerant of shade provided by invading bracken, gorse and bramble, and specimens in partial shade are dwarf and poorly flowering.



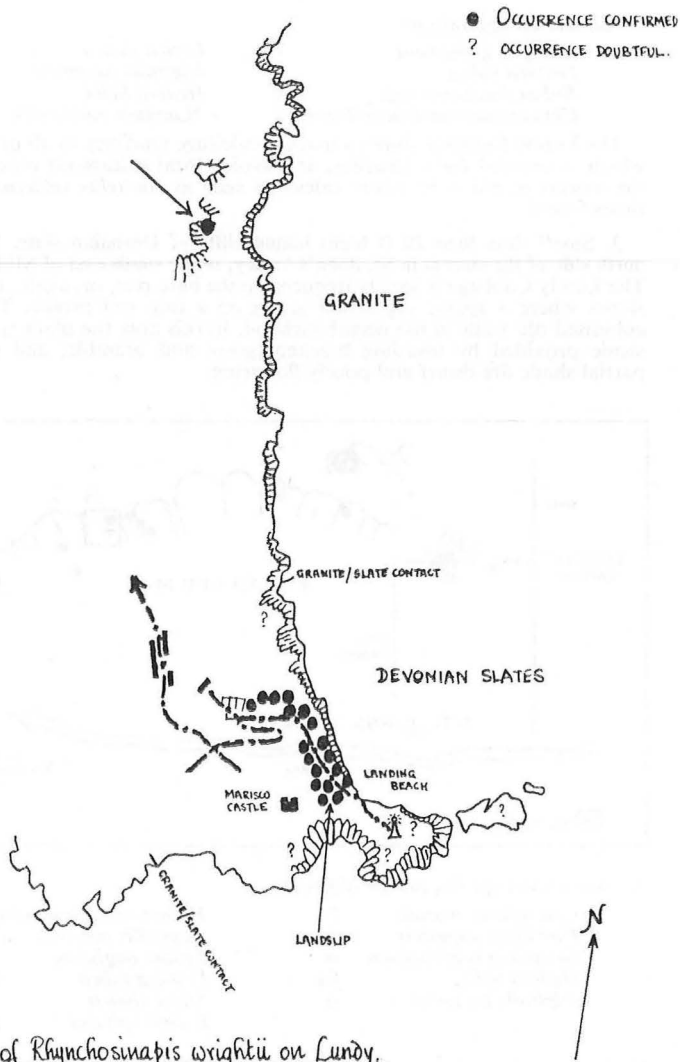
A. Associated species on the old wall:

<i>Cymbalaria muralis</i>	f-c	<i>Heracleum sphondylium</i>	r
<i>Umbilicus rupestris</i>	f	<i>Anagallis arvensis</i>	} wall
<i>Geranium robertianum</i>	o	<i>Sedum anglicum</i>	
<i>Hedera helix</i>	f-o	<i>Festuca rubra</i>	} only
<i>Digitalis purpurea</i>	o	<i>Silene dioica</i>	
		<i>Prunus spinosa</i>	

B. Associated species on a south-facing slate cliff:

<i>Silene maritima</i>	f	<i>Jasione montana</i>	o	n	indicate localised
<i>Rubus fruticosus</i>	f-c	<i>Leontodon autumnalis</i>	o-f	n	semi-calcareous
<i>Ulex europaeus</i>	f			n	conditions
<i>Holcus mollis</i>	o-f	? <i>Hypochaeris radicata</i>	o		
<i>Sedum anglicum</i>	o	(inaccessible)			

4. On slopes facing the sea, on the north side of the 'mouth' of St. John's Valley. The Lundy Cabbage grows in quantity on south-east facing gradients, often among open bracken cover casting a partial shade. The slender tap roots of the



Distribution of *Rhynchosinapis wrightii* on Lundy

c. 800 YARDS.

cabbage are presumably competing with the horizontal rhizomes of the bracken and will probably decrease here as the latter forms a denser canopy. Their survival in partial shade is probably due to the sunny aspect of the locality, without a shadow-forming cliff. No specimens were seen on the seaward slopes north of this locality, which are mainly invaded by bracken and *Rhododendron*.

5. On rock crevices and ledges, associated particularly with ivy on cliffs immediately above the sea, flanking the path leading from St. John's Valley to the landing beach. The Lundy Cabbage is more common on the gentler slopes between this path and the sea, where it often occurs competing successfully with other vegetation.

To sum up, the Lundy Cabbage is a calcifuge species favouring the sheltered conditions of the cliffs and gullies of the south-eastern part of the island, where it is well adapted for the widely differing seasonal changes, low mineral budget, and dangers from desiccation inherent in the habitat of the plant. The species favours maximum periods of direct sunlight in the summer, though is fairly tolerant of competition, even with some shade-casting species. The plant associations in which the Lundy Cabbage occurs, are of three broad types:

- (i) species growing in the clefts of bare acidic siliceous rock and walls;
- (ii) plants with, on the whole, shallow creeping roots, colonising thin humus cover on rock ledges and other pockets of mineral accumulation;
- (iii) turf covering the parent rock with a substantial, though thin, soil profile. The Lundy Cabbage favours well-drained shallow soil, which is often invaded with bracken.

These notes are not, of course, in any way intended to be the last word on the subject of the Lundy Cabbage, but rather as some sort of basis for a more detailed study of the plant and its relationship with the environment, which could provide a future research worker much rewarding study. In particular, the effects of re-colonisation after a landslip, the aggressive invasion of bracken into some existing localities, and the possible deprivation by grazing animals and tourists may be relevant if we are to ensure the survival of this interesting plant.

18.2.72

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REFERENCES

- The Flora of Devon*. 1939. W. Keble Martin. (Gives a concise summary of the papers by Wright and Pugsley.)
The Brassica of Lundy Island. *Journal of Botany* 1936, p. 323. H. W. Pugsley.
The Lundy Brassica, with some additions. *Journal of Botany* suppl. 1936. F. Elliston Wright.
On the origin of the Lundy Flora, with some additions. *Journal of Botany*, 1935, pp. 91-95. F. Elliston Wright.

THE PROPOSAL TO ESTABLISH A MARINE NATURE RESERVE AROUND LUNDY—PROGRESS

To date, 38 copies of the proposal have been sent to individuals and organisations directly connected with Lundy or interested in the establishment of marine reserves in Britain.

The proposals have been provisionally accepted by the Landmark Trust, they have been discussed and supported by the committee of the Lundy Field Society, and Mr. D. R. Shiers (Bristol Channel Divers Ltd.) has agreed to them in principal. The proposals have also been discussed with Mr. J. Dyke (Curator, Lundy Museum), and were presented and discussed at the Annual Symposium of the Underwater Association. Details of the proposals have been published in the following:

- Journal of the Devon Trust for Nature Conservation*
- Illustrated Lundy News*
- Nature*
- Triton* (Journal of the British Sub-Aqua Club)
- Underwater Association Newsletter*

Both from the discussions that have been held and correspondence received it is apparent that there is a great deal of interest in the proposed marine reserve and many helpful suggestions have been forthcoming.