

THE FLOWERING PLANTS AND FERNS OF DALE, PEMBROKESHIRE

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INTRODUCTION

The composition of the flora of any area is largely determined by the nature of its soil, its climate and by the effects produced by the presence of other plants and animals in the same surroundings. It is therefore important to consider these three factors when seeking to understand the composition of the Dale flora.

The geology of the peninsula has been described by Dresser (1959) but it may be noted here that most of the underlying rock formation is of Old Red Sandstone which has been planed down to a fairly uniform plateau by marine erosion. The whole area was subsequently glaciated and a large part of the plateau is now covered by a layer of boulder clay left behind by the retreating ice. Some of these areas tend to be badly drained as is well shown by the vegetation around Moorland Cottage. Elsewhere the soil derived from the Old Red Sandstone is only slightly acid, very fertile, and well drained by a number of small streams whose valleys are frequently marshy and therefore of considerable botanical interest. The greater part of the plateau surface ends abruptly in steep cliffs but there are two shingle beaches in the area of which Pickleridge is of especial interest. The lagoons behind Pickleridge were formed recently by the flooding of gravel pits, but to the north an extensive saltmarsh has formed in the valley of the Gann river.

The climate of Dale has been described by Oliver (1959) who gives figures showing that mild winters and cool summers are typical of the area. It is hardly surprising therefore to find that plants tend to come into flower in spring a fortnight or more earlier than in eastern England and that later in the season dates of flowering tend to lag behind those of other parts of the country where the summer temperatures are higher. Owing to the mild winters about fifty plants have been found in flower in December and January and these records have been added in parentheses after the normal dates of flowering. Oliver has also shown that although the rainfall is low, relative humidity is high throughout the year and it is tempting to relate the abundance of ferns and bryophytes with this factor. Thirty-two gales occur in an average year and, having analysed the wind directions in the area, Oliver (1960) describes the effect of wind on the vegetation in Dale. Salt-laden spray is undoubtedly deposited on the peninsula in large quantities but more information is required before the relative importance of this factor compared with other wind effects can be accurately assessed.

Dresser (*loc. cit.*), who has studied the Land Use of Dale parish in detail,

states that in 1956 55% of the total area of 1,825 acres was cultivated, 21% was rough pasture, 19% was land agriculturally unproductive, 2½% was covered by woodland and 2½% by houses and gardens. The reader is referred to her paper for detailed information about the distribution of each category but the positions of the woods, marshes and other habitats which are of especial interest botanically are shown on the map.

Although it has been possible for individuals to visit almost the whole parish at various times, difficulties over obtaining permission for students to visit private property have considerably hampered studies on the ecology of the area. Much work has been carried out on the vegetation of the cliffs and saltmarsh where no difficulties arise over rights of access but few detailed studies have been possible on other types of plant habitat.

The area covered in this list includes the parish of Dale and the saltmarsh as far north as Mullock Bridge. Plants which have obviously been deliberately introduced into gardens within the area are omitted. Thus Holly, *Ilex aquifolium*, the Tea-plant, *Lycium chinense* and *Polygonum cuspidatum* are not included even though they are common in the village. Nomenclature follows Dandy (1958), names used by Clapham *et al.* (1952) are added in brackets where they are not the same as those given by Dandy, aliens are marked by asterisks. In describing the degrees of abundance of plants, the system outlined by Tansley (1946) has been employed. This involves the use of the terms dominant, very abundant, abundant, frequent, occasional, rare and very rare.

The list is based on a survey made between June 1959 and October 1960 but many records which had accumulated in the Field Centre's card index since 1947 have been incorporated. The names of those who made such records are acknowledged below. I am responsible for those entries which are not followed by an observer's initials. I am grateful to Mr. A. E. Wade of the National Museum of Wales for determining material I have sent him, to Dr. P. W. Ball for examining the species of *Salicornia*, and to Dr. C. E. Hubbard and Professor T. G. Tutin for help over *Fagopyrum* and *Zostera* respectively. I should also like to thank my wife for her assistance in preparing the map and Mr. Barrett for his interest and encouragement.

It is almost inevitable that any list of this nature will be incomplete and this account of the plants of Dale will certainly be no exception. It is offered in the hope that it will stimulate further interest in the Dale Flora and that its appearance will lead to many additional records being made for the area.

List of those who have recorded plants at Dale between 1947 and 1960.

Mr. F. W. Adams	Dr. P. S. Green
Dr. S. E. Arney	Mr. E. W. Groves
Mr. F. J. Bingley	Dr. F. N. Hepper
Mr. J. H. Barrett	Mr. S. W. Mason
Dr. E. H. Chater	Dr. N. M. Moore
Mr. P. J. Conder	Mr. J. Moyse
Mr. J. W. Cowan	Dr. C. D. Pigott
University College, Cardiff	Dr. S. Percival
(parties led by Prof. R. C. McLean	Mr. D. Ratcliffe
and Dr. W. R. Ivimey-Cook)	Mr. J. C. Rigg
Dr. G. T. Goodman	Dr. A. J. Rutter

Dr. J. S. Ryland
Mr. C. A. Sinker
Mr. M. G. Shives
Dr. A. D. Skelding
Miss E. M. Thomas

Miss S. Y. Townend
Mr. T. A. Warren-Davis
Mr. J. Webster
Dr. F. H. Whitehead

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PTERIDOPHYTA

SPHENOPSIDA

EQUISETACEAE

Equisetum variegatum, VARIEGATED HORSETAIL. Recorded in 1957 from the sandpit beside the Crabhall-saltmarsh track by CDP.

Equisetum fluviatile, WATER HORSETAIL. Frequent in Spedlands marsh.

Equisetum arvense, COMMON HORSETAIL. Frequent in hedgebanks and marshy ground near Crabhall Farm.

PTEROPSIDA

OSMUNDACEAE

Osmunda regalis, ROYAL FERN. Seen beside Castlebeach stream by FJB in 1948.

DENNSTAEDTIACEAE

Pteridium aquilinum, BRACKEN. Generally very abundant.

BLECHNACEAE

Blechnum spicant, HARD FERN. One small colony recorded in 1953 from Castlebeach Wood by MGS.

ASPLENIACEAE

Phyllitis scolopendrium, HART'S-TONGUE FERN. Generally abundant, especially in the wood north of the Castle.

Asplenium adiantum-nigrum ssp. **adiantum-nigrum**, BLACK SPLEENWORT. Occasional on walls and banks in the village, the Fort, Thorny Pit, roadside near Snailston and on Mullock Bridge.

Asplenium marinum, SEA SPLEENWORT. Frequent in rock crevices on cliffs.

Asplenium trichomanes, MAIDENHAIR SPLEENWORT. Locally abundant on walls in the village and on Mullock Bridge.

Asplenium ruta-muraria, WALL-RUE. Locally abundant on walls within the Fort, at Thorny Pit and on Mullock Bridge.

Ceterach officinarum, RUSTY-BACK FERN. Frequent on Mullock Bridge and recorded in 1949 from walls east of the Post Office by ADS and near the Church by MGS in 1953.

ATHYRIACEAE

Athyrium filix-femina, LADY FERN. Locally frequent in shady hedgerows, marshy ground and in Castlebeach Wood. Variable.

ASPIDIACEAE

Dryopteris filix-mas, MALE FERN. Abundant in hedgerows and frequent in woods.

Dryopteris borreeri. Abundant in Castlebeach Wood and occasional in Hayguardhay Wood.

Dryopteris dilatata, BROAD BUCKLER-FERN. Occasional in woods and shady hedgerows.

Polystichum setiferum, SOFT SHIELD-FERN. Frequent in woods and shady hedgerows.

POLYPODIACEAE

Polypodium vulgare, POLYPODY. Locally frequent in woods and hedgebanks.

SPERMATOPHYTES

GYMNOSPERMAE

PINACEAE

***Larix decidua**, LARCH. Small wind-blown plantation near the Cemetery. Occasional trees established in Hayguardhay Wood.

Pinus sylvestris, SCOTS PINE. Several trees established in Point Wood and in the plantation near the Cemetery.

***Pinus radiata**. Three trees established in Castlebeach Wood.

***Cupressus macrocarpa**, MONTEREY CYPRESS. Five trees established in Castlebeach Wood, one in Hayguardhay Wood.

ANGIOSPERMAE

RANUNCULACEAE

Caltha palustris, KINGCUP. Abundant in Spedlands Marsh. Fl. 4-5.

***Aconitum compactum**, MONKSHOOD. Several plants naturalised near the ruined limeburner's cottage in Castlebeach Wood. Fl. 6-7.

Anemone nemorosa, WOOD ANEMONE. Seen in 1948 in Castlebeach Wood by JHB.

Clematis vitalba, TRAVELLER'S JOY. Locally abundant in hedges near Cliff Cottages and occasional on the northern wall of the Castle. Fl. 5-9.

Ranunculus acris, MEADOW BUTTERCUP. Frequent on roadside verges and rough ground on Dalehill and the aerodrome. Occasional elsewhere. Fl. 5-9.

Ranunculus repens, CREEPING BUTTERCUP. Abundant, especially in damp places. Fl. 4-8 (1).

Ranunculus bulbosus, BULBOUS BUTTERCUP. Abundant in grassy places. Fl. 4-6.

Ranunculus sardous, HAIRY BUTTERCUP. Small colony in rough ground near Hook Vale. Fl. 5-6.

Ranunculus flammula, LESSER SPEARWORT. Abundant in marshy ground. Fl. 5-9.

Ranunculus sceleratus, CELERY-LEAVED CROWFOOT. Frequent beside Crabhall-saltmarsh track. Fl. 7-9. Single plants found at Castlebeach and Mullock Bridge by FNH in 1954.

Ranunculus hederaceus, IVY-LEAFED CROWFOOT. Abundant in streams and marshy ground. Fl. 4-8.

Ranunculus ficaria, LESSER CELANDINE. Very abundant in woods, hedgebanks and roadsides. Fl. 3-5 (1).

PAPAVERACEAE

Papaver rhoeas, FIELD POPPY. Occasional in arable and waste land. Fl. 6-8.

Meconopsis cambrica, WELSH POPPY. Established in the Fort moat. Fl. 6-7.

Glaucium flavum, YELLOW-HORNED POPPY. Frequent on the seaward side of Pickleridge until 1957. Severe erosion caused by subsequent winter gales destroyed most of this colony and only one plant could be found in 1960. The same year a group of 18 plants was found by TAW-D on the north-west side of the "breach". Fl. 6-7.

Chelidonium majus, GREATER CELANDINE. Frequent in hedgebanks near Townsend. Fl. 5-7.

FUMARIACEAE

Fumaria capreolata, RAMPING FUMITORY. Frequent on walls, hedgebanks and Pickleridge. Fl. 6-9.

Fumaria purpurea. A few plants found by TAW-D. on Pickleridge in 1959 (Det. F. H. Perring).

Fumaria bastardii, FUMITORY. Abundant in arable land and on Pickleridge. Fl. 5-9.

Fumaria muralis ssp. **boraiei**. Abundant in arable and waste land, hedgerows and Pickleridge. Fl. 5-9.

Fumaria officinalis. Locally abundant in arable land. Fl. 5-9.

CRUCIFERAE

***Brassica napus**, RAPE. Occasional in arable land as a relict of cultivation. Fl. 5-8.

***Brassica rapa**, TURNIP. Abundant in arable land and hedgerows. Fl. 5-9.

***Sinapis alba**, WHITE MUSTARD. Abundant in fallow land near Kete in 1960. Fl. 6-8.

Raphanus maritimus, SEA RADISH. Frequent at the mouth of the stream at Castlebeach. Fl. 5-8.

Cakile maritima, SEA ROCKET. Single plant found growing vigorously in sand on Pickleridge in 1960. This species was not present before this year and it is tempting to relate its appearance with the large quantity of sand which was blown up onto this beach during the winter of 1959-60. Fl. 6-10.

Lepidium heterophyllum (L. **smithii**), SMITH'S CRESS. Frequent in arable land, hedgebanks and Pickleridge. Fl. 5-8.

***Coronopus didymus**, LESSER SWINE-CRESS. Abundant on arable and waste land and Pickleridge. Fl. 6-9.

Capsella bursa-pastoris, SHEPHERD'S PURSE. Locally abundant in cultivated and waste land. Fl. 1-12.

Cochlearia officinalis, SCURVY-GRASS. Abundant on cliffs and frequent on hedgebanks away from the sea. Fl. 3-8. Frequent on the saltmarsh, especially on its upper parts. Fl. 4-5.

Cochlearia danica, DANISH SCURVY-GRASS. Abundant on exposed cliffs and frequent on walls and roadsides near the sea. Fl. 3-5.

Cochlearia anglica, LONG-LEAVED SCURVY-GRASS. Occasional in the upper saltmarsh near Jubilee. Fl. 4-6.

Erophila spathulata, WHITFLOW GRASS. Locally abundant on walls around Point Farm and near the Castle. Fl. 3-4.

- ***Armoracia rusticana**, HORSE RADISH. Observed in 1954 on waste ground near the Cemetery by FNH.
- Cardamine pratensis**, LADY'S SMOCK. Frequent in Keystacks, Spedlands, Mill Bay and Watwick marshes and damp roadsides on Dalehill. Fl. 4-6.
- Cardamine flexuosa**, WOOD BITTER-CRESS. Frequent beside Castlebeach and Hayguardhay streams, in Spedlands, Watwick and Red Cliff marshes and roadsides near Broomhill Farm and on Dalehill. Fl. 4-8.
- Cardamine hirsuta**, HAIRY BITTER-CRESS. Very abundant in woods, hedgerows, cultivated and waste land. Fl. 3-8.
- Rorippa nasturtium-aquaticum** (**Nasturtium officinale**), WATERCRESS. Frequent in streams and ponds in Westdale valley, Dalehill, Watwick, Gunkle and near Spedlands. Fl. 5-8.
- Rorippa microphylla** (**Nasturtium microphyllum**), ONE-ROWED WATERCRESS. Frequent in the pond south-west of Mill Bay and in Keystacks marsh. Fl. 5-8.
- Rorippa microphylla** \times **nasturtium-aquaticum** = **Rorippa** \times **sterilis**. Frequent in Spedlands and Watwick marshes and in the stream south of the Castle. Fl. 5-8.
- Alliaria petiolata**, GARLIC MUSTARD. Recorded as a casual on tipped earth near Mullock Bridge by FNH in 1954.
- Sisymbrium officinale**, HEDGE MUSTARD. Abundant in waste land and grassy places. Fl. 6-8 (1).
- Arabidopsis thaliana**, THALE CRESS. Frequent on roadside wall between the Cemetery and the Post Office. Observed within the Fort by FNH in 1954. Fl. 4-5.

RESEDACEAE

- Reseda luteola**, DYER'S ROCKET. Locally frequent in hedgerows near Blockhouse and by Watwick path. Occasional on Pickleridge. Fl. 7-6.

VIOLACEAE

- Viola riviniana**, COMMON VIOLET. Generally abundant. Fl. 3-8.
- Viola canina**, HEATH VIOLET. Frequent at the top of Red Cliff. Fl. 5.
- Viola canina** \times **riviniana** = **Viola** \times **militaris**. Recorded from the top of Red Cliff by DMM in 1956. See Biological Flora. L.C. (Ed. 11) No. 190 in *J. Ecol.*, **46**, 527-535.
- Viola lactea**, PALE HEATH VIOLET. Frequent at the top of Red Cliff. Fl. 5.
- Viola lactea** \times **riviniana**. Recorded by DMM from the same locality in 1956.
- Viola tricolor**, WILD PANSY. Frequent in arable land near Point Farm and occasional on Pickleridge. Fl. 5-7.
- Viola arvensis**, FIELD PANSY. Abundant in arable land, especially near Point Farm. Fl. 5-8.

POLYGALACEAE

- Polygala vulgaris** (includes *P. oxyptera*), COMMON MILKWORT. Frequent in short turf on the north side of Watwick, at Westdale and on the aerodrome. Fl. 5-8 (1).
- Polygala serpyllifolia**, COMMON MILKWORT. Frequent at the top of Red Cliff. Fl. 5-7.

GUTTIFERAE (= HYPERICACEAE)

- Hypericum androsaemum**, TUTSAN. Frequent in the Fort road hedgebanks and on cliffs at Watwick. Rare in Castlebeach and Hayguardhay Woods. Fl. 6-7.
- Hypericum perforatum**, COMMON ST. JOHN'S WORT. Occasional on roadside near Blockhouse, Cliff Cottages and Mullock Bridge. Fl. 7-9.

- Hypericum tetrapterum**, SQUARE-STEMMED ST. JOHN'S WORT. Frequent in damp ground near Spedlands, Brunt, Crabhall and Point Farm. Fl. 7-9.
- Hypericum humifusum**, TRAILING ST. JOHN'S WORT. Frequent in fields near Point Farm. Fl. 7-9. Found by FNH at Westdale in 1954.
- Hypericum pulchrum**, SLENDER ST. JOHN'S WORT. Frequent at Frenchman's Path. Fl. 6-8. Recorded from roadside near Maryborough Farm by FJB in 1948 and from Mill Bay slopes by UCC in 1949.

CARYOPHYLLACEAE

- Silene vulgaris** (*S. cucubalus*), BLADDER CAMPION. Two small colonies; one in hedgebank near Blockhouse, the other near the walled gardens on St. Ann's Head. Fl. 6.
- Silene maritima**, SEA CAMPION. Very abundant on cliffs and banks near the sea. Fl. 3-10.
- Silene gallica** (*S. anglica*), SMALL-FLOWERED CATCHFLY. Frequent in arable land. Fl. 6-8.
- Silene dioica** (*Melandrium rubrum*), RED CAMPION. Generally very abundant. Fl. 1-12.
- Lychnis flos-cuculi**, RAGGED ROBIN. Frequent in Mill Bay, Spedlands, Crabhall and Keystacks marshes. Fl. 5-8 (1).
- Saponaria officinalis**, SOAPWORT. Grows abundantly on hedgebank outside the Church. Occasional on Dalehill. Fl. 8-9.
- Cerastium holosteoides** (*C. vulgatum*), COMMON MOUSE-EAR CHICKWEED. Generally abundant.
- Cerastium glomeratum**, STICKY MOUSE-EAR CHICKWEED. Generally abundant. Fl. 4-6.
- Cerastium atrovirens** (*C. tetrandrum*), DARK-GREEN MOUSE-EAR CHICKWEED. Abundant on cliffs and banks near the sea. Very variable. Fl. 3-6.
- Stellaria media**, CHICKWEED. Generally very abundant. Fl. 1-12.
- Stellaria neglecta**, GREATER CHICKWEED. Abundant in shady hedgerows and woods. Fl. 4-6.
- Stellaria holostea**, GREATER STITCHWORT. Abundant in hedgerows. Fl. 4-6.
- Stellaria graminea**, LESSER STITCHWORT. Abundant in hedgerows and grassy places. Fl. 5-10.
- Stellaria alsine**, BOG STITCHWORT. Abundant in marshy ground. Fl. 5-8.
- Sagina ciliata**, CILIATE PEARLWORT. Frequent in cliff grassland on Great Castle Head and seen by FNH in 1954 on cliffs north of Westdale. Fl. 5.
- Sagina maritima**, SEA PEARLWORT. Frequent in short turf on the south side of St. Ann's Head. Fl. 5.
- Sagina procumbens**, PROCUMBENT PEARLWORT. Generally abundant. Fl. 5-9.
- Sagina subulata**, AWL-LEAVED PEARLWORT. Locally frequent on Great Castle Head, Pickleridge, and in short turf on the aerodrome. Fl. 4-5.
- Sagina nodosa**, KNOTTED PEARLWORT. A strong colony found by TAW-D in the quarry beside the Crabhall-saltmarsh track in 1960.
- Honkenya peploides**, SEA SANDWORT. Abundant on Dale Beach in 1949 (JHB). Now confined to small area at northern end of same locality. This reduction is probably due to the increasing number of boats kept on the beach. Occasional plants were noted by JHB on Pickleridge in 1949. Fl. 5-6.
- Arenaria serpyllifolia**, THYME-LEAVED SANDWORT. A single plant was found by TAW-D on the wall of Crabhall Farmyard in 1960.

- Spergula arvensis**, CORN SPURREY. Generally very abundant in arable land. Fl. 4-8.
- Spergularia rubra**, SAND-SPURREY. Observed by TAW-D near the village Hall in 1959.
- Spergularia rupicola**, CLIFF SAND-SPURREY. Generally abundant on cliffs and walls near the sea. Fl. 5-9.
- Spergularia media** (*S. marginata*). Frequent on the saltmarsh, especially in the Armerietum. Fl. 5-9.
- Spergularia marina** (*S. salina*). Frequent on gravelly substrata near the lagoons. Fl. 5-9.

ILLECEBRACEAE

- Scleranthus annuus** *sensu lato*, ANNUAL KNAWEI. Frequent in arable land near Point Farm. Fl. 6-8.

PORTULACAEAE

- Montia fontana**, BLINKS. Abundant in ponds near Point Farm and south of Mill Bay and also at Dalehill, Watwick and Westdale valley. Locally abundant in exposed cliff grassland at Westdale and Dale Point. Fl. 3-6.

AIZOACEAE

- ***Carpobrotus edulis**, HOTTENTOT FIG. Naturalized on cliffs at Dale Point and spreading slowly. Fl. 6-7.

CHENOPODIACEAE

- Chenopodium album**, FAT HEN. Very abundant in arable land. Fl. 6-9.
- Beta vulgaris** ssp. *maritima*, SEA BEET. Abundant on exposed cliffs and banks near the sea. Fl. 6-9 (1).
- Atriplex patula**, COMMON ORACHE. Very abundant in arable and waste land. Fl. 8-9.
- Atriplex hastata**, HASTATE ORACHE. Very abundant on beaches at Watwick, Mill Bay, Castlebeach and Pickleridge. Fl. 7-9.
- Halimione portulacoides**. Abundant on well-drained ground on the saltmarsh and near the lagoons. Fl. 6-8.
- Suaeda maritima**, ANNUAL SEABLITE. Locally abundant on the saltmarsh, especially in the Halimionetum and the upper parts of the Salicornietum. Fl. 8-9.
- Salicornia ramosissima** Woods, GLASSWORT. Abundant in the lower part of the saltmarsh with *S. dolichostachya* and *S. lutescens* and small plants very abundant in the Limonietum and Armerietum with *S. pusilla*. Procrumbent forms frequent in the saltmarsh track. Fl. 8. Det. PWB.
- Salicornia pusilla** Woods. Abundant in the upper parts of the marsh, especially the Limonietum. Fl. 8.
- Salicornia dolichostachya** Moss. Very abundant in the lower parts of the marsh, occasional in the track and in salt pans. Fl. 8. Det. PWB.
- Salicornia lutescens** P. W. Ball & Tutin. Frequent in the Salicornietum in the lower part of the marsh but not so common as *S. dolichostachya* or *S. ramosissima*. Fl. 8. Det. PWB.

MALVACEAE

- Malva sylvestris**, COMMON MALLOW. Locally frequent on roadsides and hedgebanks. Fl. 6-8.
- Malva neglecta**, DWARF MALLOW. Found as a casual on Pickleridge in 1958.

Lavatera arborea, TREE MALLOW. Frequent on cliffs and waste ground at St. Ann's Head and Townsend. Fl. 6-8.

LINACEAE

Linum catharticum, PURGING FLAX. Frequent in cracks in the aerodrome runways and near the top of Red Cliff. Recorded by UCC from Mill Bay slopes in 1949 and seen above Westdale by ASR in 1957. Fl. 6-8.

GERANIACEAE

Geranium pratense, MEADOW CRANESBILL. Naturalized in a field margin between Kete and Snailston Farm. Fl. 7-8.

Geranium columbinum, LONG-STALKED CRANESBILL. Recorded in 1951 from roadside near Moorlands Cottage by PSG.

Geranium dissectum, CUT-LEAVED CRANESBILL. Abundant in hedgerows and grassy places. Fl. 1-12.

Geranium molle, DOVE'S-FOOT CRANESBILL. Abundant in hedgerows and grassy places. Fl. 1-12.

Geranium pusillum, SMALL-FLOWERED CRANESBILL. Observed by JHB within the Fort in 1948.

Geranium robertianum, HERB ROBERT. Generally very abundant. Fl. 1-12.

Erodium maritimum, SEA STORKSBILL. Abundant on cliffs and waste places. Fl. 3-7.

Erodium moschatum, MUSK STORKSBILL. Locally frequent on walls and roadsides near Townsend. Fl. 4-5.

Erodium cicutarium (ssp. *cuticularium*?), COMMON STORKSBILL. Abundant in short turf on Great Castle Head and Pickleridge. Frequent on cliffs and hedgebanks elsewhere. Variable and requires specialist attention. Fl. 3-9 (1).

OXALIDACEAE

Oxalis acetosella, WOOD SORREL. Abundant in Castlebeach Wood. Fl. 3-4.

***Oxalis articulata** (*O. floribunda*). Naturalized near houses in several places. Also a strong colony on cliff top at Dale Point. Fl. 4-10.

ACERACEAE

***Acer pseudoplatanus**, SYCAMORE. Abundant in woods and hedgerows. Fl. 4-5.

***Acer platanoides**, NORWAY MAPLE. Recorded by ADS from Hayguardhay Wood in 1951.

LEGUMINOSAE

Ulex europaeus, GORSE. Generally very abundant. Fl. 10-6.

Ulex gallii, DWARF FURZE. Abundant on the aerodrome, Watwick cliffs, Mill Bay slopes and hedgerows near Kete. Fl. 7-9.

Sarothamnus scoparius ssp. *scoparius*, BROOM. Single plant in hedgerow beside the track between Broomhill and Keystacks marsh.

ssp. *maritimus* (*prostratus*). Frequent on cliffs between St. Ann's Head and Red Cliff. Fl. 5-6.

Ononis repens, RESTHARROW. Locally abundant on cliffs and in hedgerows. Fl. 6-8.

Medicago lupulina, BLACK MEDICK. Frequent in waste places. Fl. 5-8.

Medicago arabica, SPOTTED MEDICK. Locally abundant on hedgebanks in the village and on Pickleridge. Fl. 5-7.

Trifolium ornithopodioides (*Trigonella ornithopodioides*), BIRDSFOOT FENUGREEK.

Observed abundantly on Pickleridge by CDP in 1953.

Trifolium pratense, RED CLOVER. Generally very abundant. Fl. 5-9.

Trifolium medium, ZIGZAG CLOVER. A few plants beside the road near Blockhouse. Fl. 6-8. Det. AEW.

Trifolium arvense, HARE'S-FOOT. Frequent in exposed cliff grassland, sometimes very abundant and locally dominant on St. Ann's Head in 1958. Fl. 6-7.

Trifolium striatum, SOFT TREFOIL. Locally frequent on Pickleridge. Fl. 4-5.

Trifolium scabrum, ROUGH TREFOIL. Locally abundant in exposed cliff grassland at Great Castle Head, Dale Point and near Hook Vale. Also frequent on Pickleridge. Fl. 5-8.

Trifolium subterraneum, SUBTERRANEAN TREFOIL. Locally abundant in short turf near Castlebeach path, above Westdale and on Pickleridge. Fl. 5-6.

Trifolium repens, WHITE CLOVER. Generally abundant. Fl. 6-9.

Trifolium campestre, HOP TREFOIL. Frequent in grassy and waste places. Fl. 6-9.

Trifolium dubium, LESSER YELLOW TREFOIL. Generally abundant. Fl. 5-9.

Trifolium micranthum, SLENDER TREFOIL. Recorded from Dale Point by JHB in 1948 and from Fort roadside by FNH in 1954.

Anthyllis vulneraria, KIDNEY-VETCH. Abundant in exposed cliff grassland and on waste ground near the sea. Fl. 4-8.

Lotus corniculatus, BIRDSFOOT TREFOIL. Generally abundant. Fl. 5-9.

Lotus uliginosus, LARGE BIRDSFOOT TREFOIL. Locally abundant in damp places. Fl. 6-9.

Lotus hispidus, HAIRY BIRDSFOOT TREFOIL. Locally abundant in exposed cliff grassland. Recorded in 1953 from Westdale and Mill Bay by CDP. Very abundant in hay field north of Castlebeach in 1960 and occasional plants on Dale Point. Fl. 6-9.

Ornithopus perpusillus, BIRDSFOOT. Frequent in exposed cliff grassland and on Pickleridge. Fl. 4-8.

Vicia hirsuta, HAIRY TARE. Occasional in hedgerows and grassy places. Fl. 6-8.

Vicia tetrasperma, SMOOTH TARE. Recorded by FNH from waste ground within the Fort in 1954.

Vicia cracca, TUFTED VETCH. Abundant in grassy places. Fl. 6-8.

***Vicia sativa**, COMMON VETCH. Generally abundant. Variable forms det. AEW. Fl. 4-8.

Lathyrus pratensis, MEADOW VETCHLING. Abundant in grassy places. Fl. 6-8.

Lathyrus sylvestris, NARROW-LEAVED EVERLASTING PEA. Small colony amongst scrub near Frenchman's Path. Fl. 8-9.

ROSACEAE

Filipendula ulmaria, MEADOWSWEET. Abundant in marshy ground. Fl. 6-9 (1).

Rubus fruticosus agg. BLACKBERRY. Generally very abundant. Fl. 7-12. The segregates of this group require detailed investigation.

Potentilla palustris, MARSH CINQUEFOIL. Rare in Spedlands Marsh. Fl. 5.

Potentilla sterilis, BARREN STRAWBERRY. Frequent in hedgebanks. Fl. 1-4.

Potentilla anserina, SILVERWEED. Generally abundant in waste places and frequent in sand on the seaward side of Pickleridge. Fl. 5-8.

Potentilla erecta, COMMON TORMENTIL. Abundant in grassy places. Fl. 5-8.

Potentilla anglica, TRAILING TORMENTIL. Occasional in hedgerow beside the Fort road and found by JSR in cliff grassland near Great Castle Head in 1959. Fl. 7-8.

- Potentilla reptans**, CREEPING CINQUEFOIL. Abundant in grassy places. Fl. 5-8.
Fragaria vesca, WILD STRAWBERRY. Seen in Castlebeach Wood by FJB in 1948.
Geum urbanum, WOOD AVENS. Frequent in woods and shady hedgerows. Fl. 6-8 (1).
Agrimonia eupatoria, COMMON AGRIMONY. Frequent on roadsides and hedgerows. Fl. 6-9.
Agrimonia odorata, FRAGRANT AGRIMONY. Occasional in hedgerows and amongst scrub. Fl. 7-9.
Aphanes microcarpa, PARSLEY PIERT. Locally frequent in short turf. Fl. 4-7.
Rosa arvensis, FIELD ROSE. Several plants in roadside hedge to the west of Spedlands Fl. 6-7.
Rosa pimpinellifolia (**R. spinosissima**), BURNET ROSE. Locally frequent in cliff scrub to the north of Mill Bay and above the Fort jetty. Fl. 6-7.
Rosa canina, DOG ROSE. Occasional in hedges and scrub. Fl. 6.
Prunus spinosa, BLACKTHORN. Generally very abundant. Fl. 3-5.
Crataegus monogyna, HAWTHORN. Abundant in hedges and scrub. Fl. 5-6.
***Malus sylvestris** ssp. **mitis**, APPLE. Several plants established at the southern end of Hayguardhay Wood. Fl. 5.

CRASSULACEAE

- Sedum telephium** ssp. **purpurascens**, ORPINE. Reported by EWG from hedgerow near bottom of Fort road in 1950 and seen by FNH at Frenchman's Path in 1954.
Sedum anglicum, ENGLISH STONECROP. Very abundant on cliffs and banks near the sea. Fl. 5-7.
Sedum album, WHITE STONECROP. A few plants established by the roadside near Cliff Cottages. Fl. 7.
Umbilicus rupestris, PENNYWORT. Very abundant in hedgebanks and locally abundant in rock crevices on cliffs. Fl. 6-7.

SAXIFRAGACEAE

- Chrysosplenium oppositifolium**, OPPOSITE-LEAVED GOLDEN SAXIFRAGE. Locally very abundant in Castlebeach Wood. Occasional beside streams and ponds in Blue Anchor and Hayguardhay Woods, at Watwick and near Spedlands. Fl. 4-6 (1).

GROSSULARIACEAE

- Ribes sylvestre**, RED CURRANT. A few plants at the southern end of Hayguardhay Wood.

LYTHRACEAE

- Lythrum salicaria**, PURPLE LOOSESTRIFE. Abundant in Spedlands, Crabhall, Mill Bay, Watwick and Keystacks marshes. Fl. 6-9.

ONAGRACEAE

- Epilobium hirsutum**, GREAT HAIRY WILLOW-HERB. Abundant near Spedlands and Dalehill, locally frequent at Mill Bay and near Maryborough and Crabhall Farms. Fl. 7-9.
Epilobium parviflorum, SMALL-FLOWERED HAIRY WILLOW-HERB. Frequent in damp places. Fl. 7-9.
Epilobium montanum, BROAD-LEAVED WILLOW-HERB. Frequent in hedgerows and waste ground. Fl. 6-8.
Epilobium obscurum. Frequent in damp places. Fl. 6-8.

Chamaenerion angustifolium, ROSEBAY WILLOW-HERB. A strong colony amongst scrub near Cliff Cottages. Occasional near disused huts south of Moorland Cottage. Fl. 6-7.

***Oenothera biennis**, EVENING PRIMROSE. Several plants established at Black Rock. Casual on Pickleridge. Fl. 7-9.

***Fuchsia magellanica**, FUCHSIA. Frequently naturalized around the village. Fl. 7-9.

Circaea lutetiana, ENCHANTER'S NIGHT-SHADE. Locally abundant in Castlebeach and Hayguardhay Woods. Fl. 6-8.

CALLITRICHACEAE

Callitriche stagnalis, WATER STARWORT. Abundant in streams at Mill Bay and Keystacks and in pond beside the Fort road. Fl. 5-8.

ARALIACEAE

Hedera helix, IVY. Generally very abundant. Fl. 8-12.

UMBELLIFERAE

Hydrocotyle vulgaris, PENNYWORT. Abundant in Mill Bay, Keystacks, Spedlands and Crabhall marshes. Fl. 8-9.

Chaerophyllum temulentum, ROUGH CHERVIL. Frequent in grassy hedgebanks. Fl. 6-7 (1).

Anthriscus sylvestris, COW PARSLEY. Occasional in hedgerows near Broomhill, the Drift, the Church, Cliff Cottages and on Dalehill. Fl. 5-6.

Torilis japonica, UPRIGHT HEDGE-PARSLEY. Abundant in hedgebanks and grassy places. Fl. 7-10.

***Smyrniolum olusatrum**, ALEXANDERS. Locally very abundant, especially near houses. Fl. 4-5 (1).

Conium maculatum, HEMLOCK. Frequent on Pickleridge, hedgebanks and waste places. Fl. 6-9.

Apium graveolens, WILD CELERY. Small colony on the upper saltmarsh below Jubilee. Rare beside the Crabhall-saltmarsh track. Fl. 6-9.

Apium nodiflorum, FOOL'S WATERCRESS. Abundant in streams and marshy ground, often locally dominant. Fl. 7-9.

Conopodium majus, PIGNUT. Abundant in neglected grassland and in Castlebeach and Hayguardhay Woods. Fl. 4-5.

Pimpinella saxifraga, BURNET SAXIFRAGE. Frequent in exposed cliff grassland near Blockhouse on the south side of Westdale and on Dale Point. Fl. 6-9.

***Aegopodium podagraria**, GROUND ELDER. Locally frequent in hedgerow near the bottom of the Fort road. Fl. 6-8.

Berula erecta, NARROW-LEAVED WATER-PARSNIP. Occasional beside the Crabhall saltmarsh track. Fl. 8.

Crithmum maritimum, SAMPHIRE. Abundant in rock crevices on exposed cliffs. Locally frequent in gravelly substrata on lagoon "islands". Fl. 7-9.

Oenanthe lachenalii, PARSLEY WATER DROPWORT. Occasional beside the Crabhall saltmarsh track. Fl. 8.

Oenanthe crocata, WATER DROPWORT. Very abundant in wet places, often locally dominant. Fl. 5-7.

Aethusa cynapium, FOOL'S PARSLEY. Frequent in gardens and waste places near houses. Fl. 8.

Foeniculum vulgare, FENNEL. Frequent on Dale Beach, Pickleridge and roadsides near Townsend and the Castle. Fl. 7-9.

Angelica sylvestris, WILD ANGELICA. Frequent in marshes and damp ground. Fl. 7-9.

Heracleum sphondylium, HOGWEED. Generally abundant. Fl. 6-9 (1).

Daucus carota, WILD CARROT. Abundant in exposed cliff grassland and hedgebanks near the sea. Fl. 6-9.

EUPHORBACEAE

Mercurialis annua, ANNUAL MERCURY. Locally frequent in cultivated land near Allenbrook. Fl. 4-9 (1).

Euphorbia helioscopia, SUN SPURGE. Abundant in arable land. Fl. 4-9 (1).

Euphorbia peplus, PETTY SPURGE. Frequent in cultivated ground, especially within the Fort. Fl. 4-1.

Euphorbia exigua, DWARF SPURGE. Occasional plants seen by CDP in 1953 in arable land near Kete.

Euphorbia portlandica, PORTLAND SPURGE. Locally abundant on screes on the north side of Westdale. Rare on cliffs at Mill Bay. Fl. 6-7.

POLYGONACEAE

Polygonum aviculare, KNOTGRASS. Very abundant in arable and waste land. Fl. 7-9.

Polygonum amphibium, AMPHIBIOUS BISTORT. Terrestrial form locally very abundant in damp ground between the Drift and Broomhill. No flowers seen in 1959-60.

Polygonum persicaria, PERSICARIA. Abundant in arable land. Fl. 7-9.

Polygonum lapathifolium, PALE PERSICARIA. Abundant in arable land. Fl. 7-9.

Polygonum nodosum. Abundant in arable land. Usually very robust. Fl. 7-9.

Polygonum hydropiper, WATER-PEPPER. Frequent in streams and marshes. Fl. 7-9.

Polygonum convolvulus, BLACK BINDWEED. Locally frequent in arable land on Dalehill, and near Blockhouse. Occasional in waste places elsewhere. Fl. 6-8.

***Fagopyrum esculentum**, BUCKWHEAT. A strong colony beside the road between Townsend and Cliff Cottages. Fl. 8-9. Det. CEH.

Rumex acetosella, SHEEP'S SORREL. Abundant on cliffs, dry hedgebanks and neglected pastures. Fl. 4-7.

Rumex acetosa, SORREL. Generally abundant. Fl. 4-6.

Rumex crispus, CURLED DOCK. Generally abundant. Fl. 5-9.

Rumex obtusifolius, BROAD-LEAVED DOCK. Frequent in fields and waste places. Fl. 6-8.

Rumex sanguineus, RED-VEINED DOCK. Abundant in woods. Fl. 7-8.

Rumex conglomeratus, SHARP DOCK. Frequent in marshy ground. Fl. 6-9.

Rumex maritimus, GOLDEN DOCK. Recorded from muddy area near the mouth of the Castlebeach stream by GTG in 1958.

URTICACEAE

Parietaria diffusa, PELLITORY. Locally abundant in the village, especially at Townsend. Occasional on Pickleridge. Fl. 6-9 (1).

Urtica urens, SMALL NETTLE. Locally abundant in arable land. Fl. 3-9.

Urtica dioica, STINGING NETTLE. Generally very abundant. Fl. 6-9 (1).

CANNABACEAE

Humulus lupulus, HOP. A few plants in hedgerow near the Fort gate and near the limekiln in Castlebeach Wood. Fl. 8-9.

ULMACEAE

Ulmus glabra, WYCH ELM. Frequent in Hayguardhay Wood and near Cliff Cottages.

Ulmus procera, ENGLISH ELM. Abundant in woods and hedges. Fl. 4-5.

This genus requires specialist attention.

BETULACEAE

Alnus glutinosa, ALDER. Frequent in Hayguardhay Wood. One stunted plant beside the stream south of the Castle.

FAGACEAE

Fagus sylvatica, BEECH. Frequent in woods. Fl. 4.

***Castanea sativa**, SWEET CHESTNUT. Occasional trees established in Point and Hayguardhay Woods.

***Quercus cerris**, TURKEY OAK. Occasional trees established in Hayguardhay Wood.

Quercus petraea, SESSILE OAK. Occasional in Point and Hayguardhay Woods. Two stunted trees on the south side of Castlebeach Wood.

SALICACEAE

***Populus alba**, WHITE POPLAR. Single tree established on the east side of Hayguardhay Wood.

***Populus** × **canadensis**, BLACK ITALIAN POPLAR. Several trees established on cliff between Black Rock and Cliff Cottages.

Salix cinerea ssp. **atrocinerea**, COMMON SALLOW. Generally abundant. Fl. 3-4.

Salix aurita × **cinerea** = **Salix** × **multinervis**. Seen by FNH in 1954 in upper limit of saltmarsh.

Further studies on this genus are required in the area.

ERICACEAE

***Rhododendron ponticum**, Numerous plants naturalized in Hayguardhay Wood. Fl. 5.

Calluna vulgaris, HEATHER. Locally frequent in cliff grassland and on the aerodrome. Fl. 7-9.

Erica tetralix, CROSS-LEAVED HEATH. One small colony found in 1953 by CDP near the top of Red Cliff.

Erica cinerea, BELL-HEATHER. Frequent in cliff grassland, on the aerodrome, Mill Bay slopes and beside the road near Kete. Fl. 6-8.

PLUMBAGINACEAE

Limonium humile, LAX-FLOWERED SEA LAVENDER. Co-dominant over a large part of the saltmarsh with *Armeria*. Det. CDP. Fl. 7-8.

Limonium binervosum, ROCK SEA LAVENDER. Very abundant on Cliffs at Vomit Point, frequent on St. Ann's Head and occasional near Blockhouse. Fl. 7-8.

Armeria maritima, THRIFT. Very abundant on the saltmarsh and on cliffs. Fl. 3-9 (1).

PRIMULACEAE

Primula veris, COWSLIP. Two small colonies on exposed cliffs; one on the south side of the Vomit, the other on the north side of Vomit Point. Fl. 4-5.

Primula vulgaris, PRIMROSE. Abundant in woods and hedgerows and on grassy cliffs facing north and west. Fl. 1-5.

Lysimachia nemorum, YELLOW PIMPERNEL. Locally frequent in the damp track in Castlebeach Wood. Fl. 5-9.

Anagallis arvensis, SCARLET PIMPERNEL. Frequent in arable land, waste places and in exposed cliff grassland. Fl. 5-9.

Glaux maritima, SEA MILKWORT. Abundant in the upper parts of the saltmarsh. A small colony in rock crevices at Frenchman's Path just above the level of the *Pelvetia*. Fl. 6-7.

Samolus valerandi, BROOKWEED. Frequent beside the Crabhall-saltmarsh track. Occasional in Keystacks, Watwick and Mill Bay marshes. Fl. 6-8.

OLEACEAE

Fraxinus excelsior, ASH. Typically co-dominant with *Acer pseudoplatanus* in woods. Frequent in hedges. Fl. 4-5.

Ligustrum vulgare, PRIVET. Locally frequent on exposed cliffs at Westdale and Dale Point. Fl. 6.

APOCYNACEAE

***Vinca major**, GREATER PERIWINKLE. Naturalized amongst scrub around the Fort. Fl. 5-9 (1).

GENTIANACEAE

Centaureum erythraea (**C. minus**), COMMON CENTAURY. Locally abundant on the aerodrome near Hook Vale and frequent on exposed cliffs. Fl. 6-9.

BORAGINACEAE

Lycopsis arvensis, BUGLOSS. Locally abundant in arable fields south-east of Hayguardhay Farm and to the north of Allenbrook. Fl. 6-8.

Myosotis secunda, WATER FORGET-ME-NOT. Frequent in marshy ground. Fl. 5-9. Several forms det. AEW.

Myosotis arvensis, COMMON FORGET-ME-NOT. Frequent in arable and waste land. Fl. 5-9.

Myosotis discolor, YELLOW AND BLUE FORGET-ME-NOT. Frequent in rough grassland. Fl. 4-6.

Myosotis ramosissima (**M. hispida**), EARLY FORGET-ME-NOT. Frequent on walls, Pickleridge and in exposed cliff grassland. Fl. 3-6.

CONVOLVULACEAE

Convolvulus arvensis, BINDWEED. Generally abundant. Fl. 6-9.

Calystegia sepium, LARGE BINDWEED. Generally abundant. Fl. 6-9.

***Calystegia sylvatica** (**C. sylvestris**). Three plants found by TAW-D at Mullock Bridge in 1960.

Cuscuta epithymum, COMMON DODDER. Apparently restricted to a few plants on a clump of *Ulex europaeus* on the north side of Westdale Valley. Fl. 8-9.

SOLANACEAE

Solanum dulcamara, WOODY NIGHTSHADE. Frequent in hedges and scrub and on waste ground. Frequent in sand on the seaward side of Pickleridge. Fl. 6-9.

Solanum nigrum, BLACK NIGHTSHADE. Occasional on waste ground on Dale Beach and opposite Spedlands Farm. Fl. 7-9 (1).

SCROPHULARIACEAE

Verbascum thapsus, AARON'S ROD. Rare on waste ground beside Mullock Bridge. Fl. 7. Recorded as "common in Dale" by WPD in 1951.

- ***Misopates orontium** (**Antirrhinum orontium**), WEASEL'S SNOUT. Frequent in arable land. Fl. 6-9.
- Linaria vulgaris**, TOADFLAX. Abundant on hedgebanks and in grassy places. Fl. 6-9.
- Kickxia spuria**, FLUELLEN. Recorded from fields south of Mill Bay by UCC in 1949 and near Snailston by CDP in 1953.
- Kickxia elatine**. Occasional in cracks in the aerodrome runways near Red Cliff and in arable land on Dalehill. Recorded from fields near Snailston by CDP in 1953. Fl. 7-8.
- ***Cymbalaria muralis**, IVY-LEAVED TOADFLAX. Abundant on walls and hedgebanks near houses. Locally frequent on Pickleridge. Fl. 4-9 (1).
- Scrophularia nodosa**, FIGWORT. A few plants near the south-eastern margin of Castlebeach Wood. Fl. 7.
- Scrophularia aquatica**, WATER BETONY. Abundant in marshes and damp hedgerows. Fl. 6-9.
- Sibthorpia europaea**, CORNISH MONEYWORT. Rare beside the stream in Castlebeach Wood. Fl. 7-8.
- Digitalis purpurea**, FOXGLOVE. Generally abundant. Fl. 5-9.
- Veronica beccabunga**, BROOKLIME. Frequent in streams and ponds at Keystacks, Gunkle, Mill Bay, Dalehill and near Spedlands. Fl. 5-9.
- Veronica chamaedrys**, GERMANDER SPEEDWELL. Frequent in hedgebanks and grassy places. Fl. 4-7.
- Veronica serpyllifolia** ssp. **serpyllifolia**, THYME-LEAVED SPEEDWELL. Occasional in grassy places and marshy ground. Fl. 4-9.
- Veronica arvensis**, WALL SPEEDWELL. Frequent in hedgebanks and in short turf near the sea. Fl. 3-8.
- Veronica hederifolia**, IVY SPEEDWELL. Abundant in woods, hedgebanks and arable land. Fl. 3-5 (1).
- ***Veronica persica**, BUXBAUM'S SPEEDWELL. Very abundant in cultivated ground and frequent in hedgebanks. Fl. 1-12.
- Pedicularis palustris**, RED RATTLE. Recorded from Keystacks marsh and beside the Crabhall-saltmarsh track by JHB in 1948.
- Pedicularis sylvatica**, LOUSEWORT. Occasional near the top of Red Cliff. Fl. 5-6. A few plants found above Westdale by JHB in 1948.
- Rhinanthus minor**, YELLOW-RATTLE. Abundant in neglected pasture beside the Fort road and frequent in rough ground elsewhere. Fl. 5-8.
- Euphrasia occidentalis**, EYEBRIGHT. Locally abundant in exposed cliff grassland, especially on Vomit Point. Plants from several localities were determined by CDP in 1953 and by FNH in 1954. Fl. 5-8.
- Euphrasia nemorosa**. Locally abundant in neglected pasture on Dale Point and on the aerodrome. Occasional plants elsewhere (Det. AEW). Fl. 7-9.
- Odontites verna** ssp. **serotina**, RED BARTSIA. Abundant in waste places and in rough pasture. Fl. 7-9.

OROBANCHACEAE

- Orobanche hederaceae**, IVY BROOMRAPE. A few plants have been found on *Hedera helix* within the Fort almost every year since 1948. Fl. 7.

VERBENACEAE

- Verbena officinalis**, VERVAIN. Frequent on roadsides, especially in the village. Fl. 7-9.

LABIATAE

Mentha arvensis, CORN MINT. Occasional in arable land near Maryborough Farm and on Dalehill. Fl. 8-9.

Mentha aquatica, WATER MINT. Abundant in damp places. Fl. 7-9.

Mentha aquatica × **arvensis** = **Mentha** × **verticillata**. Small colony in damp ground between the Drift and Broomhill. With *M. aquatica* only. Fl. 8-9.

Mentha rotundifolia, APPLE-SCENTED MINT. Small colony south of the Castle beside the road to Hayguardhay Farm. Fl. 8-9.

Lycopus europaeus, GIPSY WORT. Frequent beside the Crabhall-saltmarsh track. Fl. 8-9.

Thymus drucei, WILD THYME. Abundant on exposed cliffs and banks near the sea. Plants from several areas were determined by GDP in 1953. Fl. 6-8.

Calamintha ascendens, COMMON CALAMINT. Occasional on damp hedgebanks near the Cemetery. Fl. 6-9.

Prunella vulgaris, SELF-HEAL. Frequent in grassy places. Fl. 6-9.

Betonica officinalis (**Stachys officinalis**), BETONY. Locally frequent in exposed cliff grassland on St. Ann's Head, Westdale and Mill Bay and in hedgebanks on Dalehill. Fl. 7-9 (1).

Stachys arvensis, FIELD WOUNDWORT. Abundant in arable land. Fl. 1-12.

Stachys palustris, MARSH WOUNDWORT. Frequent in damp hedgerows, arable land and marshes. Fl. 6-9.

Stachys sylvatica, HEDGE WOUNDWORT. Abundant in woods, scrub and shady hedgebanks. Fl. 6-10.

Ballota nigra, BLACK HOREHOUND. Recorded as a casual on Dale Point by EMT in 1952.

Lamium amplexicaule, HENBIT. Occasional in arable land on Dalehill, near Broomhill Farm and Allenbrook. Fl. 6-8.

Lamium purpureum, RED DEAD-NETTLE. Abundant in arable land and waste places. Fl. 3-9 (1).

Galeopsis tetrahit, COMMON HEMP-NETTLE. Frequent in arable land, scrub and hedgerows. Fl. 7-8.

Galeopsis bifida. Occasional in arable land near Point Farm. Fl. 8.

Glechoma hederacea, GROUND IVY. Generally abundant. Fl. 4-8.

Marrubium vulgare, WHITE HOREHOUND. A strong colony on waste ground near Townsend. Fl. 7-8.

Scutellaria galericulata, SKULL-CAP. Locally abundant beside the Crabhall-saltmarsh track. Occasional in Watwick marsh. Fl. 6-9.

Teucrium scorodonia, WOOD SAGE. Abundant in cliff scrub and on hedgebanks. Fl. 6-9 (1).

Ajuga reptans, BUGLE. Abundant in Watwick valley and frequent in rough grassland to the east of Hayguardhay Wood and to the north-west of the Castle. Fl. 4-5.

PLANTAGINACEAE

Plantago major, GREAT PLANTAIN. Frequent in arable land and waste places. Fl. 6-9.

Plantago media, HOARY PLANTAIN. Frequent in roadsides and grassy places. Fl. 6-9.

Plantago lanceolata, RIBWORT. Generally very abundant. Fl. 4-9.

Plantago maritima, SEA PLANTAIN. Abundant on cliffs and banks near the sea. Frequent in the Armerietum and the Limonietum on the saltmarsh. Fl. 5-8.

Plantago coronopus, BUCK'S-HORN PLANTAIN. Abundant on cliffs and short turf near the sea. Fl. 5-8.

CAMPANULACEAE

Jasione montana, SHEEP'S-BIT. Abundant on cliffs and hedgebanks. Fl. 5-9 (1).

RUBIACEAE

Sherardia arvensis, FIELD MADDER. Frequent in arable land. Fl. 3-9 (1).

Galium verum, LADY'S BEDSTRAW. Locally abundant on cliffs, hedgebanks and grassy places. Fl. 6-9.

Galium saxatile (*G. hercynicum*), HEATH BEDSTRAW. Occasional on gravelly substrata at the top of Red Cliff. Fl. 6-7.

Galium palustre ssp. **palustre**, MARSH BEDSTRAW. Frequent in marshy ground. Fl. 6-8.

Galium aparine, CLEAVERS. Generally abundant. Fl. 6-9.

Rubia peregrina, WILD MADDER. Frequent in cliff scrub on Dale and Watwick Points. Fl. 7-8.

CAPRIFOLIACEAE

Sambucus nigra, ELDER. Frequent in hedges, scrub and woods. Fl. 8.

Lonicera periclymenum, HONY-SUCKLE. Abundant in hedges and scrub. Fl. 6-9.

ADOXACEAE

Adoxa moschatellina, MOSCHATEL. Frequent in Castlebeach Wood. Fl. 4-5.

VALERIANACEAE

Valerianella locusta, LAMB'S LETTUCE. Locally abundant on hedgebanks in the village. Occasional in arable land on Dalehill and waste land beside huts near the Blockhouse road. Fl. 3-8.

***Centranthus ruber**, RED VALERIAN. Abundantly naturalized on walls in the village and on cliffs at Dale Point. Fl. 5-9 (1).

DIPSACAEEAE

Dipsacus fullonum, TEASEL. Casual on waste ground beside huts near the Blockhouse road. Fl. 8.

Knautia arvensis, FIELD SCABIOUS. Occasional in hedgebanks and waste ground north of Westdale, near Blockhouse and at Mullock Bridge. Fl. 6-8.

Succisa pratensis, DEVIL'S-BIT SCABIOUS. Locally frequent on rough ground on Great Castle Head, on the north side of Mill Bay and near Keystacks. Seen by FNH near Hook Vale in 1954.

COMPOSITAE

Senecio jacobaea, RAGWORT. Generally abundant. Fl. 6-9 (1).

Senecio aquaticus, MARSH RAGWORT. Locally frequent in Keystacks marsh. Fl. 6-8.

Senecio erucifolius, HOARY RAGWORT. Small colony on the aerodrome 300 yards north-west of Hook Vale. Recorded by FWA from the northern end of the Blockhouse road in 1953. Fl. 7-9.

Senecio sylvaticus, WOOD GROUNDSEL. Common in cliff grassland and scrub and on hedgebanks. Fl. 6-8.

Senecio vulgaris, GROUNDSEL. Generally very abundant. Fl. 1-12.

- Tussilago farfara**, COLTSFOOT. Locally frequent on the aerodrome, especially north-west of Westdale. Also on stream bank at Watwick Bay. Fl. 3-5.
- ***Petasites fragrans**, WINTER HELIOTROPE. Abundantly naturalized near the Castle. Fl. 12-2.
- Pulicaria dysenterica**, FLEABANE. Abundant in marshes and damp grassy places. Fl. 7-9.
- Filago germanica**, CUDWEED. Recorded from a wall beside the road to Hayguardhay Farm by FJB in 1948 and from Pickleridge by JHP in 1949.
- Gnaphalium uliginosum**, MARSH CUDWEED. Frequent in arable and waste land. Fl. 6-9.
- Solidago virgaurea**, GOLDEN-ROD. Locally frequent amongst cliff scrub on Dale Point and Red Cliff. Fl. 8-9.
- Aster tripolium**, SEA ASTER. Frequent in the Armerietum on the saltmarsh and locally abundant near Mullock Bridge. Var. *discodeus* is occasional. Fl. 7-9 (1).
- Bellis perennis**, DAISY. Generally abundant. Fl. 3-9 (1).
- Eupatorium cannabinum**, HEMP AGRIMONY. Abundant in marshes, damp hedgerows and cliff scrub on Dale and Watwick Points. Fl. 7-9.
- Anthemis arvensis**, CORN CHAMOMILE. Occasional in arable land near Point Farm. Fl. 6-7.
- Chamaemelum nobile** (*Anthemis nobilis*), CHAMOMILE. Locally abundant on the aerodrome near Red Cliff and in track 200 yards north of Snailston. Found on Dale Beach by FWA in 1953. Fl. 6-8.
- Achillea millefolium**, YARROW. Generally very abundant. Fl. 5-9 (1).
- Achillea ptarmica**, SNEEZEWEED. Locally abundant in damp ground near Maryborough Farm, Moorland Cottage and at Keystacks. Occasional on roadside verges between the Castle and the Cemetery. Fl. 7-9.
- Tripleurospermum maritimum** (*Matricaria maritima*)
ssp. *maritimum*. Abundant on cliffs and the lagoon "islands".
ssp. *inodorum*, SCENTLESS MAYWEED. Abundant in arable land and waste places. Fl. 5-9 (1).
- ***Matricaria matricarioides**, RAYLESS MAYWEED. Very abundant in waste places. Fl. 6-9 (1).
- Chrysanthemum segetum**, CORN MARIGOLD. Frequent in arable land. Fl. 6-9.
- Chrysanthemum leucanthemum**, MOON-DAISY. Abundant on cliffs, hedgebanks and on grassy places. Fl. 6-8.
- ***Chrysanthemum parthenium**, FEVERFEW. A single plant found by TAW-D on Pickleridge in 1957.
- Chrysanthemum vulgare** (*Tanacetum vulgare*), TANSY. Small colony on rough ground beside Mullock Bridge. Fl. 7-9.
- Artemisia vulgaris**, MUGWORT. Locally frequent on hedgebanks and waste places. Fl. 7-9.
- Carlina vulgaris**, CARLINE THISTLE. Rare at the western end of the aerodrome. Fl. 8.
- Arctium minus**, LESSER BURDOCK. Frequent in hedgebanks and waste places. Det. AEW. Fl. 6-9.
- Carduus tenuiflorus**, SLENDER THISTLE. Locally abundant on hedgebanks and waste land, especially near the sea. Fl. 6-8.
- Cirsium vulgare**, SPEAR THISTLE. Generally abundant. Fl. 6-8.
- Cirsium palustre**, MARSH THISTLE. Frequent in marshes, ditches and damp grassland. Fl. 6-8.

Cirsium arvense, CREEPING THISTLE. Generally abundant. Fl. 6-9.

Centaurea scabiosa, GREATER KNAPWEED. Occasional in hedgebanks and grassy places above Westdale, on Dalehill and near Blockhouse and Snailston. Fl. 6-8.

Centaurea nigra (*C. nigra* ssp. **nigra**), HARDHEADS. Generally abundant. Fl. 6-9.

Centaurea nemoralis (*C. nigra* ssp. **nemoralis**). Occasional in grassy places near the Fort and above Westdale. Fl. 7-9.

Serratula tinctoria, SAW-WORT. Rare in cliff grassland at Vomit Point. Occasional in rough grassland at the western end of the aerodrome, near Brunt Farm, Moorland Cottage and at the northern end of the Blockhouse road. Fl. 7-9.

Cichorium intybus, CHICORY. Abundant in 1957 in rough grassland on St. Ann's Head, presumably as a relict of cultivation. The great majority of these plants were destroyed when the area was ploughed up in 1958. Rare in fields near Snailston in 1960. A few plants observed on Dalehill by JHB in 1949. Fl. 8.

Lapsana communis, NIPPLEWORT. Frequent in shady hedgerows. Fl. 6-9 (1).

Hypochoeris radicata, CAT'S EAR. Generally very abundant. Fl. 5-9 (1).

Leontodon autumnalis, AUTUMNAL HAWKBIT. Frequent in grassy places. Fl. 7-9.

Leontodon hispidus, ROUGH HAWKBIT. Locally abundant in neglected pastures beside the Fort road. Occasional in grassy places elsewhere. Fl. 6-9 (1).

Leontodon taraxacoides (*L. leysseri*), HAIRY HAWKBIT. Locally abundant in exposed cliff grassland and in rough ground on the aerodrome. Fl. 6-9.

Picris echioides, BRISTLY OX-TONGUE. Recorded by FJB in 1948 from the roadside between Kete and the Cemetery.

Sonchus arvensis, FIELD MILK-THISTLE. Frequent in hedgerows and damp grassy places. Fl. 6-9.

Sonchus oleraceus, SOW-THISTLE. Generally abundant. Fl. 6-8 (1).

Sonchus asper, SPINY SOW-THISTLE. Generally abundant. Fl. 6-8 (1).

Hieracium umbellatum, HAWKWEED. Locally abundant on shaded cliffs between the Fort jetty and the village. Also on the south side of Castlebeach. Det. AEW. Fl. 7-9.

Hieracium pilosella, MOUSE-EAR HAWKWEED. Locally abundant in short turf near the Fort entrance, the Cemetery, at Townsend, above Westdale and on the aerodrome. Fl. 5-6.

Crepis capillaris, SMOOTH HAWK'S-BEARD. Generally very abundant. Fl. 6-9 (1).

Taraxacum officinale, DANDELION. Generally abundant. Fl. 3-9 (1).

ALISMATACEAE

Alisma plantago-aquatica, WATER PLANTAIN. Abundant in the small pond about 200 yards west of Mill Bay. Fl. 7-8.

JUNCAGINACEAE

Triglochin palustris, MARSH ARROW-GRASS. Occasional beside the Crabhall-saltmarsh track. Rare in marshes near Snailston and Keystacks. Fl. 7-8.

Triglochin maritima, SEA ARROW-GRASS. Locally abundant in the upper parts of the saltmarsh. Fl. 6-8.

ZOSTERACEAE

Zostera marina, EEL-GRASS. A few plants found at ELWST under Point Wood about 200 yards south-east of Brig stones in September 1958. Not found in 1960 and probably extinct. This area is known locally as "The Greens" and the plant was undoubtedly abundant in this locality about thirty years ago.

Zostera angustifolia (**Z. hornemanniana**). Small colony in drainage channel at the western end of the saltmarsh. Apparently decreasing. Det. TGT.

POTAMOGETONACEAE

Potamogeton natans, BROAD-LEAVED PONDWEED. Abundant in the small pond about 200 yards west of Mill Bay. Fl. 5-6.

LILIACEAE

***Hemerocallis fulva**, DAY LILY. Naturalized on north-facing cliffs near the Fort jetty. Fl. 7-8.

Scilla verna, SPRING SQUILL. Abundant in exposed cliff grassland. Frequent on Mill Bay slopes. Fl. 4-6.

Endymion non-scriptus, BLUEBELL. Generally abundant. Fl. 4-6.

JUNCACEAE

Juncus gerardii, MUD RUSH. Locally abundant on the upper parts of the saltmarsh. Small colonies on cliffs about 300 yards east of Mill Bay, near Frenchman's Path, at Gunkle and at Watwick. Fl. 6-7.

Juncus bufonius, TOAD RUSH. Abundant in marshy ground. Fl. 6-8.

Juncus inflexus, HARD RUSH. Locally frequent beside the Crabhall-saltmarsh track, in a ditch beside the road to Dalehill and behind Dale Beach. Fl. 7-8.

Juncus effusus, SOFT RUSH. Generally abundant, especially in the badly-drained fields around Moorland Cottage. Fl. 6-8.

Juncus conglomeratus, Frequent in damp grassy places. Fl. 6-7.

Juncus maritimus, SEA RUSH. Locally dominant on the upper parts of the saltmarsh. Fl. 8-9.

Juncus acutiflorus, JOINTED RUSH. Abundant in marshy ground. Fl. 6-8.

Luzula sylvatica, GREAT WOODRUSH. Locally dominant in Point Wood and nearby hedgerows. Fl. 4-6.

Luzula campestris, FIELD WOODRUSH. Frequent in grassy places. Fl. 3-6.

AMARYLLIDACEAE

Galanthus nivalis, SNOWDROP. Naturalized on cliffs near the Fort entrance. Fl. 1-3.

IRIDACEAE

Iris pseudacorus, YELLOW FLAG. Abundant in marshy ground. Fl. 5-6.

***Crocosmia** × **crocosmiiflora**, MONTBRETIA. Naturalized on cliffs near the Fort jetty. Fl. 7-9.

DIOSCOREACEAE

Tamus communis, BLACK BRYONY. Rare in a hedgerow about 200 yards north-west of Spedlands and in scrub on the north side of Mill Bay valley. Fl. 6.

ORCHIDACEAE

Spiranthes spiralis, AUTUMN LADY'S TRESSES. Single spike found in short turf north of Westdale by JSR in 1959. Seen by FJB on Dale Point in 1947.

Orchis morio, GREEN-WINGED ORCHIS. Small colonies in grassland near the top of Red Cliff and on the south-west side of Westdale valley. Fl. 5-6.

Orchis mascula, EARLY PURPLE ORCHIS. Colonies amongst scrub at Watwick, in Point and Castlebeach Woods, near the top of Red Cliff and occasional spikes beside the Fort jetty path. Fl. 4-6.

Dactylorhiza incarnata ssp. **incarnata** (*Orchis strictifolia*). A single spike in neglected pasture between Point Farm and Fort road in 1960. Seen in the same locality by ADS in 1949.

Dactylorhiza praetermissa (*Orchis praetermissa*), MARSH ORCHIS. Locally abundant in marshes at Watwick, Dalchill, on the south-west side of Hayguardhay Wood and in the disused quarry beside the Crabhall-saltmarsh track. Fl. 6-7.

ARACEAE

Arum maculatum, LORDS-AND-LADIES. Frequent in woods and hedgerows. Fl. 4-5.

LEMNACEAE

Lemna minor, DUCKWEED. Locally abundant in ponds and ditches.

SPARGANIACEAE

Sparganium erectum ssp. **erectum**, BUR-REED. Frequent in Mill Bay and Spedlands marshes. Fl. 6-9.

CYPERACEAE

Scirpus maritimus, SEA CLUB-RUSH. Locally dominant in the upper parts of the saltmarsh. Fl. 6-8.

Scirpus tabernaemontani (*Schoenoplectus tabernaemontani*), GLAUOUS BULRUSH. Locally dominant in the upper parts of the saltmarsh. Fl. 6-8.

Scirpus setaceus (*Isolepis setacea*), BRISTLE SCIRPUS. Rare in the marsh near Snailston. Recorded from Warwick marsh by ADS in 1956. Fl. 8.

Scirpus cernuus (*Isolepis cernua*), NODDING SCIRPUS. Locally frequent in Mill Bay, Keystacks, Spedlands and Watwick marshes. Also near Snailston and beside the Crabhall-saltmarsh track. Fl. 7-8.

Eleocharis palustris ssp. **palustris**, COMMON SPIKE-RUSH. Locally frequent near Mill Bay streams and beside the Crabhall-saltmarsh track. Fl. 6-8.

Carex distans, DISTANT SEDGE. Locally abundant on cliffs at Watwick (Det. CDP in 1953) and occasional beside the Crabhall-saltmarsh track. Fl. 7.

Carex punctata, DOTTED SEDGE. Recorded from stream sides and cracks in cliffs between the Fort and St. Ann's Head by FWA in 1953. The exact locality is not known. See Proc. BSBI 1953.

Carex binervis, RIBBED SEDGE. Reported from the upper parts of the saltmarsh near Crabhall Farm by JCR in 1956.

Carex extensa, LONG-BRACTED SEDGE. Rare on the upper parts of the saltmarsh. Fl. 7.

Carex flacca, CARNATION GRASS. Abundant in rough pasture on the aerodrome. Fl. 5-6.

Carex hirta, HAMMER SEDGE. Occasional in Keystacks and Spedlands marshes and recorded from near Maryborough Farm by ASR in 1959. Fl. 7.

Carex nigra, COMMON SEDGE. Locally frequent in Mill Bay, Keystacks and Spedlands marshes and recorded from Watwick marsh by JCR in 1956. Fl. 6-7.

Carex paniculata, PANICLED SEDGE. Frequent in Mill Bay marsh and beside the Crabhall-saltmarsh track. Fl. 4-5.

Carex otrubae, FALSE FOX-SEGE. Frequent in damp grassy places on the aerodrome, near Keystacks, Maryborough, Broomhill and Spedlands Farms and beside the Crabhall-saltmarsh track. Fl. 5-7.

Carex arenaria, SAND SEDGE. Locally abundant on Pickleridge. Fl. 5-7.

Carex muricata (*C. pairaei*), PRICKLY SEDGE. Locally frequent in neglected pasture on Dale Point and seen by CAS beside the path to Castlebeach in 1958. Fl. 7.

Carex ovalis, OVAL SEDGE. Rare in damp hedgerows near Keystacks marsh. Fl. 7.

GRAMINEAE

- Phragmites communis**, REED. Dominant in Crabhall marsh, abundant on cliffs at Watwick and in hedgerows near Moorland Cottage. Fl. 8-9.
- Molinia caerulea**, PURPLE MOOR-GRASS. Abundant near the top of Red Cliff and in hedgerows near Moorland Cottage. Also in Spedlands, Mill Bay and Keystacks marshes. Fl. 6-9.
- Sieglingia decumbens**, HEATH GRASS. Rare in exposed cliff grassland at Dale Point and recorded from the same habitat at Mill Bay by UCC in 1949 and from Westdale by ASR in 1959. Fl. 6.
- Glyceria fluitans**, FLOTE-GRASS. Locally frequent in streams and ponds near Keystacks, Mill Bay, Spedlands, and Dalehill. Fl. 5-9.
- Glyceria declinata**. Locally frequent in streams and ponds near Keystacks, Mill Bay, Spedlands, Gunkle, Dalehill and beside the Crabhall-saltmarsh track. Fl. 5-8.
- Festuca arundinacea**, TALL FESCUE. Frequent on roadside hedgebanks near Maryborough and Snailston Farms. Fl. 6.
- Festuca gigantea**, GIANT FESCUE. A small colony in a shady hedgerow north of the Castle.
- Festuca rubra**, RED FESCUE. Generally very abundant. Fl. 5-6. Plants referable to var. *pruinosa* are frequent in exposed cliff grassland and on the banks surrounding the saltmarsh and lagoons.
- Festuca ovina**, SHEEP'S FESCUE. Abundant in exposed cliff grassland and pastures. Fl. 6-8.
- Lolium perenne**, RYE-GRASS. Generally very abundant. Fl. 6-8.
- ***Lolium multiflorum**, ITALIAN RYE-GRASS. Occasional in cultivated land. Fl. 6-8.
- Vulpia bromoides**, SQUIRREL-TAIL FESCUE. Locally abundant in exposed cliff grassland, on hedgebanks and Pickleridge. Fl. 5-6.
- Puccinellia maritima**, COMMON SALTMARSH-GRASS. Abundant on the saltmarsh and becoming locally dominant around salt-pans. Also frequent behind Dale Beach. Fl. 6-7.
- Catapodium rigidum (Desmazeria rigida)**, FERN GRASS. Rare on walls near the Castle and on Mullock Bridge. Fl. 7.
- Catapodium marinum (Desmazeria marina)**, STIFF SAND-GRASS. Locally frequent on exposed cliffs, dry hedgebanks and Pickleridge. Fl. 5-6.
- Poa annua**, ANNUAL POA. Generally very abundant. Fl. 1-12.
- Poa pratensis**, MEADOW GRASS. Generally very abundant. Fl. 5-6.
- Poa trivialis**, ROUGH MEADOW-GRASS. Generally abundant, especially in shady places. Fl. 6.
- Dactylis glomerata**, COCKSFOOT. Generally very abundant. Fl. 6-9 (1).
- Cynosurus cristatus**, CRESTED DOG'S-TAIL. Locally abundant in neglected grassland and frequent in waste places. Fl. 6.
- Bromus sterilis (Anisantha sterilis)**, BARREN BROME. Locally abundant on hedgebanks in the village and on banks around the lagoons. Fl. 6.
- Bromus mollis**, SOFT BROME. Frequent in hedgerows and cultivated ground. Fl. 5-6.
- Bromus feronii**. Abundant on exposed cliffs. Det. AEW. Fl. 5-6.
- Brachypodium sylvaticum**, SLENDER FALSE-BROME. Frequent, especially in shady places. Fl. 7-8.
- Agropyron repens**, COUCH-GRASS. Abundant near the lagoons and on banks around the saltmarsh. Locally abundant in hedgerows and cultivated ground. Fl. 6-8.

- Agropyron junceiforme**, SAND COUCH-GRASS. Locally abundant on shingle near the lagoons and on banks around the saltmarsh. Fl. 6.
- Koeleria cristata** (**K. gracilis**), CRESTED HAIR-GRASS. Frequent in exposed cliff grassland. Fl. 5-6.
- Arrhenatherum elatius**, OAT-GRASS. Generally very abundant. Fl. 6-9 (1).
- Holcus lanatus**, YORKSHIRE FOG. Generally very abundant. Fl. 6-9.
- Holcus mollis**, CREEPING SOFT-GRASS. Rare in Castlebeach Wood, near the bottom of the Fort road and amongst scrub on Mill Bay slopes. Fl. 8-9.
- Deschampsia cespitosa**, TUFTED HAIR-GRASS. Locally abundant in Mill Bay and Keystacks marshes, rough ground near the northern end of the Blockhouse road and in hedgerows between the Drift and Kete. Fl. 6-7.
- Aira praecox**, EARLY HAIR-GRASS. Locally abundant on exposed cliffs and hedgebanks. Fl. 5-6.
- Aira caryophyllea**, SILVERY HAIR-GRASS. Locally abundant on exposed cliffs and hedgebanks. Fl. 5-6.
- Agrostis tenuis**, COMMON BENT-GRASS. Generally very abundant. Fl. 7-8.
- Agrostis stolonifera**, CREEPING BENT-GRASS. Generally very abundant. Fl. 7-8.
- Phleum bertolonii** (**P. nodosum**), CAT'S TAIL. Rare in cultivated ground near Point Farm and on Dalehill. Fl. 8.
- Phleum pratense**, TIMOTHY GRASS. Frequent in pastures and hedgerows. Fl. 6-8.
- Alopecurus geniculatus**, MARSH FOXTAIL. Frequent in marshes and damp places. Fl. 5-9.
- Anthoxanthum odoratum**, SWEET VERNAL-GRASS. Generally very abundant. Fl. 5-6.
- Phalaris arundinacea**, REED-GRASS. A small colony on the upper part of the saltmarsh at the eastern end of Mullock Bridge. Fl. 7.
- Parapholis strigosa**, SEA HARD-GRASS. Locally abundant on the lagoon "islands" but very easily overlooked except when flowering. Fl. 6.
- Spartina alterniflora** × **maritima** = **Spartina** × **townsendii**, TOWNSEND'S CORD-GRASS. First observed by JHB in 1950. Now abundant on certain areas of the lower part of the saltmarsh and spreading rapidly. Fl. 8-9.