

FLORA
OF THE
COUNTY DONEGAL

OR
LIST OF THE FLOWERING PLANTS AND FERNS
WITH THEIR LOCALITIES AND DISTRIBUTION.

BY
HENRY CHICHESTER HART,
B.A, T.C.D, F.L.S, M.R.I.A, &c.

DUBLIN:
SEALY, BRYERS AND WALKER.

LONDON:
DAVID NUTT, 270 & 271 STRAND, W.C.

1898.

To the Memory
OF
ALEXANDER GOODMAN MORE,
M.R.I.A, F.L.S, F.R.S.E,
WITH WHOSE ADVICE AND ASSISTANCE
THIS FLORA WAS COMMENCED AND CARRIED OUT,
IT IS NOW DEDICATED
BY
THE AUTHOR.

May, 1898.

INTRODUCTION.

THE collection of the materials for a Flora of Donegal has occupied my attention for a considerable number of years. It was in the year 1865 that I first made out the name of a wildflower from Bentham's *Handbook*, where I now write, and from that time onwards I devoted portions of almost every season to the subject.

By the publication of Messrs. Moore and More's *Cybele Hibernica*, in 1866, a great impetus was given to the study of Field Botany in Ireland, and in 1872, when *Recent Additions to the Flora of Ireland* appeared, I was in a position to give the author a considerable number of Donegal and other habitats for some of the less common Irish species.

By that time, too, I had had the privilege of becoming intimate with the lamented author of the *Recent Additions*, Alexander Goodman More; an intimacy to which any good results I ever accomplished in the domain of Botany is largely due, and without which many would have been my errors, numerous my short-comings. As the years rolled on

each summer's gathering was sifted by him, steady correspondence was maintained, various excursions were undertaken, and down to the period of his death his unfailing and most kindly interest in the preparation of this volume, in the reading of manuscript and of proofs, and in general advice was unceasingly sustained. To him, therefore, I owe my largest debt of gratitude for what has been the happiest pursuit of my lifetime.

In a scarcely less degree have I to thank many others for their sympathy and practical assistance. Some of them are now no more. Many of my brambles and other critical specimens were determined by Professor Babington, whose kindness and skill need no tribute, and have hardly been replaced. To Sir Joseph Hooker I tender my sincerest thanks for constant and flattering encouragement and advice. Without the critical acumen and unequalled knowledge of Mr. Arthur Bennett, various genera (*Carices*, *Potamogetons*, &c.) would have been unsatisfactorily dealt with. His patience and forbearance with my specimens, often in ill condition, make me for ever his debtor. To Mr. Hanbury is due the elucidation of my *Hieracia*, a group of much interest in the North of Ireland, and one for which, on account of its mountaineering associations, I have ever had a special predilection. A tour in Donegal with him in search of these troublesome and lovable plants will always be a bright spot in my memory.

From Mr. Baker, of Kew, I have received assistance at various times; and to Mr Britten, the late Mr. H.C. Watson, the late Rev. Mr. Leefe, and many others, I am indebted for help and advice.

In the present Flora there is a large amount of information with regard to localities which has not been published. Much has found its way into various detached papers printed by the Journal of Botany, the Royal Dublin Society and last, but by no means least, the Royal Irish Academy, whose practical and authoritative assistance I desire here to gratefully acknowledge.

The plan of the work is my own, and if it is somewhat distended by an attempt at a meteorological review of the district, it must at least be remembered that such Appendices have in no way curtailed the real scope of the volume. It was by an accident that this subsidiary matter did not appear in smaller type, and present, thereby, a less obtrusive appearance.

This volume has long been announced and promised. For the length of time it has taken to bring it to a conclusion, I must only plead the size of the County and the difficulties it presents to a thorough exploration. The work has been accomplished single-handed. To the Flora of the County, as it would appear from the *Cybele Hibernica* in 1866, may now be added half as many more species as are therein credited to it, which additions include many of the most interesting plants.

I have to thank a few correspondents for localities. Chief of these are the Rev. Dr. Gwyn, formerly Dean of Raphoe; Mrs. Leebody, of Londonderry; Mr. Hunter, of Buncrana; and some others. And I must not omit to acknowledge here the pleasurable society and the valuable hospitality which I have received from the various resident gentry of the County, without which many a remote district could never have been thrashed, many a weary day could have only had a more weary ending in some of the wretched inns, now happily becoming things of the past in Donegal.

H.C. HART.

CARRAGHBLAGH, CO. DONEGAL,
May, 1898.

CONTENTS.

	PAGE
INTRODUCTION	ix
INDEX	xv
TOPOGRAPHY:	
GENERAL	1
DISTRICTS I. TO VIII.	3
GEOLOGY:	
INISHOWEN	16
N.-W. AND CENTRAL DONEGAL	17
SOUTH-EASTERN DISTRICT	19
SOUTH-WEST DONEGAL	20
BLUESTACK AND BARNESMORE	23
GEOLOGICAL STRUCTURE AS AFFECTING DISTRIBUTION	24
GEOGRAPHICAL DISTRIBUTION:	
ANALYSIS OF DONEGAL FLORA	34
COMPARISON OF FLORA WITH ADJOINING COUNTIES	57
PLANTS ARRANGED IN DESCENDING ORDER AS THEY	
OCCUR ON THE MOUNTAINS	84
DISTRIBUTION IN THE DISTRICTS, ETC.	90
FLORA:	
DICOTYLEDONES	109
MONOCOTYLEDONES	238
ACOTYLEDONES	283

	PAGE
CLIMATE:	
TEMPERATURE OF AIR	297
SEA TEMPERATURES	328
SUNSHINE	340
RAINFALL	343
PRESSURE	348
TABLES OF TEMPERATURE	354
APPENDIX:	
PLANT-NAMES AND PLANT-LORE	367
ADDENDUM	392

INDEX

	PAGE		PAGE
ACHILLEA ...	177	Aquilegia ...	114
Acotyledones ...	283	Arabis ...	117
Adder's-tongue...	291	Arialaceæ ...	169
Adiantum ...	284	Arctium ...	180
Ægopodium ...	164	Arctostaphylos ...	195
Æthusa ...	167	Arenaria ...	129
Agrimonia ...	148	Armeria ...	196
Agrimony ...	148	Aroideæ ...	248
Agrostis ...	272	Arrhenatherum ...	274
Aira ...	272	Artemisia ...	178
Ajuga ...	222	Arum ...	248
Alchemilla ...	147	Ash ...	200
Alder ...	232	Asperula ...	171
Alexanders ...	161	Aspidium ...	288
Alisma ...	249	Asplenium ...	285
Alismaceæ ...	249	Aster ...	174
Allium ...	243	Athyrium ...	287
Allseed ...	134	Atriplex ...	224
Alnus ...	232	Atropa ...	207
Alopecurus ...	270	Avena ...	274
Althæa ...	134	Avens ...	146
Ammophila ...	272	Awlwort ...	121
Anagallis ...	199		
Anchusa ...	202	BALLOTA ...	221
Anemone ...	110	Barbarea ...	117
Angelica ...	167	Barberry ...	114
Antennaria ...	175	Bartsia ...	212
Anthemis ...	177	Bastard Pimpernel ...	199
Anthoxanthum ...	270	Beaked Parsley ...	165
Anthriscus ...	165	Beak Rush ...	258
Anthyllis ...	140	Bearberry ...	195
Apium ...	162	Bedford Willow ...	233
Apple ...	150	Bedstraw ...	170
Aquifoliaceæ ...	136	Beech Fern ...	290

	PAGE
Beet	... 224
Bellis	... 174
Bent	... 272
Berberideæ	... 114
Berberis	... 114
Beta	... 224
Betula	... 232
Bidens	... 176
Bilberry	... 194
Bindweed	... 205
Birch	... 232
Bird-cherry	... 143
Bird's Foot Trefoil	... 140
Bishop's weed	... 164
Bistort	... 226
Bitter-cress	... 118
Blackberry	... 144
Black Bindweed	... 227
Black Medick	... 138
Black Sallow	... 234
Black Spleenwort	... 286
Blackthorn	... 142
Bladder Campion	... 126
Bladderwort	... 214
Blinks	... 132
Blue-bell	... 243
Blysmus	... 258
Bog Asphodel	... 244
Bog Myrtle	... 231
Bog Pimpernel	... 200
Boraginaceæ	... 202
Botrychium	... 292
Brachypodium	... 281
Bracken	... 284
Bramble	... 144
Brassica	... 121
Brittle-fern	... 287
Briza	... 277
Broad Fern	... 289
Brome-grass	... 280
Bromus	... 280
Brookweed	... 200
Broom	... 138
Broomrape	... 213
Buckbean	... 201

	PAGE
Bugle	... 222
Bugloss	... 202
Bulrush	... 255
Burdock	... 180
Bur Marigold	... 176
Burnet Rose	... 148
Burnet Saxifrage	... 164
Bur-reed	... 247
Butter-bur	... 179
Buttercup	... 110, 112
Butterwort	... 214
CABBAGE	... 121
Cakile	... 123
Calamint	... 218
Calamintha	... 218
Callitriche	... 157
Calluna	... 195
Caltha	... 113
Campanula	... 193
Campanulaceæ	... 192
Caprifoliaceæ	... 169
Capsella	... 122
Caraway	... 163
Cardamine	... 118
Carduus	... 181
Carex	... 259
Carlina	... 180
Carrot	... 168
Carum	... 163
Caryophyllaceæ	... 126
Catabrosa	... 276
Catchfly	... 126
Cat-mint	... 218
Cat's-tail	... 246, 271
Caucalis	... 168
Celandine	... 112, 116
Celastraceæ	... 137
Celery	... 162
Centaurea	... 181
Centaury	... 201
Centranthus	... 172
Centunculus	... 199
Cephalanthera	... 240
Ceratophylleæ	... 236

	PAGE
Ceratophyllum ...	236
Cerastium ...	128
Ceterach ...	287
Chamomile ...	177
Chara ...	296
Characeæ ...	296
Cheiranthus ...	117
Chelidonium ...	116
Chenopodiaceæ ...	224
Chenopodium ...	224
Cherry ...	143
Chickweed ...	129
Chicory ...	182
Chrysanthemum ...	178
Chrysosplenium ...	153
Cichorium ...	182
Cinquefoil ...	147
Circæa ...	160
Cistaceæ ...	124
Cladium ...	259
Clover ...	139
Club-moss ...	294
Cochlearia ...	120
Cock's-foot ...	276
Colt's-foot ...	178
Columbine ...	114
Comfrey ...	202
Compositæ ...	173
Coniferæ ...	237
Conium ...	161
Conopodium ...	164
Convolvulus ...	205
Convolvulaceæ... ..	205
Cornaceæ ...	169
Corn Cockle ...	128
Corn Marigold ...	178
Cornus ...	169
Corydalis ...	116
Corylus ...	232
Cottonsedge ...	258
Cotyledon ...	154
Couch-grass ...	281
Cow-berry ...	194
Cow Parsnep ...	168
Cow-wheat ...	213

	PAGE
Crack Willow ...	233
Crambe ...	123
Cranberry ...	194
Crane's-bill ...	135
Crassulaceæ ...	154
Cratægus ...	150
Crepis ...	182
Crithmum ...	165
Crowberry ...	236
Crowfoot ...	110
Crow Garlic ...	243
Cruciferae ...	117
Cryptogams ...	283
Cryptogramme ...	285
Cuckoo Flower ...	119
Cuckoo-pint ...	248
Cudweed ...	175
Cupuliferæ ...	232
Currant ...	154
Cuscuta ...	206, 392
Cushion Pink ...	127
Cynosurus ...	275
Cyperaceæ ...	255
Cystopteris ...	287
Cytisus ...	138
DACTYLIS ...	276
Daisy ...	174
Dandelion ...	192
Danewort ...	170
Darnel ...	281
Daucus ...	168
Deadly Nightshade ...	207
Dead-nettle ...	221
Deschampsia ...	273
Devil's Bit ...	173
Dicotelydones ...	109
Digitalis ...	209
Dipsaceæ ...	173
Dipsacus ...	173
Dock ...	227
Dodder ...	206
Dog Rose ...	149
Dog's-tail ...	275
Dogwood ...	169

	PAGE
Draba	... 119
Droseraceæ	... 155
Dryas	... 146
Duckweed	... 249
Dutch Clover	... 139
Dwarf Furze	... 137
Dyer's Weed	... 124
EARTHNUT	... 164
Echium	... 202
Eglantine	... 149
Elatinaceæ	... 132
Elatine	... 132
Elder	... 170
Elecampane	... 175
Eleocharis	... 255
Elm	... 230
Elodea	... 238
Elymus	... 282
Empetraceæ	... 236
Empetrum	... 236
Enchanter's Nightshade...	160
Epilobium	... 159
Epipactis	... 239
Equisetaceæ	... 292
Equisetum	... 292
Erica	... 195
Ericaceæ	... 194
Eriocaulon	... 246
Eriocauloneæ	... 246
Eriophorum	... 258
Erodium	... 136
Erophila	... 120
Eryngium	... 161
Erythræa	... 201
Euonymus	... 137
Eupatorium	... 173
Euphorbia	... 229
Euphorbiaceæ	... 229
Euphrasia	... 212
Evergreen Alkanet	... 203
Evergreen Fern	... 289
FAIRY THIMBLE	... 209
False Oat	... 274

	PAGE
Ferns	... 283
Fescue	... 278
Festuca	... 278
Field Madder	... 171
Figwort	... 208
Filago	... 174
Filices	... 283
Filmy Fern	... 283
Flax	... 135
Floating Grass	... 277
Fool's Parsley	... 167
Forget-me-not	... 204
Fox-glove	... 209
Fox-tail	... 270
Fragaria	... 147
Fraxinus	... 200
Fumaria	... 116
Fumariaceæ	... 116
Furze	... 137
GALE	... 231
Galeopsis	... 220
Galium	170, 392
Gentian	... 201
Gentiana	... 201
Gentianaceæ	... 201
Geraniaceæ	... 135
Geranium	... 135
Geum	... 146
Gipsy-wort	... 217
Githago	... 128
Glasswort	... 225
Glaux	... 199
Globe Flower	... 113
Glyceria	... 277
Gnaphalium	... 175
Goat Willow	... 235
Golden Ball	... 113
Golden-rod	... 174
Golden Saxifrage	... 153
Gooseberry	... 154
Goosefoot	... 224
Goose-grass	... 171
Gorse	... 137
Goutweed	... 164

	PAGE
Gramineæ ...	270
Grass ...	270
Grass of Parnassus ...	153
Grass Wrack ...	254
Green Spleenwort ...	286
Gromwell ...	203
Grossularia ...	154
Ground Ivy ...	218
Groundsel ...	179
Guelder-rose ...	169
HABENARIA ...	241
Halorageæ ...	156
Hard Fern ...	285
Hare-bell ...	193
Hare's-foot Trefoil ...	139
Hart's-tongue ...	287
Hawkbit ...	191
Hawk's-beard ...	182
Hawkweed ...	183
Hawthorn ...	150
Hay-scented Fern ...	289
Hazel ...	232
Heath ...	195
Heath Bedstraw ...	171
Heather ...	195
Heath Grass ...	274
Heath Pea ...	142
Hedera ...	169
Hedge Mustard ...	121
Hedge Parsley ...	168
Helianthemum ...	124
Helleborine ...	239
Helosciadium ...	161
Hemlock ...	162
Hemp Agrimony ...	173
Hemp-nettle ...	220
Heracleum ...	168
Herb Robert ...	135
Hieracium ...	183
Hippuris ...	156
Holcus ...	273
Holly ...	136
Holly Fern ...	288
Honeysuckle ...	170

	PAGE
Hop ...	231
Hop Trefoil ...	140
Horned Pondweed ...	254
Hornwort ...	236
Horse-tail ...	292
Houseleek ...	155
Humulus ...	231
Hyacinth ...	243
Hydrocharideæ ...	238
Hydrocotyle ...	161
Hymenophyllum ...	283
Hypericaceæ ...	133
Hypericum ...	133
Hypochaeris ...	191
ILEX ...	136
Illecebraceæ ...	223
Inula ...	175
Irideæ ...	242
Iris ...	242
Isoetes ...	295
Ivy ...	169
JACK-BY-THE-HEDGE ...	121
Jasione ...	193
Junceæ ...	244
Juncus ...	244
Juniper ...	237
Juniperus ...	237
KIDNEY SORREL ...	228
Kidney Vetch ...	140
Killarney Fern ...	284
Knapweed ...	181
Knawel ...	223
Knotgrass ...	227
Kœleria ...	275
LABIATÆ ...	216
Lady Fern ...	287
Lady's Mantle ...	147
Lady's Smock ...	119
Lamb's Lettuce ...	172
Lamium ...	221
Lapsana ...	182

	PAGE
Lathyrus ...	142
Leguminosæ ...	137
Lemna ...	249
Lemnaceæ ...	249
Lentibulariaceæ ...	214
Lepidium ...	122
Lepturus ...	282
Leontodon ...	191
Lesser Burnet ...	144
Lesser Dodder ...	392
Ligusticum ...	167
Ligustrum ...	200
Liliaceæ ...	243
Linaria ...	207
Lineæ ...	134
Linum ...	135
Listera ...	238
Lithospermum ...	203
Littorella ...	223
Lobelia ...	192
Lolium ...	281
Lomaria ...	285
London Pride ...	151
Lonicera ...	170
Lotus ...	140, 392
Lousewort ...	212
Luzula ...	245
Lychnis ...	127
Lycium ...	206
Lycopodiaceæ ...	294
Lycopodium ...	294
Lycopus ...	217
Lyme-grass ...	282
Lysimachia ...	198
Lythraceæ ...	158
Lythrum ...	158
MAIDENHAIR ...	284
Maidenhair Spleenwort...	286
Male Fern ...	289
Mallow ...	134
Malvaceæ ...	134
Mare's-tail ...	156
Marjoram ...	217
Marram Grass ...	272

	PAGE
Marsh Fern ...	290
Marsh Mallow ...	134
Marsh Marigold ...	113
Matt-grass ...	282
Matricaria ...	177
Meadow Grass ...	277
Meadow-rue ...	109
Meadow Sweet...	143
Medicago ...	138
Melapyrum ...	213
Melica ...	276
Melick ...	276
Melilot ...	138
Melilotus ...	138
Mentha ...	216
Menyanthes ...	201
Mertensia ...	203
Mignonette ...	124
Milium ...	271
Milkwort ...	125
Millet ...	271
Mimulus ...	209
Mint ...	216
Molinia ...	275
Moneywort ...	199
Monocotyledones ...	238
Montia ...	132
Moonwort ...	292
Moor-grass ...	275
Mossy Saxifrage ...	153
Mountain Ash ...	150
Mouse-ear Chickweed ...	128
Mouse-ear Hawkweed ...	183
Mugwort ...	178
Mullein ...	207
Myosotis ...	204
Myrica ...	231
Myricaceæ ...	231
Myriophyllum ...	157, 214
Myrrhis ...	165
NAIADACEÆ ...	249
Nardus ...	282
Narthecium ...	244
Nasturtium ...	117

	PAGE
Navelwort ...	154
Neottia ...	238
Nepeta ...	218
Nephradium ...	289
Nettle ...	231
Nightshade ...	206
Nipplewort ...	182
Nuphar ...	115
Nymphæa ...	115
Nymphæaceæ ...	115
OAK ...	232
Œnanthe ...	167
Oleaceæ ...	200
Onagraceæ ...	159
Ononis ...	138
Ophioglossum ...	291
Orache ...	224
Orchideæ ...	238
Orchis ...	240
Origanum ...	217
Orobanche ...	213
Orobancheæ ...	213
Orpine ...	154
Osier ...	234
Osmunda ...	291
Our Lady's Bedstraw ...	170
Oxalis ...	136
Ox-eye Daisy ...	178
Oxyria ...	228
PAPAVER ...	115
Papaveraceæ ...	115
Parietaria ...	231
Parnassia ...	153
Parsley Fern ...	285
Parsnep ...	168
Pear ...	150
Pearlwort ...	130
Pedicularis ...	212
Pellitory ...	231
Pennywort ...	154, 161
Peplis ...	158
Pepperwort ...	122
Petasites ...	179

	PAGE
Peucedanum ...	168
Phalaris ...	270
Phleum ...	271
Phragmites ...	274
Pignut ...	164
Pilewort ...	112
Pimpernel ...	199
Pimpinella ...	164
Pine ...	237
Pinguicula ...	214
Pinus ...	237
Pipewort ...	246
Plantaginaceæ ...	222
Plantago ...	222
Plumbaginaceæ ...	196
Poa ...	277
Polygala ...	125
Polygalaceæ ...	125
Polygonaceæ ...	226
Polygonum ...	226
Polypodium ...	290
Polypody ...	290
Pondweed ...	249
Poplar ...	233
Poppy ...	115
Populus ...	233
Portulacææ ...	132
Potamogeton ...	249
Potentilla ...	147
Poterium ...	144
Prickly Saltwort ...	225
Primrose ...	198
Primula ...	198
Primulaceæ ...	198
Privet ...	200
Prunella ...	219
Prunus ...	142
Pteris ...	284
Pulicaria ...	176
Purging Flax ...	135
Purple Loosetrife ...	158
Pyrola ...	195
Pyrus ...	150
QUAKING-GRASS ...	277

	PAGE
Quercus ...	232
Quillwort ...	295
RADIOLA ...	134
Radish ...	123
Ragweed ...	180
Ramsons ...	243
Ranunculaceæ ...	109
Ranunculus ...	110
Raphanus ...	123
Red Campion ...	127
Reed ...	274
Reed-mace ...	246
Reseda ...	124
Resedaceæ ...	124
Rest-harrow ...	138
Rhinanthus ...	212
Rhynchospora ...	258
Ribes ...	154
Rib-grass ...	222
Robin-run-the-hedge ...	171
Rock Cress ...	117
Rock Rose ...	124
Rosa ...	148
Rosaceæ ...	142
Rose-bay ...	159
Rose-root ...	154
Rowan ...	150
Royal Fern ...	291
Rubiaceæ ...	170
Rubus ...	144
Rumex ...	227
Ruppia ...	254
Rush ...	244
SAGINA ...	130
Salicineæ ...	233
Salicornia ...	225
Salix ...	233
Sallow ...	235
Salsola ...	225
Sambucus ...	170
Samolus ...	200
Samphire ...	165
Sandwort ...	129

	PAGE
Sandwort Spurrey ...	131
Sanicula ...	161
Saponaria ...	126
Saussurea ...	180
Saxifrage ...	151
Saxifrageæ ...	151
Scabiosa ...	173
Scabious ...	173
Scandix ...	165
Schænus ...	259
Scilla ...	243
Scirpus ...	255
Scleranthus ...	223
Scolopendrium ...	287
Scorpion Grass ...	204
Scotch Fir ...	237
Scotch Rose ...	148
Scottish Lovage ...	167
Scrophularia ...	208
Scrophulariaceæ ...	207
Scurvy Grass ...	120
Scutellaria ...	219
Sea Blite ...	225
Sea Campion ...	126
Sea Gromwell ...	203
Sea Holly ...	161
Sea Kale ...	123
Sea Lavender ...	197
Sea Milkwort ...	199
Sea Pink ...	196
Sea Rocket ...	123
Sea Spleenwort ...	286
Sedge ...	259
Sedum ...	154
Selaginella ...	295
Selaginellaceæ ...	285
Self-heal ...	219
Senebiera ...	122
Senecio ...	179
Sesleria ...	275
Shamrock ...	139
Sheep's Scabious ...	193
Shepherd's Needle ...	165
Shepherd's Purse ...	122

	PAGE
Sherardia	... 171
Shore-weed	... 223
Silene	... 126
Silver weed	... 147
Sisymbrium	... 120
Sium	... 163
Skull-cap	... 219
Sloe	... 142
Smyrniun	... 161
Sneezewort	... 177
Soapwort	... 126
Soft Grass	... 273
Solanaceæ	... 206
Solanum	... 206
Solidago	... 174
Sonchus	... 192
Sorrel Dock	... 228
Sparganium	... 247
Spear-thistle	... 182
Spearwort	... 111, 113
Speedwell	... 210
Spergula	... 130
Spergularia	... 131
Spike-rush	... 225
Spindle-tree	... 137
Spiræa	... 143
Spleenwort	... 285
Spurge	... 229
Spurrey	... 131
Stachys	... 219
Statice	... 197
Stellaria	... 129
Stellatæ	... 170
Stinking Iris	... 242
St. John's Wort	... 133
Stonecrop	... 154
Stork's Bill	... 136
Strawberry	... 147
Suæda	... 225
Subularia	... 121
Sundew	... 155
Sweet Cicely	... 165
Sweet Mountain Fern	... 290
Sweet Vernal Grass	... 270
Sweet Woodruff	... 171

	PAGE
Swine's Cress	... 122
Symphytum	... 202
TANACETUM	... 178
Tansy	... 178
Taraxacum	... 192
Tare	... 141
Taxus	... 237
Teasel	... 173
Teucrium	... 222
Thale Cress	... 120
Thalictrum	... 109
Thistle	... 181
Thrift	... 196
Thyme	... 217
Thymus	... 217
Timothy	... 271
Toad-flax	... 207
Tormentil	... 147
Trefoil	... 139
Trichomanes	... 284
Trifolium	... 139
Triglochin	... 249
Triodia	... 274
Trisetum	... 273
Triticum	... 281
Trollius	... 113
Tussilago	... 178
Tutsan	... 133
Twayblade	... 238
Twig Rush	... 259
Typha	... 246
Typhaceæ	... 246
ULEX	... 137
Ulmus	... 230
Umbelliferæ	... 161
Urtica	... 231
Urticaceæ	... 230
Urticularia	... 214
VACCINIUM	... 194
Valerian	... 172
Valeriana	... 172
Valerianaceæ	... 172

	PAGE
Valerianella ...	172
Verbascum ...	207
Verbena ...	216
Verbenaceæ ...	216
Veronica ...	210
Vervain ...	216
Vetch ...	141
Viburnum ...	169
Vicia ...	141
Viola ...	125
Violaceæ ...	125
Violet ...	125
WALL-FLOWER ...	117
Wall Rue ...	285
Watercress ...	117
Water Dropwort ...	167
Waterlily ...	115
Water Milfoil ...	157
Water Parsnep ...	162, 163
Water Pepper ...	227
Water Plantain ...	249
Water Purslane ...	158
Water Starwort ...	157
Water Thyme ...	238
Water-wort ...	132
Wheat Grass ...	281

	PAGE
Whin ...	137
White Beam ...	150
White Campion ...	127
White-rot ...	161
Whitethorn ...	150
Whitlow Grass ...	120
Whortle-berry ...	194
Wild Oat ...	274
Willow ...	233
Willow Herb ...	159
Winter-cress ...	117
Winter-green ...	195
Wood Anemone ...	110
Woodbine ...	170
Woodrush ...	245
Wood Sanicle ...	161
Wood Sorrel ...	136
Wound-wort ...	219
Wych Elm ...	230
YELLOW PIMPERNEL ...	198
Yellow Oat-grass ...	273
Yew ...	237
ZANNICHELLIA ...	254
Zostera ...	254

DONEGAL FLORA.

TOPOGRAPHY.

Donegal, the most northern county in Ireland, extends from N. Lat. $54^{\circ} 30'$ to $55^{\circ} 24'$, and from W. Long. $6^{\circ} 55'$ to $8^{\circ} 50'$. Its greatest length from Inishowen Head in the N.E. to the Bundrowes River south of Bundoran is 86 miles; and its greatest breadth from the Bloody Foreland in the N.W. to Pettigoe in the S.E. is 46 miles.

Donegal is bounded on the east by Lough Foyle and the River Foyle, which separate Donegal and Derry. South of this the County Tyrone forms the remainder of the eastern boundary. On the south of the county, Donegal adjoins Fermanagh for about forty miles, and for a short distance in the extreme south-west (about ten miles) it abuts upon Leitrim. The Atlantic Ocean surrounds the rest of the county, giving a coast line of nearly 200 miles, with numerous bays, inlets, estuaries, and other indentations.

There are many islands around the coast, lying chiefly abreast of that portion of the mainland from Horn Head to Slieve League. Inistrahull is, however, north of these and north of all Ireland, lying about seven miles north-west from Malin Head. Several of the Islands are inhabited, and the largest of these are Tory and Aran. None of them are of any special botanical interest.

The principal bays are Lough Swilly, Lough Foyle,

Mulroy, Sheephaven, Ballyness, Loughros and Donegal; and the most important headlands with which this beautiful coast is studded are those of Inishowen Head, Glengad Head, Malin Head, Dunaff Head, the Bin, Melmore, Horn Head, Bloody Foreland, Slieve-a-toeey, Glen Head and Slieve League.

The county is a large one, comprising an area of 1,197,154 acres. It is the fourth largest in Ireland, and one of six with over a million acres.* Less than one-half of this area is under cultivation. The remainder is either mountain, bog, or lake surfaces.

Of lakes there is a vast number, but they are all of small size. Lough Derg, celebrated as a pilgrimage station since the Middle Ages, is the largest, with a circumference of, perhaps, ten miles. Others are Lough Eske, Glenbeagh, Gartan and Gweedore, Lough Finn and Glenlough.

The rivers are also for the most part small and unimportant. The largest body of fresh water is that of the River Erne, running for five miles between Lough Erne and the sea. The Foyle is tidal for its whole length, and more properly estuarine. The longest stream is the Finn (the chief tributary of the Foyle), with a length of about thirty-five miles. There are other rivers, the Swilly, the Leannan, and the Gweebarra. Owing to the deep indentations in the coast-line already alluded to, long rivers may be said to have ceased to exist, and the powerful erosion of the Atlantic has converted their valleys into estuaries.

The mountains rise in several places to 2000 feet. The highest point is Errigal, 2466 feet. Slieve Snacht, Muckish,

*Cork, 1,849,686; Galway, 1,569,505; Mayo, 1,360,731; Kerry, 1,185,918; Tipperary, 1,061,731.

Dooish, Slieve Snacht West, Bluestack and Lavaghmore are 2000 feet or upwards, Aghla, Slieve League, and Silver Hill are within a few feet of this height.

Of these Slieve League (1972 feet) is the only one that is actually maritime, and its sea cliffs are amongst the finest in Western Europe.

With the exception of that portion of the county which adjoins Tyrone and Londonderry, Donegal is chiefly mountainous, and it is only in that portion of the county that cultivation is absolutely continuous for any considerable extent. In the rest of the county cultivation lies in patches in the valleys, or along the margins of the streams up to about five hundred feet, and the borders of the ocean. The cultivated district alluded to here is that of Raphoe, or the electoral division of East Donegal. Though this barony is but a fifth its valuation is more than a third of the entire county.

DISTRICT I.—NORTH (OR EAST) INISHOWEN.

The Barony of East Inishowen. This is the extreme north of the county, and includes also its most eastern point at Inishowen Head. The boundary between this barony and that of West (South) Inishowen is a line starting from a point about mid-way between Leenane and Dunree on Lough Swilly, and running thence eastwards, leaving Bulben Mountain to the north (in District I.) and the Mintiaghs to the south (in District II.). Thence the line passes over the summit of Slieve Snacht with a south-easterly trend to meet Lough Foyle a little south of Quigley's Point (in District I.).

This district has a fine range of sea cliffs from Malin Head to Inishowen Head. These are very difficult of examination, and may yet harbour some interesting plants,

such as *Hieracia*. There is a considerable extent of high-lying moorland south-east from Carndonagh. The highest point is Slieve Snacht, 2019 feet, but owing to its rounded form and heather-clad surface it is of little botanical interest. Bulben Mountain, 1650 feet, has a better claim to notice and on it Robert Brown discovered *Saussurea alpina*, *Saxifraga oppositifolia* and *Carex rigida*, just one hundred years ago.

The plants peculiar to this district are*:-

Raphanus maritimus.	Vicia lathyroides.
Crambe maritima.	Filago minima.
Silene acaulis.	Carduus pycnocephalus.

Those which occur in one other district only, are:-

Arenaria trinervia.	Mertensia maritima.
V. angustifolia.	Polygonum viviparum.
Carduus crispus.	P. minus.
Orobanche Hederæ.	

DISTRICT II.—SOUTH INISHOWEN.

The Barony of West Inishowen. This district comprises the rest of Inishowen, also the northern half of the "Liberties." It is bounded by a line running from the head of Blanket Nook (south of Inch on Lough Swilly), which runs east by Castle Forward and Bogay Hill to Londonderry.

South Inishowen is a much more cultivated district than the northern half of the peninsula. The two united include all the land west of Lough Foyle to Lough Swilly. The

*In these illustrations only undoubted natives are admitted.

principal drainage of the whole barony is western, all the larger and longer streams flow into the Swilly, or the ocean north of it. The mountainous portion of South Inishowen is chiefly at its northern end, or a continuation of the highlands of North Inishowen.

The geological position of Inishowen is chiefly in the Cambro-Silurian period. Quartzose and gneiss are the prevalent formations, the latter being held by some geologist to be of Laurentian age. At Dunaff Head, granite occurs in some quantity, while there and at Buncrana trap-dykes form a considerable feature. Limestone is scarce and chiefly impure. Amongst the mountains outcrops of shales and schists (as on Bulben and Dunaff) are occasionally met with. But many of them, as Slieve Snacht, Erris, and Rahtin, are of barren quartzose, a rock which is usually either devoid of vegetation or clad entirely with heather. Being almost purely silicious and devoid of aluminous or alkaline properties, it disintegrates very sparingly, and when it does, it forms a poor sandy soil.*

The plants occurring only in this district are:—

Ononis repens.	Bartsia viscosa.
Myriophyllum verticillatum.	Calamintha clinopodium.
Oenanthe fistulosa.	Euphorbia hyberna.
Leontodon hispidus.	Poa compressa.

DISTRICT III.—EAST KILMACRENAN.

Here we have to depart from electoral divisions, which have added Fanet to Inishowen to suit political exigencies,

* It would be interesting to work out the problem how far quartzite, and “Congested Districts” agree in range in Ireland.

and the baronial territory is of too great an extent for our purpose. Kilmacrenan is sub-divided, therefore, into East and West, the boundary line starting from the head of Sheephaven at Doe Castle, up the Duntally River to Creeslough, thence by the old lower road southwards to Lake Akibbon, which it traverses to meet the Churchill road to Churchill, leaving Gartan Lake to the west. From Churchill the boundary line will be due south to meet the Raphoe Barony line on the Swilly River at Swilly Bridge, thence eastwards down the Swilly to its estuary.

This district is a varied one, with a considerable extent of fertile land, chiefly along the shores of Lough Swilly. It includes all Fanet,* all the coasts of Mulroy, and the well cultivated parts around the towns of Kilmacrenan, Ramelton, Rathmullan and Letterkenny (on its north). The highest mountain is Lough Salt, 1546 feet, which is, however, devoid of botanic interest, owing to its geological structure. There are numerous small lakes, chiefly in Fanet. The larger ones are Loughs Fern, Keel, Kindrum, and Glen. The Swilly and the Leannan, both draining eastwards, are the chief rivers. The Lackagh is a short stream, an Erne on a small scale, from Glen Lough to the sea. Lough Salt Mountain lies in the heart of the largest area of moor and bog in the district.

Owing to the complicated indentations of Mulroy and

* With regard to the spelling of this word, there is an erroneous tendency, due perhaps to the Ordnance Survey maps, to make the final letter 'd.' The pronunciation of the people of Fanet is invariable a final 't,' like 'planet.' The earlier writers, I believe, always spelt the word with a final at, it or et. It was the country of 'MacSwyne A'Fanne,' or 'MacSwyne O'Fanet,' so spelt in a sixteenth century description of Lough Foyle and Fanet. In the *Annals of the Four Masters* the name is spelt Fanat (12th century).

Lough Swilly, but more especially of Mulroy, East Kilmacrenan has an immense extent of coast line—probably not under a hundred and thirty miles. When we consider that we are dealing with an area of only about three hundred square miles, not insular, this is remarkable. The geological structure is for the most part quartzite varied with trap-dykes and intrusions both of shales and schists. A remarkable and valuable vein of limestone runs across Fanet passing under the bed of Mulroy from N.W. to S.E. The north coast of Fanet is granitic for a considerable distance, and on the western base of Knockalla, a highly interesting set of beds of sandstone and conglomerate of a more recent age than the Silurian surroundings occurs. There is no other outcrop of Lower Old Red Sandstone in Donegal. A conspicuous “standing-stone” formed of this conglomerate sufficiently indicates the site.

The vein of limestone mentioned above is noticeable by the manner in which it is shown by absence of heather and presence of furze. I have not, however, observed any special limestone plants due to its occurrence.

The undoubted natives found only in District III. are:—

Ranunculus auricomus.	Euphorbia amygdaloides.
Ulex Gallii.	E. paralias.
Saxifraga hypnoides.	Salix phylicifolia.
Linaria repens.	Typha angustifolia.
Stachys Betonica.	Potamogeton decipiens.
[Scleranthus annuus].	P. filiforme.

Trollius europæus, in Ireland found only in Donegal,

has its headquarters in this district. *Orobanche rubra* is very rare elsewhere.

DISTRICT IV.—WEST KILMACRENAN.

The remainder of the Barony of Kilmacrenan. This district is the extreme north-west of the county. The eastern boundary has already been defined. Elsewhere the boundary is the ocean and that of the barony. Starting at the head or Inisfree Bay, the boundary line follows the Gweedore River for a short distance, and then keeping a south-easterly direction, leaves Lough Anure to the south (in District VI.) and Slieve Snacht West to the north (in District IV.). It then keeps Lough Barra to the north (in District IV.), and after a few more miles in the same direction strikes the Raphoe barony to the east.

The western part of Kilmacrenan contains the highest mountains in Donegal, Errigal, 2466 ft, and Slieve Snacht West, 2240 ft. Muckish, 2197 ft, and Dooish, 2147 ft, are surpassed by those in the south of the county. It is almost exclusively a country of moorland, the cultivated parts lying chiefly along the coast, and bearing a small proportion to the remainder. There are many lakes, or rather tarns, of which the largest are Gartan, Glenveagh, Gweedore Lakes, and Lough Barra. Some of the most beautiful scenery of the county lies in this district, that of Glenveagh and the noble cliffs of Horn Head. The coast-line is full of sandy bays, small islets, tidal or otherwise, and many indentations, but there are no deep inlets as in East Kilmacrenan. The rivers are merely mountain torrents. The country is storm-swept and barren, except

where the configuration of the land gives a shelter from the fury of the Atlantic Gales. Tory island belongs to this district, and Mr. Barrington has given us an exhaustive list of its plants.

There are singularly few plants peculiar to this district. All the more interesting species are met with again, their numbers swelled, in the more southern mountains, where the Atlantic storms have not such free play amongst them. *Saxifraga umbrosa*, *Pyrola minor*, and *Zostera nana* may be mentioned. Professor Dickie has, however, given a somewhat unsatisfactory, and as yet unverified locality for "London Pride" from District I. Neither has *Pyrola minor* been re-discovered. *Zostera nana* remains the only unchallenged species.* *Trichomanes radicans* is the most interesting one. *Eriocaulon septangulare* occurs inside the boundary. *Thalictrum minus (dunense)*, the sandhill form, is peculiar. *Myosotis collina* is very rare in Ulster.

DISTRICT V.—THE BARONY OF RAPHOE.

This district includes the southern half of the Derry Liberties. It is bounded by the Foyle and the County of Tyrone on its east. At its south-eastern extremity it is separated from Tirhugh and Banagh by a line S.E. and N.W. across the Gap of Barnesmore, leaving the Bluestack Mountains west and south of it. The line then trends northwards through a desolate region, leaving Lough Finn to the west, till it strikes the boundary of District IV. The northward limit of District V. is determined by District IV,

* Almost all the original records of rare Donegal plants are from this district only. But further research has lowered the botanical flag in the "Donegal Highlands," and placed it in the Barony of Banagh.

and District III, and is co-incident with the Swilly for the chief part of it's length.

This is the most prosperous and cultivated portion of the county, on its eastern side. The chief peculiarities of its physical formation are its rivers, since it almost monopolizes the Finn, Swilly, and Foyle, which are the most important arteries in the county. There are no lakes or mountains of any consequence, and little scenery of interest.

Cardamine amara, *Polygonum Bistorta*, *Trollius europæus*, and *Carex aquatilis*, are the most interesting plants in this district, but, excepting the first, they are not peculiar to it. This part of the county, however, needs further exploration. It is the least inviting to a botanist, and has, therefore, been most neglected.

DISTRICT VI.—BOYLAGH.

This district is bounded on the north by West Kilmacrenan, or District IV; on the east by Raphoe, or district V; and on the south by Banagh (District VIII). The southern boundary starts at the head of Loughrosmore Bay, a little north of Ardara, and runs eastwards, keeping Glenties on the north and the Bluestack Mountains on the south in district VIII, till it meets the Raphoe boundary on the north-east of the Bluestacks at the Reelan River. The western boundary is the ocean, interspersed with numerous islands, including Aran Island, the largest off the coast of Donegal.

In this district lies The Rosses, a singular country, low-lying, full of lakes, and abounding with granite and granitoid boulders or rock *in situ* throughout. There are

many sea-loughs, but none of large size, except that of Gweebarra which forms an important estuary, and is tidal to Doocharry Bridge, some 12 or 15 miles from the open sea. The chief characteristic of this district is the multitude of small lakes. Often, as in The Rosses, it becomes difficult to thread one's way amongst them, and woe to the unfortunate pedestrian who is benighted in their midst.

The plants peculiar to the Boylagh district are:—
Saxifraga Sternbergii. *Eriophorum latifolium.*
Potamogeton prælongus.

A few others of interest, not peculiar, should be mentioned:—

<i>Arabis ciliata.</i>	(<i>Atropa Belladonna.</i>)
<i>Draba incana.</i>	<i>Taxus baccata.</i>
<i>Elatine hexandra.</i>	<i>Eriocaulon septangulare.</i>
<i>Centunculus minimus.</i>	<i>Carex aquatilis.</i>

DISTRICT VII.—TIRHUGH.

The Barony of Tirhugh is a protrusion on the extreme south of Donegal, stretching into Tyrone and Fermanagh, and almost enclosed by them and a short stretch of coast line from Donegal to Ballyshannon. Leitrim forms also a portion of the southern boundary. Tyrone and Fermanagh make up the rest of the south and east limits. Donegal Bay bounds it on the west. There remains therefore but a short bit on the north or neck of the promontory to be mentioned. With this line I have taken a slight liberty. The baronial boundary runs up north-east from the town of Donegal, through the middle of Lough Esk, and thence

into the mountains adjoining Bluestack, to meet the Raphoe barony line. This is a very vague line, and has the additional drawback of cutting up natural features, *i.e.*, Lough Esk and the eastern extension of the Bluestacks. The boundary for our purposes is better defined by the line of the road to Barnesmore Gap from Donegal, south of the barony line, and running directly to the Raphoe line.

In this district we enter for the first time on considerable areas of limestone, and the vegetation is accordingly modified, and more varied than in those already dealt with. This formation forms a broad belt along the coast of Donegal Bay as far north as Killybegs (in District VIII.) It follows the course of the Erne inland to Belleek, and stretches further, in a northerly direction to Pettigo, on the edge of the county in Tirhugh.

The most interesting development of this formation is at Brown Hall, where there are subterranean caverns and tunnels admitting the underground course of a stream. From this point to Cavan Garden is a stretch of broken, rocky, limestone ground where one would expect many more interesting species than I have been able to discover. It is very similar in character to certain districts in Galway and Mayo that have yielded many varieties.

The limestone is of the usual carboniferous system found throughout Ireland.

This district has no high mountain, that on the south side of Barnesmore Gap (1491 feet), being the highest hill.

The moment the limestone is left we are again on the endless heather bogs. From Pettigo to Barnesmore Gap is a dreary wilderness of lakes and bog-holes, often without

any eminences or even rocks to break the monotony for miles. One large lake, the largest in the county, Lough Derg, has antiquarian interest, although there is nothing whatever to bear this out to the disappointed visitor. Botanically it is featureless.

Of much more interest is the River Erne. This fine body of water forms a series of cascades over limestone rocks from Lough Erne to Ballyshannon, a distance of about five miles. For that short distance it is by far the largest body of fresh water in the county, and to it we are indebted for several species not occurring elsewhere. At one point near Pettigo, Donegal can claim a small portion of the shore of Lough Erne.

The following species have not been gathered elsewhere in the county:—

Thalictrum flexuosum.	†Origanum vulgare.
†Aquilegia vulgaris.	Rumex Hydrolapathum.
Helianthemum vulgare.	Potamogeton flabellatus.
Nasturtium amphibium.	Eleocharis pauciflorus.
Cornus sanguinea.	Juncus obtusiflorus.
Hieracium hibernicum.	Trisetum flavescens.
Urticularia neglecta.	Milium effusum.
Gentiana Amarella.	Nephrodium Thelypteris.
‡Verbena officinalis.	

Aquilegia vulgaris is not certainly native in Inishowen. *Verbena* and *Origanum* might be challenged on account of their situation.

Other interesting and rare species of District VII, but not

peculiar, and occurring chiefly on the same limestone in District VIII, are:—

<i>Arenaria trinervia.</i>	<i>Lithospermum officinale.</i>
<i>Geranium sanguineum.</i>	<i>Potamogeton obtusifolius.</i>
<i>G. lucidum.</i>	<i>Scirpus sylvaticus.</i>
<i>Saxifraga aizoides.</i>	<i>Carex riparia.</i>
<i>Galium boreale.</i>	<i>C. vesicaria.</i>
<i>Carduus crispus.</i>	<i>Sesleria cœrulea.</i>

DISTRICT VIII.—BANAGH.

Banagh includes the whole of the promontory which forms the northern wall of Donegal Bay. Boyleagh lies on its north, and to the west of Boyleagh, Raphoe touches it for a short distance till it meets its eastern limit at Tirhugh along the line between Barnesmore and Donegal, as already described.

This district is full of varied interests. The superb cliffs of Slieve League have a world-wide fame. The scenery around Lough Esk is a combination of grandeur and grace rarely to be met with, while the whole coast line of Donegal Bay, as well as the western headland of Glencolumbkille is of so picturesque a nature that botanical exploration is pursued here with greatly increased pleasure.

The limestone formation has been already spoken of in district VII. Suffice to say that it is continuous to Killybegs, where it is replaced with a Silurian limestone along the coast, for a short distance. The Carboniferous limestone reaches inland for some distance between Donegal and Killybegs.

Besides Slieve League (1972 feet) there are several mountains of some height in Banagh. These are Bluestack, 2219 feet; Lavaghmore, 2211 feet, and Silver Hill, 1977. The largest lake is Lough Esk, three or four miles round, but there are many smaller ones.

Slieve League possesses an interesting flora – probably nowhere in Ireland are there more alpines on a single cliff.

The extreme wetness of this district no doubt conduces to the interest of its flora. One has only to scan the list of ferns and sedges to see how this remark is borne out. But the limestone is also favourable, and the result is, that District VIII. has, if not the highest total, certainly far the most interesting set of plants in Donegal. The following are peculiar to it:—

<i>Dryas octopetala.</i>	<i>C. pendula.</i>
<i>Carum verticillatum.</i>	<i>Adiantum capillus-veneris.</i>
<i>Sium angustifolium.</i>	<i>Cryptogramme crispa.</i>
<i>Carlina vulgaris.</i>	<i>Aspidium Lonchitis.</i>
<i>Hieracia.</i>	<i>Nephrodium spinulosum.</i>
<i>Cephalanthera ensifolia.</i>	<i>Equisetum hyemale.</i>
<i>Carex Bœninghausenia.</i>	

And these, of rarity in the county may be mentioned:—

<i>Thalictrum alpinum.</i>	<i>Polygonum viviparum.</i>
<i>Saxifraga aizoides.</i>	<i>Oxyria reniformis.</i>
<i>Geranium sanguineum.</i>	<i>Carex strigosa.</i>
<i>G. lucidum.</i>	<i>C. aquatilis.</i>
<i>Rosa mollis.</i>	<i>C. riparia.</i>
<i>Epilobium angustifolium.</i>	<i>Trichomanes radicans.</i>
<i>Saussurea alpina.</i>	