

THE FLORA OF MILLBROOK STATION

BY J. F. RAYNER, F.R.H.S.

LATE in the summer of 1915, while searching for specimens for the Southampton Wildflower Exhibition, my attention was drawn to the blaze of colour on the stretch of waste ground forming part of the goods yard of Millbrook Railway Station. This strip of ground, roughly in area about three and a half acres—since considerably reduced by additional sidings, extensive dumps of road-metal, and portions cleared for vegetable growing—was reclaimed from the mudland twelve or thirteen years ago, the material used being coal-ashes, chiefly from the Docks, gravel ballast from the line, and in one part chalk refuse, originally, no doubt, from Micheldever. In the course of six or seven weeks, while the remainder of the season lasted, I compiled a list of 198 species and varieties of plants. In the following year 40 were added; in 1917, 19; in the succeeding season, 23—or 280 in all up to the end of 1918. That this total of 280 kinds of plants in three and a half acres is a remarkably large one may be ascertained by a comparison with other spots, the most productive of wildflowers I know of in the neighbourhood. In a rich meadow of the same extent 65 kinds were counted; in a rough, overgrown tract, formerly a market garden, but now out of cultivation, 61; in an old brickfield, 57; in a dry upland pasture, 43; in a heath, 22; and so on. A truer comparison would no doubt be with other areas of ground similarly made up or laid bare; such are usually prolific of variety, especially for a time, till the stronger plants crowd out the weaker; the perennials oust the annuals. I have no records of such at hand: I hope this paper may elicit some; but I feel confident that Millbrook goods yard will not be found second to any.

Besides, it is not only in numbers that this ground is remarkable, but also for the assemblage of uncommon, or at any rate interesting, plants, some of which appeared only for a time, and then vanished, sometimes, no doubt, from inherent inability to establish themselves, but often from the periodical cutting down of the vegetation, with the result, and probably the intention, of crippling its increase, at least from seed. These interferences with the course of Nature detract from the value of this record as an ecological study, but, even as it is, I judged it worth making. To pass in review some of the chief occupants of this "waste" ground: from the point of view of effect and beauty of colour, that is chiefly furnished by the Rosebay for crimson, the Melilot and Toadflax for yellow, not to mention the Ragwort and Hawksbeard; the Milfoil and Hedge Bedstraw for white, with pink from willowherbs of various kinds, and purples from *Salvia* and thistles. A closer inspection reveals a number of species no less noteworthy for their scarcity than their beauty. One of the most conspicuous of these is the Crown Vetch (*Coronilla varia* L.), which bears flattish heads of pea-shaped flowers of a clear pink. The habit is spreading, not climbing; it has no tendrils, so is not a true vetch. There were three or four strong plants of it, now reduced to one. The Crown Vetch has been found in several places in the South of England, but has not, I think, been hitherto recorded for Hampshire. Since noting it here, I have seen it in Lymington, and in Highfield, Southampton. It is a native of the Continent, and is therefore an "alien," imported accidentally.

Another alien, found in considerable quantity at Millbrook, is the handsome Whorled Sage (*Salvia verticillata* L.), a South of France plant, with long, three-forked stems beset with rings ("whorls") of purple and blue, lipped flowers. The ample foliage is of a rich deep green, wrinkled like that of the primrose, but triangular. The Rev. E. F. Linton tells me he has seen it in the Bournemouth district; I have found it myself at Netley; it has established itself in a number of

other places throughout Britain. If given a chance, it shows every ability to become a fixture at Millbrook. In 1916 a fine example or two of an allied plant, the Wood Sage (*Salvia sylvestris* L.), appeared, but has now been displaced by potato-planting. It is a tall and elegant plant, a native of Central Europe, and must not be confounded with the homely Woodsage (*Teucrium Scorodonia* L.), which is quite at home here. A contrast to these is the yellow Long-leaved Evening Primrose (*Enothera longifolia* Jacq.), a native of South America. It is not so tall or robust as the Common Evening Primrose (*E. biennis* L.) (one of the most frequent of casuals, but not seen here), nor are the flowers so large. The leaves and stems are downy. It has been found only once before in Britain, in the Selkirk district, in 1912. In 1915 Millbrook provided only a solitary flowering specimen of the blue Viper's Bugloss (*Echium vulgare* L.), afterwards increasing to four, but close beside it was the rare Jersey Bugloss (*E. plantagineum* L.), a lower-growing plant, with large, showy flowers. It is included in the British Flora as a native of Jersey, but so far as this country is concerned, and so far as I have been able to ascertain, it has hitherto been found only in Cornwall and Gloucestershire; this is, at any rate, its first recorded appearance in Hants. Like the Evening Primrose, it is a biennial, and I suppose the scythe stopped their seeding, for neither was seen again.

Yet another alien new to the county is the Norwegian Cinquefoil (*Potentilla norvegica* L.), from Northern Europe, of which Millbrook provided a couple of groups, far apart; sidings swept away one, and the other one I could not find again, but a plant has come up in my own garden. It is a distinct plant, with sturdy, erect, rose-tinted stems, closely furnished with five-parted leaves and rather small flowers of a full yellow. There are two small white flowers, of the cruciferous or wallflower and cabbage tribe—the Virginian Cress (*Lepidium virginicum* L.), a North American plant; and the Hoary Alyssum (*A. incanum* L.), of European origin. The last-named has been noted for many years as turning

up occasionally in Britain; the Virginian Cress was first seen in 1908. They are both quite new to Hampshire, and both seem come to stay. The more familiar Hoary Cress (*Lepidium Draba* L.) is making its way vigorously, as it is apt to do. Among yellow-flowered members of this tribe, usually well represented in this sort of ground, are, or rather were, the *Sisymbrium altissimum* L.; from Central Europe, and *Bunias orientalis* L., Eastern Europe, both tall, much-branched plants—the former, which is a not infrequent “casual,” with pale flowers and finely cut leaves, especially the upper ones; in the rarer *Bunias* the leaves are less divided, narrow, and tapering to a long point. These were reinforced in 1917 by *Brassica elongata* Ehrh., another East Europe plant, in which the leaves are smaller and almost entire, the flowers palish. Other interesting Continental plants are the Forked Catchfly (*Silene dichomata* Ehrh.), superficially not unlike our White Campion (*Lychnis alba* Mill.), but with smaller flowers; and the Fragrant Milfoil (*Achillea nobilis* L.), the latter a charming thing, in the way of our common Milfoil or Yarrow (*A. millefolium* L.), but more elegant, with finer and aromatic foliage. There were two large patches of this in 1917, but potatoes have displaced them. I must not forget that we have an alien grass at Millbrook, an ally of our Field and Soft Bromes; it is known to science as *Bromus unioloides* H.B.K. Its native country is America, and this is its first appearance in the plant records of Hampshire.

True native plants of any rarity are not numerous. The Treacle Mustard (*Erysimum cheiranthoides* L.) has occurred; it is mentioned in Townsend's “Flora of Hampshire” as “very rare” in the county, though it has been found in other parts of the district. A kindred plant is there which, while not uncommon in Britain generally, is a rare plant in Hampshire, its only stations being the old walls on the western shore and one or two other places, and that is the evil-smelling Wall Mustard (*Diplotaxis tenuifolia* D.C.) Of course, the walls are close by. Its equally scarce relation, the Sand Mustard (*D. muralis* D.C.), a fairly well-known “ballast

plant," appeared in force, but its partiality for railways was its undoing, for it succumbed to the laying of fresh sidings. Rare in Britain generally, and quite new to the county, is the yellow-flowered and curving podded Sickle Medick (*Medicago falcata* L.), a solitary but strong plant of which appeared in 1915. The Western Furze (*Ulex Gallii* Planch.) has come here, in three or four plants, robust enough, but of prostrate habit, possibly out of deference to the scythe. This is probably its most easterly station on the mainland, though it is not uncommon throughout the Isle of Wight. It flowers in autumn like our Small Furze (*U. minor* Roth.), which it replaces in the West of England, and is readily distinguished by its stronger spines, and its flowers inclining to orange colour.

In the autumn of 1918 I came across the brilliant Deptford Pink (*Dianthus Armeria* L.). The heartless scythe had laid it low, but its stubble "broke" (as gardeners say) and threw some exceptionally deep-coloured flowers. Let us hope it may perpetuate itself; but I have my doubts.

A large group of a plant which, when I first came across it, I failed to recognize, turned out later, when in flower, to be the Spineless Thistle (*Cirsium arvense* Scop. var. *setosum* C.A. Mey), which has flat leaves without spines, but merely bristles on the margins. It has no place in Townsend's "Flora," except among "excluded plants," having been once seen, years ago, by Dr. Druce; but I saw it myself once before, near Romsey, so that it is not quite new to the county; however, it may be fairly styled a first record, since my previous find was not published. Here it has come in great strength: a large group, as I have said, and with stout stems, five feet high, or more. Near it has since appeared *Cirsium mite* Koch., an intermediate form, with leaves only slightly waved, and few spines; this is quite new to the county list.

These curious forms remind me of a very queer plant, of which two or three examples surprised me here. It was a mignonette, but the flowers were very singular, on threadlike foot-stalks. On submitting it to the authorities of Kew Gardens, it was

reported as an abnormal state of our Wild Mignonette, with— to quote the words of the report—“ stipitate capsules, each bearing a small flower at the base of the cavity. This is an example of the phenomenon known as ‘ intracarpellary median floral proliferation of the flower.’ ” It has not been seen since 1915. But in 1917 a “ monster,” less remarkable, but still interesting, was seen. It was an exceedingly robust plant of the Wild Carrot (*Daucus Carota* L.), with “ hen and chickens ” flowers—the heads throwing out little ones—and the collar of bracts very much enlarged, and leafy ; a condition technically described as lateral floral proliferation of the inflorescence, and phyllody of the involucre. This abnormality, according to works on plant-teratology, is not uncommon.

In addition to the native plants and the aliens, there are plants of another status which are fairly represented at Millbrook, namely, those known as “ escapes ”—that is, plants commonly cultivated in gardens found growing wild, the seeds having been carried by the wind or animals, or the roots transported among refuse. I noted the Gauze Flower (*Gypsophila paniculata* L.); Everlasting Pea (*Lathyrus latifolius* L.); Giant Persicaria (*Polygonum cuspidatum* Sieb. and Zucc.); Orange Montbretia (*M. crocosmiæflora* Hort.), Perennial Sunflower (*Helianthus rigidus* Desf.), Farm Vetch (*Vicia sativa* L.), Mangold (*Beta vulgaris* L. cult.), White Mustard (*Brassica alba* Boiss.), and several others. The pea and the mustard are in the British list as wild plants, but doubtless here are mere escapes from cultivation. The Fennel (*Fœniculum vulgare* Mill.) and the Asparagus (*A. maritimus* Mill.) have also appeared, but whether these should be included among the escapes, or are really the wild forms of these plants, I am not in a position to say. They both grow wild in this country, particularly near the sea. Of purely seaside vegetation there was little to be seen—only the Wild Beet (*Beta maritima* L.), the Sea Campion (*Silene maritima* With.), and the Sea Plantain (*Plantago maritima* L.), unless we include here a long fringe of the Hastate Orach (*Atriplex*

hastata L.). A number of trees are coming up. The Birch and the Sycamore are most in evidence; as we have all noticed, both increase freely from self-sown seed. Seen also are a couple of the Scotch Pine; and the same of the Blackthorn and the May, two or three of the Elder, a Willow or two, one of the Balsam Poplar, one of the Turkey Oak, and, most interesting of all, an example of the fine Lucombe Oak, with elegantly cut evergreen foliage. Those favourite garden shrubs, the Syringa and the Fiery Thorn, have each a representative.

Now a word on the distribution of the Millbrook plants—that is to say, their progress, and comparative abundance or scarcity. The dominant species is, I think, the Yellow Toadflax (*Linaria vulgaris* Mill.), one of the gayest of our wild flowers. This, with its creeping perennial rootstock, is all over the ground. Running it close at first was its dingy little annual relation, the Small Toadflax (*L. minor* Desf.), which came in large patches unmixed with other plants, and scattered freely among them as well. But while the former has more than held its own, the annual has now (1918) greatly decreased. The Milfoil (*Achillea Millefolium* L.) is very abundant in all parts, with some fine pink and rose-crimson forms.

The Field Melilot (*Melilotus Petitpierreana* Hayne) (*arvensis* Wallr.) shows itself exceedingly vigorous and aggressive; while the Common Melilot (*M. officinalis* Lam.) (*altissima* Thuill.) is not common at all, being confined to one small group; nor does the latter justify its specific name of "tallest," being much humbler in stature than the other. The charming White Melilot (*M. alba* Desr.) seems well established. The Mugwort (*Artemisia vulgaris* L.) is doing well. There are large and rapidly spreading patches of the Coltsfoot (*Tussilago Farfara* L.). There is a considerable show of the Wild Parsnip (*Peucedanum sativum* Benth. and Hook.), but of other plants usually associated with a chalk soil there are few: two or three Burnet Saxifrage (*Poterium Sanguisorba* L.), a single Dwarf Thistle (*Cirsium acaule* Weber), half a dozen

of the Mignonette (*Reseda lutea* L.), and the same of the Lady's Fingers (*Anthyllis vulneraria* L.); they are all exceedingly vigorous. Curiously enough, one or two moisture-loving plants are flourishing, though growing in a medium particularly deficient in moisture-holding capacity. The Hoary Willowherb (*Epilobium parviflorum* Schreb.) and the Marsh Willowherb (*E. palustre* L.) occur in quantity. The Great Hairy Willowherb (*E. hirsutum* L.), a waterside plant, is here also, in more than one place, but it is in a poor way—just lingering. The same may be said of the two water-loving Bedstraws, *Galium uliginosum* L., and *G. palustre* L. There is a fairly large colony of the Water Figwort (*Scrophularia aquatica* L.), but the Knotted Figwort (*G. nodosa* L.) is absent. The pretty Restharrow (*Ononis repens* L.), of which there was but a solitary specimen in 1915, has now increased to quite a large mat at the farther end of the ground, where it is made up of chalky material. The Goatsbeard (*Tragopogon pratensis* var. *minus* Mill.), of which, in like manner, but one was noticed originally, is now widely distributed. The Autumnal Hawkbit (*Leontodon autumnalis* L.) has greatly increased, and the Small Rough Hawksbeard (*Crepis taraxacifolia* Thuill.) even more. This plant, not long since rare in Hampshire, is now seen everywhere in the county. The dominant grasses are perhaps the Bents (*Agrostis tenuis* Sibth., and *A. alba* var. *stolonifera* L.); but the Couch (*Agropyron repens* Beauv.) has a firm footing. Altogether there are twenty-five grasses, but not a single sedge. The common annual weeds of garden and farm ("weeds of cultivation")—the Spurges, Groundsel, Chickweed, Charlock, Speedwells—are but scantily represented; though the Shepherd's Purse (*Capsella Bursa-pastoris* Medic.) and the Scentless Mayweed (*Matricaria inodora* L.) are pretty plentiful.

When we consider the origin of the soil, and the way in which the yard was made up, we can easily account for the introduction of foreign plants. Again, ashes contain abundance of plant-food; in the course of a long horticultural experience I have often seen how plants thrive in it; and

dry as the soil here must be in summer, they have grown for the most part with remarkable vigour. It is also well known that carted soil, being well aerated, nourishes plant-life wonderfully.

LIST OF PLANTS FOUND GROWING WILD AT
MILLBROOK STATION, 1915-18.

ABBREVIATIONS :—abund.=abundant ; cl.=cleared away ; com.=common ; dec.=decreased ; dpd.=disappeared ; ent.=entrance ; freq.=frequent ; inc.=increased ; plt.=plant ; scat.=scattered ; vig.=vigorous. When no date is given, 1915 is to be understood. The arrangement and nomenclature follow Druce's "List of British Plants."

- RANUNCULUS REPENS L. Creeping Crowfoot. 2-3 patches.
R. ACRIS L. Buttercup. 1-2 plts. R. BULBOSUS L.
Bulbous Buttercup. Here and there, '16.
- PAPAVER SOMNIFERUM L. Opium Poppy. Alien. A plt.
P. RHŒAS L. Red Poppy. 10-12 plts., scat., small,
'15 ; much inc., '16. P. DUBIUM L. Pale Red Poppy.
6-7 plts., strong, '16.
- FUMARIA OFFICINALIS L. Com. Fumitory. A plt.
BARBAREA LYRATA Asch. (VULGARIS Br.). Com. Winter Cress.
A plt.
- CARDAMINE HIRSUTA L. Hairy Bitter-cress. Fairly abund.,
'16.
- ALYSSUM (Farsetia) INCANUM L. Hoary Alyssum. Alien.
3-4 plts., '15. Inc.
- COCHLEARIA ARMORACIA L. Horse-radish. Escape. A
group on N. margin.
- SISYMBRIUM ALTISSIMUM L. (PANNONICUM). Tall Rocket.
2-3 plts., '15. Cl. S. OFFICINALE Scop. Hedge Mus-
tard. Here and there.
- ERYSIMUM CHEIRANTHOIDES L. Treacle Mustard. 4-5 plts.,
'15. Cl.
- BRASSICA NAPUS L. Rape. Escape. A few plts., scat.
B. RAPA L. Wild Turnip. A small group. B. ELONGATA

- Ehrh. forma ALABASTRIS GLABRIS. Alien. A plt.
 B. ARVENSIS Kuntze. Charlock. 1-2 plts. B. ALBA
 Boiss. White Mustard. Probably escape. 2 groups in
 centre and a plt. at W. end., '18.
- DIPLOTAXIS TENUIFOLIA DC. Wall Rocket. 2-3 plts.
 D. MURALIS DC. Sand Rocket. A large colony, '16. Cl.
- BURSA (Capsella) PASTORIS Weber. Shepherd's Purse. Here
 and there, especially at each end.
- CORONOPUS VERRUCARIUS (Gars.) Musch. and Thell. (PRO-
 CUMBENS Gil.). Swine's Cress. A small colony near
 entrance.
- LEPIDIUM DRABA L. Hoary Cress. A group or two, very vig.,
 '15; inc. to 6-7 groups, far apart, '17. L. RUDERALE L.
 Narrow-leaved Cress. Abund. '15. L. CAMPESTRE Br.
 Field Cress. A colony, '16. L. HETEROPHYLLUM Benth.
 var. CANESCENS Gren. and Godr. (L. SMITHII Hook). A
 group of a dozen plts., strong, '16; a second group, '17.
 L. VIRGINICUM L. Virginian Cress. Alien. A good
 number, '15. Dec.
- THLASPI ARVENSE L. Penny-cress. A group, '16.
- BUNIAS ORIENTALIS L. A strong plt. or two, '17.
- RAPHANUS RAPHANISTRUM L. Wild Radish. 1-2 plts.
 R. SATIVUS L. Garden Radish. Escape. A plt., '18.
- RESEDA LUTEOLA L. Dyer's Weed. Group of 8 or 9 plts.,
 '18. R. LUTEA L. Wild Mignonette. 5-6 plts. Ab-
 normal state with proliferous capsules. 2-3 plts., '15.
 Dpd.
- VIOLA ARVENSIS Murr. Wild Pansy. Several plts.
- DIANTHUS ARMERIA L. Deptford Pink. 3 plts., '18.
- GYPSOPHILA PANICULATA L. Gauze Flower. Escape. A plt.
 in old track, '15. Dpd.
- SILENE MARITIMA With. Sea Campion. About 20 plts.,
 shore side. S. LATIFOLIA (Mill.) Rendl. and Brit. (INFLATA
 Sm.). Bladder Campion. 3-4 plts., '15; inc. especially
 at W. end, '17. S. DICHOMATA. Ehrh. Alien. 2-3 plts.,
 '16. Dpd. S. ANGLICA L. English Catchfly. 2 plts.
 in siding track, '15; 3 or 4 in centre, '16; not seen since.

- LYCHNIS FLOS-CUCULI L. Ragged Robin. A plt., '17.
 L. ALBA Mill. White Campion. 3-4 plts.; vig., '15; inc.
 LYCHNIS DIOICA L. Red Campion. A plt. weak, '15. Not
 seen since. L. ALBA x DIOICA. Pink Campion. A plt.,
 '17.
 CERASTIUM VULGATUM L. Com. Mouse-ear Chickweed. Here
 and there. C. VISCOSUM L. Broad-leaved Mouse-ear
 Chickweed. Here and there.
 STELLARIA MEDIA Vill. Chickweed. A few plts.
 ANEMONA SERPYLLIFOLIA L. Thyme-leaved Sandwort.
 Abund. scat.
 SPERGULA ARVENSIS L. Corn Spurrey. 1-2 plts.
 SPERGULARIA RUBRA Presl. Red Sandwort. A plt., '18.
 HYPERICUM PERFORATUM L. Com. St. John's Wort. 9-10
 plts., scat.
 MALVA SYLVESTRIS L. Com. Mallow. 8-9 plts., scat.
 M. ROTUNDIFOLIA L. Dwarf Mallow. A plt., N. margin.
 LINUM USITATISSIMUM. Flax. Escape. A plt.
 GERANIUM DISSECTUM L. Jagged-leaved Cranesbill. A plt.
 G. MOLLE L. Dove's-foot Cranesbill. 3-4 plts. G.
 PUSILLUM Burm. A plt., '18. ROBERTIANUM L.
 Herb Robert. About 20 strong seedlings, '15; about 50
 flowering plts., '17. Cl.
 ACER PSEUDO-PLATANUS L. Sycamore. Escape. 5-6 seed-
 lings, etc.
 GENISTA TINCTORIA L. Dyer's Green Weed. A plt., '18.
 ULEX GALLII Planch. Western Furze. 3-4 plts.
 ONONIS REPENS L. Rest Harrow. A plt. at W. end, '15;
 a dozen or more, '18.
 CYTISUS SCOPARIUS Link. Broom. A plt., '18.
 MEDICAGO FALCATA L. Sickle Medick. A plt., '15. Dpd.
 M. SATIVA L. Lucern. 1-2 plts. M. LUPULINA L.
 Black Medick. Fairly abund., vig.
 MELILOTUS OFFICINALIS Lam. (ALTISSIMA Thuill.). Com.
 Melilot. A group, '16. M. ALBA Desr. White Melilot.
 A good group, '16. M. PETITPIERREANA Hayne (ARVEN-
 SIS Wallr.). Field Melilot. Very abund.

- TRIFOLIUM PRATENSE L. var. SATIVUM Schreber. Cultivated Clover. Escape. Freq. scat. T. HYBRIDUM L. Alsike Clover. Freq. T. PROCUMBENS L. Hop Trefoil. A few plts., '15; a large colony near entrance, '17. T. DUBIUM Sibth. (MINUS Relhan.). Lesser Yellow Trefoil. A few plts., scat.
- ANTHYLLIS VULNERARIA L. Lady's Fingers. A plt., '15-5-6, '17. Strong.
- LOTUS ULIGINOSUS Schkuhr. (MAJOR Sm.). Marsh Birdsfoot Trefoil. A group. L. CORNICULATUS L. Birdsfoot Trefoil. A strong group, etc., '17.
- CORONILLA VARIA L. Crown Vetch. Alien. 2-3 plts., vig.
- ONOBRYCHIS VICIÆFOLIA Scop. Sainfoin. Escape. 1-2 plts.
- VICIA CRACCA L. Tufted Vetch. 1-2 plts. V. SATIVA L. Cultivated Vetch. Escape. 1-2 plts. V. ANGUSTIFOLIA. Narrow-leaved Vetch. A few flowering plts. and innumerable seedlings, '15; very abund., '16.
- LATHYRUS LATIFOLIUS L. Everlasting Pea. Escape. 1-2 plts. L. PRATENSIS L. Meadow Vetchling. 1-2 plts.
- PRUNUS SPINOSA L. Blackthorn, Sloe. 2-3 small plts.
- RUBUS RHAMNIFOLIUS Wh. and N. Buckthorn-leaved Bramble. 2 plts. on N. margin. R. SELMERI Lindeb. (?) Selmer's Bramble. 2-3 plts., N. margin. R. RUSTICANUS Merc. Com. Bramble. 9-10 plts., chiefly on N. margin.
- FRAGARIA VESCA L. Cult. Cultivated Strawberry. Escape. 2-3 colonies of runners.
- POTENTILLA ANSERINA L. Silver Weed. A patch near N. margin. P. REPTANS L. Cinquefoil. Abund. P. PROCUMBENS Sibth. Creeping Tormentil. A strong plt. Cl. P. NORVEGICA L. Norwegian Potentilla. Alien. Group of 5-6 plts., S. side, '15. Cl. Group near N. margin, '17.
- POTERIUM SANGUISORBA L. Lesser Burnet. 3-4 plts., vig.
- ROSA CANINA L. Dog Rose. A plt.
- CRATÆGUS OXYCANTHA L. Hawthorn. 2 seedlings. C. PYRACANTHA Pers. Fiery Thorn. A small plt., '16.
- SEDUM ACRE L. Yellow Stonecrop. 6-7 plts., '16. S. ANGLICUM Huds. White Stonecrop. A small patch.

III

- EPILOBIUM AUGUSTIFOLIUM L. Rosebay Willowherb. About a dozen plts., widely scattered, vig. E. HIRSUTUM L. Great Hairy Willowherb. 2-3 groups, weak. E. PARVIFLORUM Schreb. Hoary Willowherb. Abund., especially on ashes. E. MONTANUM L. Broad-leaved Willowherb. Rather abund. E. PALUSTRE L. Marsh Willowherb. Fairly abund.
- ÆNOTHERA LONGIFOLIA Jacq. Long-flowered Evening Primrose. Alien. A plt. Dpd.
- PHILADELPHUS CORONARIUS L. Mock Orange. Escape. A small plt., '16.
- CONIUM MACULATUM L. Hemlock. 3-4 plts., '16. Cl.
- CHÆROPHYLLUM TEMULUM L. Rough Chervil. A plt., '16.
- ANTHRISCUS SYLVESTRIS Bernh. Keck. A plt., '16.
- FÆNICULUM VULGARE Mill. Fennel. A large group and 2 outliers.
- ÆNANTHE CROCATĀ L. Hemlock Water Dropwort. A plt. near ditch, '18.
- ÆTHUSA CYNAPIUM L. Fool's Parsley. 1-2 plts.
- PEUCEDANUM SATIVUM Benth. and Hook. Wild Parsnip. 2 large colonies.
- HERACLEUM SPONDYLIIUM L. Hogweed, Cow Parsnip. 1-2 plts.
- DAUCUS CAROTA L. Wild Carrot. Several flowering plts. and many seedlings, '15; abund., '16; abnormal state, with proliferous flowers, etc. A plt., very vig., '17.
- SAMBUCUS NIGRA L. Elder. 2-3 young trees.
- GALIUM MOLLUGO L. Great Hedge Bedstraw. 4-5 plts., vig.
G. ULIGINOSUM L. Bog Bedstraw. A small plt. G. PALUSTRE L. Marsh Bedstraw. A small plt. G. VERUM L. Lady's Bedstraw. A plt., '15; 3-4 plts., '16.
- SHERARDIA ARVENSIS L. Field Madder. A small plt., '15; abund., '16, but since mostly cl.
- DIPSACUS FULLONUM L. (SYLVESTRIS Huds.). Teasel. A group, '18.
- SCABIOSA ARVENSIS L. Field Scabious. 1-2 plts.
- SOLIDAGO VIRGAUREA L. Golden Rod. A good plt., '16.

- BELLIS PERENNIS L. Daisy. A seedling, '15.
- ASTER TRIPOLIUM L. Sea-Starwort. About 20, both sides of ditch. A. NOVI-BELGII L. Michaelmas Daisy. Escape. A plt.
- FILAGO MINIMA Fr. Least Filago. A small colony.
- PULICARIA DYSENTERICA S. F. Gray. Flea-bane. A small group, weak, '16.
- HELIANTHUS RIGIDUS Desf. Perennial Sunflower. 1-2 small groups.
- ACHILLEA MILLEFOLIUM L. Milfoil, Yarrow. Very abund., widely scattered. A. NOBILIS L. Fragrant Milfoil. 3 clumps, '17; apparently all cl.
- ANTHEMIS ARVENSIS L. Corn Camomile. A plt. near ent. '17. A. COTULA L. Stinking Camomile. A plt. near ent. '17.
- CHRYSANTHEMUM SEGETUM L. Corn Marigold. 2 plts., '17.
- C. LEUCANTHEMUM Bernh. Ox-eye. 3-4 plts., strong.
- C. PARTHENIUM Bernh. Feverfew. Escape. 6-7 plts., '16.
- MATRICARIA CHAMOMILLA L. Wild Camomile. A good number, especially near ent., '17. M. INODORA L. Scentless Mayweed. Freq. M. SUAVEOLENS Buch. Rayless Camomile. A colony near-ent., '16.
- ARTEMISIA VULGARIS L. Mugwort. 5-6 plts.
- TUSSILAGO FARFARA L. Coltsfoot. Very abund.
- SENECIO JACOBÆA L. Com. Ragwort. Here and there, '15; abund., scat., '16. S. ERUCIFOLIUS L. Hoary Ragwort. 2 plts., one a fine cottony form; apparently cl. S. VULGARIS L. Com. Groundsel. A few; chiefly near ends.
- ARCTIUM MINUS Bernh. Smaller Burdock. 2 plts.
- CARDUUS TENUIFLORUS Curt. Slender Thistle. 2 plts., '16.
- CIRSIUM (CNICUS) LANCEOLATUM Scop. Spear Plume Thistle. Fairly freq. C. ACAULE Weber. Dwarf Thistle. A strong plt. C. ARVENSE Scop. Creeping Plume Thistle. Rather abund. C. A. var. MITE Koch. A group or two, '18. C. A. var. SETOSUM C. A. Mey. A large group and several outliers, very vig., '15. Partly cl. C. PALUSTRE Scop. Marsh Plume Thistle. A plt., '16.

- CENTAUREA NIGRA L. Hardhead, Knapweed. A few plts.
 C. SCABIOSA L. Great Knapweed. Fairly abund.
 CICHORIUM INTYBUS L. Chicory, Succory. 2 plts.
 LAPSANA COMMUNIS L. Nipplewort. 1-2 plts.
 PICRIS ECHOIDES L. Bristly Ox-tongue. A strong plt. Cl.
 CREPIS CAPILLARIS Wallr. (VIRENS). Smooth Hawksbeard.
 Abund. C. TARAXACIFOLIA Thuill. Small Rough Hawks-
 beard. Abund., scat., '16.
 HIERACIUM PILOSELLA L. Mouse-ear Hawkweed. A strong
 patch, '17. H. RIGIDUM Hartm. var. SCABRESCENS Dahlst.
 A strong plt., '18. H. BOREALE Fr. Broad-leaved Hawk-
 weed. About 25 plts. H. UMBELLATUM L. Narrow-
 leaved Hawkweed. A plt.
 HYPOCHÆRIS RADICATA L. Long-rooted Cat's-ear. Here
 and there, vig.
 LEONTODON HISPIDUS L. Rough Hawkbit. 2 strong tufts,
 '18. L. AUTUMNALIS L. Autumnal Hawkbit. 1-2 plts.,
 '15; much inc., scat., '17.
 TARAXACUM VULGARE (Lam.) Schrank. Dandelion. Fairly
 abund., scat.
 SONCHUS ARVENSIS L. Corn Sowthistle. A plt. S. ASPER
 Hill. Rough Sowthistle. Here and there. S. OLER-
 ACEUS L. Com. Sowthistle. Here and there.
 TRAGOPOGON PRATENSIS var. MINUS (Mill.). Goatsbeard. A
 plt., '15; freq. scat., '17.
 CALLUNA VULGARIS Hull. Ling. A plt.
 ERICA CINEREA L. Fine-leaved Heath. A plt., '18.
 ANAGALLIS ARVENSIS L. Scarlet Pimpernel. A plt.
 MYOSOTIS DISSITIFLORA Baker, var. ALBA. White Forget-me-
 not. Escape. A plt., '18. M. SCORPIOIDES L. (ARVENSIS).
 Field Scorpion-grass. 1-2 plts.
 ECHIU M VULGARE L. Viper's Bugloss. A plt., '15; 4 plts.,
 '16. E. PLANTAGINEUM L. Jersey Bugloss. A plt., '15.
 Dpd.
 VOLVULUS SEPIUM Medic. Great White Bindweed. 2 plts.
 CONVULVULUS ARVENSIS L. Field Bindweed. 2-3 plts.

- SOLANUM DULCAMARA L. Bitter-sweet. A strong plt. near W. end. S. NIGRUM L. Black Nightshade. 2 plts. S. TUBEROSUM L. Potato. Escape. A few plts. near W. end, '18.
- VERBASCUM THAPSUS L. Great Mullein. A plt. on N. margin.
- LINARIA VULGARIS Mill. Yellow Toadflax. Very abund. everywhere. L. MINOR Desf. Small Toadflax. Very abund., chiefly in large colonies, '15; dec., '17.
- ANTIRRHINUM MAJUS L. Cult. Garden Snapdragon. A plt., '18. A. ORONTIUM L. Small Snapdragon. 1-2 plts.
- SCROPHULARIA AQUATICA L. Water Betony. W. Figwort. Group of 7-8 plts.
- VERONICA CHAMÆDRYS L. A plt., '18. V. ARVENSIS L. Wall Speedwell. 1-2 plts. V. TOURNEFORTII Gmel. (BUXBAUMII). Large Field Speedwell. 5-6 plts.
- BARTSIA ODONTITES Huds. Red Bartsia. 3-4 small plts., '16.
- OROBANCHE MAJOR L. (ELATIOR Sutton). Tall Broomrape. 1 plt. on Coltsfoot
- SATUREIA (CALAMINTHA) ACINOS Scheele. Basil Thyme. Small group in centre and colony on ash-heap, '15; also a large patch, vig., '16.
- SALVIA SYLVESTRIS L. Wood Sage. Alien. 2 plts., '16. Dpd. S. VERTICILLATA L. Whorled Sage. Alien. 10-12 plts., scat. in centre.
- NEPETA HEDERACEA Trev. Ground Ivy. A plt.
- STACHYS PALUSTRIS L. Marsh Woundwort. 1-2 plts.
- GALEOPSIS TETRAHIT L. Hemp Nettle. A plt.
- LAMIUM PURPUREUM L. Red Dead-nettle. A few plts. L. AMPLEXICAULE L. Henbit. A plt.
- TEUCRIUM SCORODONIA L. Woodsage. 2-3 patches, very vig.
- PLANTAGO CORONOPUS L. Stagshorn Plantain. Several plts. near W. end. P. MARITIMA L. Sea Plantain. 2-3 plts. on side of ditch and 1 robust in centre. P. LANCEOLATA L. Ribwort. Here and there, vig. P. MAJOR L. Great Plantain. A few, especially near ent. P. MEDIA L. Hoary Plantain. A plt., '16.

- CHENOPODIUM ALBUM L. White Goosefoot, Fat Hen. Here and there.
- BETA VULGARIS L. Cult. Mangold. Seedlings scat. in siding, '15. Dpd., '16. B. MARITIMA L. Sea Beet. 2-3 plts. on shingle, shore side, and some on margin of ditch, N. margin.
- ATRIPLEX HASTATA L. Hastate Orach. Abund. fringing ditch.
- POLYGONUM CONVULVULUS L. Climbing Persicaria. 1-2 plts., N. margin. P. AMPHIBIUM var. TERRESTRE Leers. Amphibious Persicaria. A plt. P. LAPATHIFOLIUM L. Pale Persicaria. A plt., '15; group of 5-6 plts., '17. P. PERSICARIA L. Spotted Persicaria. 1-2 plts., '15; about 20 small plts., '16. P. AVICULARE var. ANGUSTIFOLIUM S. F. Gray. Knotgrass. 2-3 plts. near W. end. P. CUSPIDATUM Sieb. and Zucc. Giant Knotgrass. Escape. 2 clumps.
- RUMEX CRISPUS L. Curled Dock. Here and there. R. OB-TUSIFOLIUS L. Broad-leaved Dock. Here and there. R. CONGLOMERATUS Murr. Sharp Dock. 2-3 plts. R. ACETOSA L. Dock Sorrel. 1-2 plts. R. ACETOSELLA L. Sheep's Sorrel. Several plts.
- EUPHORBIA HELIOSCOPIA L. Sun Spurge. 1-2 plts. E. PEPLUS L. Petty Spurge. Colony of 10-12 plts.
- MERCURIALIS ANNUA L. Annual Mercury. A small group, '16.
- URTICA DIOICA L. Stinging Nettle. 2 patches.
- BETULA ALBA L. (VERRUCOSA). Warty Birch. Several seedlings. B. TOMENTOSA Reith (PUBESCENS). Downy Birch. A strong young tree, '17.
- QUERCUS ROBUR L. (PEDUNCULATA). Oak. 10-12 seedlings, scat., '16. Q. CERRIS L. Turkey Oak. Escape. A seedling. Q. LUCOMBEANA Hort. Lucombe's Evergreen Oak. Escape. A small plt.
- SALIX AURITA x CINEREA (LUTESCENS A. Kern). Hybrid Willow. A strong young tree '17. S. VIMINALIS L. Osier. A small plt.

- POPULUS BALSAMIFERA L. Balsam Poplar. Escape. A small plt.
- ORCHIS MORIO L. A plt., '18.
- IRIS GERMANICA L. German Iris, Escape. A plt., '18.
- MONTBRETIA CROCOSMIÆFLORA Hort. Escape. A plt.
- ASPARAGUS OFFICINALIS L. Asparagus. A plt.
- ANTHOXANTHUM ODORATUM L. Sweet Vernal Grass. A plt., '17.
- ALOPECURUS MYOSUROIDES Huds. Slender Foxtail. A plt., '16.
- PHLEUM PRATENSE L. Timothy Grass. Cat's-tail. About 20 plts. in 3 scat. groups.
- AGROSTIS ALBA var. STOLONIFERA L. Creeping White Bent. Abund. A. A. var. MAJOR Gaud. Greater White Bent. A group. A. TENUIS Sibth. (VULGARIS). Fine Bent. Abund.
- AIRA CARYOPHYLLEA L. Silver Hair Grass. A colony.
- HOLCUS MOLLIS L. Soft Grass. 1-2 plts., '17. H. LANATUS L. Yorkshire Fog. Rather abund.
- AVENA SATIVA L. Cult. Oats. Escape. 3-4 plts. A. PRATENSIS L. Perennial Oat Grass. A plt.
- ARRHENATHERUM ELATIUS M. and K. False Oat Grass. Rather abund.
- DACTYLIS GLOMERATA L. Cock's-foot. Here and there, vig.
- POA ANNUA L. Annual Meadow Grass. A few near ent.
P. PRATENSIS L. Smooth Meadow Grass. 2 large patches, '17.
- FESTUCA RUBRA L. Red Fescue. Chiefly on N. margin.
F. MYUROS L. Wall Fescue. Very abund., '16.
- BROMUS STERILIS L. Barren Brome. Rather abund., '16.
B. UNIOLOIDES H. B. K. American Brome. 3-4 plts., weak. B. HORDACEUS L. (MOLLIS). Soft Brome. A plt., '15; very abund., '16.
- LOLIUM PERENNE L. Perennial Rye Grass. A number, especially near N. margin and ent. S. MULTIFLORUM

var. ITALICUM (Braun) Cult. Italian Rye Grass. Escape.
A few plts.

AGROPYRON PUNGENS Roem. and Schult. Sharp Couch-
grass. 3 patches. A. REPENS L. Com. Couch-grass.
Abund.

TRITICUM ÆSTIVUM L. (VULGARE) Cult. Wheat. Escape.
2-3 plts.

HORDEUM MURINUM L. Wall Barley. 2-3 plts.

PINUS SYLVESTRIS L. Scotch Fir. 2-3 small plts.

EQUISETUM MAXIMUM Lam. Great Horse-tail. 4 or 5 stems,
stunted. E. ARVENSE L. Common Horse-tail. Some
near ent. and large patch towards centre, '15; inc., '18.

CERATODON PURPUREUS Brid. Purple Horntooth Moss. A
little, '15; abund., '17.

FUNARIA HYGROMETRICA Sibth. Cord-moss. A little, '15;
abund., '17.

BRYUM ARGENTEUM L. Silvery Thread-moss. Fairly abund.,
with fruit.

LENTINUS LEPIDEUS Fr. (A tough, scaly agaric.) A sporo-
phore on sleeper.